The multiple temporalities of contemporary life, the infosphere and the planet

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Abstract

Purpose: This dissertation explores concerns and experiences of time and temporality in contemporary life and a societal climate that includes both Information and Communications Technology (ICT) ubiquity and instantaneous communications, and ecological crises countdowns, and how experiential time issues relate to both Library and Information Science and our lives as informational agents.

Methodology / approach: The dissertation proceeds according to desk-based research using literature from the field of Library and Information Science (LIS), as well as media and cultural theory, sociology and the arts. The methodology is additionally enhanced by a bricolage research approach.

Findings / recommendations: Societal conditions of acceleration (in industrial processes) and immediacy (in communications, transactions and consumption) engender a plurality of times at work in an intensified present tense, which are evidenced within the multiple temporalities at work within our ICTs, our contemporary work practices, and a social entanglement of people living according to varying schedules. Time and multiple temporalities raise many issues for LIS, as well as Floridi’s infosphere, and we might benefit from the formulation of a time literacy to accompany that of information literacies.

Originality / value: The dissertation attempts to bring together theories and concerns from related and complimentary fields together with those from within LIS to illuminate concerns and questions of both specialist and general relevance. Time’s inherent importance to our lives in the infosphere is highlighted, and a provisional time literacy outline is proposed.

Keywords: Time, Temporalities, ICTs, Infosphere, Acceleration, Immediacy, Entanglement, Climate Crisis, Time Literacy
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1. Introduction

1.01. Background

“It was like we had too much time and not enough time all at the same time”
(overheard by the author, c.2006).

“[T]ime is full of information [...]. It gives us the sense that we are incessantly engaged in communication with the entire world” (Nowotny, 2019, p.77).

“[O]h yes, I’ve never got enough time [...] but anyway, the world is running out of time” (Baraitser, 2021, p. 2).

The following dissertation research project concerns time; specifically, the experience of time and temporality, or multiple temporalities, within a contemporary phenomenon of immediacy and instantaneous communications enabled via Information and Communication Technologies (ICTs).

Time is a constant factor in our lives; we are what and who we are according to duration and temporal processes, and our conscious awareness of time only intensifies when the ICTs we increasingly depend upon in our societies and individual lives are time-based technologies that recall us to the fact of time’s movement and passing in an ongoing, if not relentless manner.

If all human activity is embedded in time (Savolainen, 2006), and human activities can be considered to us as being both meaningful and informational –occurring in what Luciano Floridi terms the *infosphere*, which is to say today’s relational, informational reality (Floridi, 2010)– it follows that our personal and societal perceptions of time affect our activities, and society’s time regime(s) affect our personal and social lived time and temporal experience.
If we agree that we live within an increasingly complex and interconnected digital revolution, we must consider this new situation via ICTs – their time-based, durational processes, and our activities involving them – as a revolution in time and temporalities. And it is perhaps natural to perceive this as a process of acceleration in our societies and everyday lives as they are transformed both by future-bringing ICTs and the increasing uncertainty of the future as it becomes impossible to ignore the time-frames and countdowns of the environmental crisis.

Today, it is common to feel rushed, harried, wasting or losing time, and if not the generic pace of (modern) life, we may blame ICTs or the manner of work and influence upon other areas of life that they engender and oblige. Yet, as we will explore, the reality is more complex, with temporalities experienced being variable and plural. This would suggest a healthier perception of time might consciously acknowledge and integrate better the multitude of times both experienced and at our disposal, afforded by new technologies and our new behaviours among them.

While human life is undoubtedly subject to increasing acceleration in all manner of areas, the Covid pandemic adds additional layers to the complexity of contemporary lived time, as great numbers of people have been obliged to work from home, further overlapping employment with domestic labour, care work, leisure and private life; while certain norms of consumption and leisure have been transformed during periods of lockdown. Some aspects slowed-down, others sped up. And as we live among cycles of restriction easing and reintroduction, there is much debate about what has changed and how life will be lived subsequently (and what exactly we mean when we say “back to normal”). This itself presumes something predictable about the times ahead. But they are anything but certain.

1.02. Research Focus

This research project has its origins in questions arising around the experience of time today and in relation to topics within our LIS studies, such as the subtext of catch-up and adaptation required in any technological development but critical today when innovation is
so constant and information resources and user behaviours are continually changing. This in tandem with more general thinking around myself, peers, and wider society expressing ongoing busyness and rush, and the time-scales that come with the environmental crisis; and my sense that these factors all combine and threaten the fruits, both apparent and potential, of the infosphere. These concerns underpin this dissertation and intend to give it its research focus.

Initial questions included:

- Despite the speed of communications and cultures of convenience that our ICTs offer and enable, why do we regularly feel we do not have enough time (or any time at all)?
- Why do we feel rushed, behind time, and/or that we have wasted time (which we had so little of anyway)?
- Could one reason for this be that much of the ‘between’ of – and ‘surround’ to – our activities are at timings we both accept and struggle to grasp; the instantaneous speed of information transfer, same or next-day goods delivery, the seeming slowness of greater progress, and the environmental time-scales impending upon us due to industrial and polluting processes?
- Could another be that many previously ‘spare’ moments are now filled by further ICT use; checking messages, work, social media feeds, rolling news and entertainments, and general ‘keeping up’ on our devices?
- How do these factors affect our lives, generally and informationally?

Today, we create and draw from amounts and avenues of information that our predecessors would struggle to comprehend, and we can quickly access much of it via these complex personal devices interconnected within the network online. Our capability to make the most of this abundance is affected by time as it is experienced both personally and societally. As we have recently evolved more according to our technologies than via environmental factors, requirements or drives, so too does time evolve.
Contrasting narratives suggest a plurality of time and temporalities at work today, rather than a singular dominant notion. This finds us working online out of hours, sitting on public transport while chat-messaging someone on the other side of the planet, obliged by a social media account to remember a ‘memory’; a post from some years ago. And it finds us ‘time poor’ in an “endless present” (Carroll, 2016), with “12 years” or “18 months” to save the planet from human-caused global warming and subsequent, irreversible environmental collapse (McGrath, 2019).

It is this seeming conundrum or quandary the research will focus upon, which calls for an exploration of recent and contemporary theories upon time, and lives as led within the ICT-dominated, information-rich societies that we in the Western world inhabit today.

With our lives dominated by ICTs, the sense of time as crucial to how our lives are run and play out, the mitigation of environmental destruction and the climate crisis, and the pandemic opening new windows on our time(s); perhaps we might be enriched by a greater time knowledge and awareness upon how we might act (or otherwise) in and among them. This dissertation attempt to do this, via a mostly previously unknown [to the author] body of literature and research, and to offer considerations and approaches to our times, as well as explore issues of time and temporality within Library and Information Science (LIS).

1.03. Aims and Objectives

This research project aims to explore time as experienced with the unprecedented contemporary situation of societies dominated by ICTs, interconnectedness, simultaneous information transfer, and the effect on employment, unpaid work, leisure and other areas of life as enabled by our 24/7 availability engendered by smart devices. I contend that this cannot be separated from temporal factors found within the climate crisis. Therefore, the objectives of the dissertation are as follows:

- Identify factors contributing to the scenario of time and temporal experience today
• Analyse and evaluate the literature formulating and conveying thought and theory upon time and temporal experience as found in LIS and other subject areas such as sociology, media theory and the arts
• Explore issues of time as they apply to LIS
• Propose a literacy of time to complement that of information

As time underpins all human activity, literature from other subject areas is of great importance if we are to avoid narrow accounts or purely specialist concerns. Concepts and approaches to time from all areas could have wider application. The struggle to navigate and truly plan ahead in a culture of immediacy and global crisis (surely unique to history and human civilization), despite the unprecedented wealth of information available, calls to new relationships with time that may benefit by drawing from fields complimentary to LIS.

1.04. Outline of research methodologies

The project will take place according to the methodology of desk-based research, where we study the topic(s) via the previously published material available, here primarily in book and article forms via City University Library, The Royal College of Art Library (the author’s workplace), other open web online resources, as well as material encountered during the project and found to be complementary and of relevance.

Within desk-based research, the project has found parallels with the methodology of Bricolage research, whereby a reflexive research practice incorporates material from beyond traditional academic sources and the more obvious subject areas. This will be detailed further in the Methodology section below.

Prior to this, we will undertake a context-setting literature review. Following the methodology detailing, the dissertation will then embark upon the main literature review and analysis of the project, followed by discussions, leading to concluding comments and a project reflection.
1.05. Value of research

It is the author’s view that time is the subtext to all manner of contemporary issues and developments, and lays behind many day-to-day matters. If we appreciate Floridi’s infosphere as a contemporary form of reality that aids us in understanding what is taking place today in ICT-rich societies, it would follow that a consideration of time and our experience of it should form part of our informational comprehensions.

Time might not appear to be a priority in this or that subject, but we remain embedded in time, and its abundance or scarcity, if not it’s very quality (or qualities) affect our activities today. As both an information professional and practicing artist, the author’s relationship to time is key, perhaps also resulting in a noticing of time anxieties as they appear among friends, peers, and in wider society. In this sense, the research project here has both personal and social significance.

In exploring concepts and theories of time today the research will attempt to outline a provisional time literacy, that might complement information literacy, and go some way to empowering us in our time-based activities where time might feel that it is constantly under threat.
2. Preliminary Literature Review

2.01. Initial information seeking on the research topics

As we are exploring the experience of time in contemporary life, and according to the truism that all human activities are “embedded in time” (Savolainen, 2006); that we and our societies are “embodied time” (Castells, 2010a, p. 460), we already face a choice in selecting material, as, in addition to Library and Information Science, the source subject area(s) could be social and cultural theory, philosophy, the arts, and so on.

Initial suggestions offered by my dissertation tutor that followed my proposal offer LIS-specific concepts such as “time horizons” (Savolainen, 2006); the time required for information and research as well as one’s ability or otherwise to devote such time, and “information grounds” (Petigrew; in Savolainen, 2006) which are informational settings and environments, and can be temporal in nature (such as a meeting), as well as permanent (such as a library).

Luciano Floridi has been a continual source during our LIS studies, and Floridi’s Infosphere, while being a means of considering reality itself—if one accepts that what is real is also informational (Floridi, 2016)—adds an all-encompassing context to the idea of more day-to-day, local and/or circumstantial information grounds. Indeed, if informational processes can only occur in durations (of time), and the Information and Communication Technologies (ICTs) upon which so much of our lives today are spent and now depend (Floridi, 2016) are time-based technologies (to a greater, more exacting degree than analogue machines and tools), we can better understand the obvious; that our lives and our societies today are uniquely time-based.

Exploring the topic in parallel via searches using such keywords as time, temporality, and temporalities, begins to unfold areas of research such as an anthology of sociological and media theory essays entitled Mediated Time (eds. Hartmann et al, 2019), which concerns the experience of time in an era of networked ICTs such as smartphones and other personal
and/or work devices. The in-text citations and reference lists were of great help in revealing certain key works from the past few decades; the time period that appears to herald the peculiar and unique time-relationship(s) we have today, intertwined as they are with the opportunities and demands of our ICTs.

This itself leads back to Floridi, whose work regarding the ICT age sets out a tangible reading of contemporary times via such concepts as the Infosphere and Onlife, detailed further on.

We will now move to a preliminary literature review that intends to set out the context for the experience of time today and its implications for our activities in our primarily informational environment, prior to a detailing of the project’s methodology that will precede the more expansive literature analysis.

2.02. Preliminary literature review

The process of modernism and modernisation has been one of societal acceleration via heavy industry and notions of progress, to a more recently intensified modernism where processes and consequences occur at speeds often detrimental to individuals, institutions, societal stability and the earth's resources (Rosa, 2015). This has profound effect on our sense of time; the time of our own lives and the epoch within which we live (Rosa, 2015).

A global speedup of technological processes and exchanges has knock-on effects for both cultural change and the individual requirement to keep-up and adapt to these changes (Sharma, 2014a; Rosa, 2015). Acceleration leads to a fragmented and intensified time, and modern secular societies fill the spiritual gap previously occupied by religion with the notion of a fulfilled life that makes the most of many options; invariably a busy life (Rosa, 2015; Wajcman, 2015; Sutherland, 2019).

We find ourselves in a condition of immediacy that is enabled by the instantaneous transaction of data and information inherent to our ICTs (Tomlinson, 2007). Immediacy alters our perceptions and expectancies of how time passes in an individual and social
manner. It sees us able to communicate with a person on the opposite side of the world at the same speed and in essentially the same moment as that of someone in the same postcode without, say, having to wait for them to be off work and at home near a landline telephone. We can enjoy same or next day delivery, comment publicly on social media platforms within seconds of a breaking news story, and organise all manner of life matters and decisions whether at home or anywhere with internet signal and at times perhaps more of our choosing.

Immediacy also makes severe demands upon the work practices of both individuals and institutions as we are increasingly obliged to operate at any and all times (Rosa, 2015; Wajcman, 2015; Görland, 2019). It creates challenges for democratic institutions as they lose grip upon global financial markets and the speed of debate. And in addition, immediacy creates a contradiction whereby consumerism is supposedly effortless for the buyer while unpredictable and intensified for the workforce of the product and services provider (Tomlinson, 2007).

In a present modernity of immediacy fuelled by this fast capitalism (Tomlinson, 2007), online and available almost around the clock with our work and domestic lives blurred, and more traditional everyday roles and rituals turned to ongoing matters of synchronising individual and household schedules, we have cause to feel harried (Wajcman, 2015). In this sense we are entangled in multiple, relational temporalities of our own as they come into contact with those of others (Sharma, 2014a); friends and family, work colleagues, service providers, fellow locals to our areas, other commuters, social media knowns and unknowns (aligned via algorithmic connections), and so on.

In parallel with wider society, our day-to-day lives become more improvisatory than planned ahead, as we are required to alter according to variable circumstances, events, options, limitations, and time running out (Rosa, 2015). This leads to an episodic life of unconnected fragmentary experiences, full (busy) but perhaps insubstantial, (Rosa, 2015), one lacking direction and even a greater narrative that we can build upon and return to (Han, 2017), as well as an erosion of concern with—or rather action towards—common societal progress (Rosa, 2015; Tomlinson, 2007).
On a practical level, we find ourselves constantly having to *recalibrate* (Sharma, 2014a); that the pace and nature of contemporary times demands this of us, and much of the success in our lives is how well we can or are able to do this, according to personal resources and support systems (Sharma, 2014a). For example, the frequent-flying business person who earns a high salary for their work is ‘time-poor’ as they rush from meeting to meeting and airport to airport, however they likely have the means to recalibrate according to luxury services (lavish holidays, costly wellness and therapies, etc) in the way a service worker does not, and who may well be the one hurriedly clearing up after the business person in any number of scenarios (Sharma, 2014a).

While we might assign blame for our sense of harried-ness on our smart devices and the always-on nature inherent to them and seemingly demanding of us, the reality is more complex (Keightley, 2012; Sharma, 2014a; Wajcman 2015), these technologies being encoded and inscribed with specifically human aspirations and intentions for them (Wajcman 2015).

New media devices offer us a plurality of times, as they themselves operate at temporalities de- and re-synchronising online within the network. Indeed, modernism’s acceleration and societal / global immediacy themselves create a *plurality* of tempos in which our activities take place (Sharma, 2014a; Prommer, 2019). We can see this in, say, our often somewhat differing attitudes to replying to an email or an instant message (Wajcman, 2015) via Whatsapp or similar, whereby our having read the message can be seen by the sender (in the form of a grey tick turned blue). We might combine medias in the space of a moment, such as instant messaging while we watch a tv programme or listen to music; this intensifying the plurality of temporalities at play within that moment, and this can be seen as *polychronicity* (Prommer, 2019).

We can view Floridi’s infosphere as where these multiple times great and small meet and take place, within the experience of *Onlife*; the complex and motion-full analogue and digital mix of everyday life (Floridi, 2014, p. 43), occurring as it does in the increasingly informational experience of present reality as enabled by our ICTs and their
interconnectivity. Onlife and polychronicity lend to Rosa’s intensification of any given moment (Rosa, 2015), itself sometimes lending to our sense of harried-ness and other times not (Wajcman, 2015; Prommer, 2019).

Every form of communication is a temporal process (Sebald, 2020, p. 992), and in coming to exist among ICTs our relationship with time is heightened, as we inscribe them and they come to inscribe upon us. Our ICTs are essentially networked 24/7, and as they offer to save us time, we come to spend more and more time using them (Görland, 2019). And as we live far less according to plan and far more according to action in the present, we negotiate both the increasingly full, intensified current moment and the anticipated, imminent moment of the responses within our networked communications exchanges and processes (Sebald, 2020; Haider and Sundin, 2021).

Paul Virilio wrote that instantaneous telecommunications would anchor us exclusively in the present, collapsing spatiality whilst cementing our sedentariness before the vertiginous screen of our transmissions; the “final void” of this vacuum (Virilio, 1997, pp. 33). The infosphere however is far more a contemporary ecosystem of relentless activity and transaction. We may have the personal and social sensation of a “frenetic standstill” (Rosa, 2015, p. 15), and the health of infosphere calls for care and maturation via ethics and good-governance (Floridi, 2010), but, unless we are truly blinkered, it is far from a void.

Emily Keightley writes that “media technologies seem to have made possible a new shared moment of action in time; a vertiginous togetherness” (Keightley, 2012, p. 2), and we might better contemplate time both in the plurality and interconnectedness of our ICT-enabled temporalities, and the entanglement via domestic and social combinations or contrasts, rather than by individual experience (Sharma, 2014a; Wajcman, 2015).

It appears to have always been difficult to grasp an essence of time, to describe and explain it (Augustine, 397-98, in; Groom, 2013). However, we and our activities are rooted in time, and stem from it; this influencing our ability to seek and use information (Savolainen, 2006). In turn, this is affective upon our abilities to experience, absorb, reflect upon and reuse the stuff of Floridi’s Semantic Capital; learning, the arts, everyday information and culture.
(Floridi, 2018a), much of which today comes via our ICTs in the form of streaming content, rolling news and social comment, interactive media and learning tools, and various other forms of information.

We might consider such common contemporary concepts such as: information overload, the attention economy, the myriad distractions available to us at any moment via our ICTs, an obsession with the present and the imminent moment that curdles and struggles to bind with the overwhelming nature of the climate crisis and our countdown through its unfolding stages as apparent already and predicted by science—as issues of time; of our times, and of our state of existence in and according to contemporary time.

The climate crisis itself, while coming in the shape of year and date deadlines for action such as 2018’s 12 years to avoid climate catastrophe (McGrath, 2019), and 2030/2050 as target dates for varying emissions cuts in mediating critical temperature rise, might provide us with an alternative way to view plural and informational time; as not only according to ICTs, but also natural cycles from the regrowth of depleted reefs, life-cycles of varying species, etc (Bensaude-Vincent, 2021). Floridi’s infosphere, while initially appearing human-centric, makes apparent our not being central (Floridi, 2017); this due to our reliance on both machine intelligence / intercommunication and the ecosystems of the planet, and so is able to incorporate environmental concerns that call for us to attempt greater harmony with the plurality of temporalities that is the life-supporting environment of Earth.

If the contemporary time(s) scenario weren’t complex enough, we find ourselves in the midst of the temporalities-altering event that is the Covid 19 pandemic; where social restrictions, lockdowns, and working from home have become common realities for many people, at the same time that the reduction in those out and about has become common for people still having to go to work at jobs that cannot be done from home, with basic care and maintenance labour such as nursing, product delivery and litter collection being newly reconsidered and rightly appreciated in a conscious manner perhaps previously neglected by the preoccupation of increases in ICT-based knowledge and systems work.
At this juncture, we conclude our initial, context-setting literature review, in which the intention has been to ‘set the scene’ of contemporary time in both the individual sense and a wider societal situation. Following the methodology section, the material covered above will be expanded upon and added to in the literature analysis section which will combine both review with interpretation before further discussion on our research topics.
3. Research Methods

3.01. Desk-based Research

This dissertation is a desk-based research project. As such, it is secondary research, where we review material in the field of study that the research question finds itself located. This is to gain a broad and thorough understanding of the field (Travis, 2016), both historically and presently.

Desk-based research involves the study, analysis and interpretation of “past data” (Oxbridge Essays, 2020); in our case here, predominantly text material in the form of articles, books and studies on the topic of time and temporality from the subject fields of library and information science, media theory, sociology and cultural theory, as well as the arts which the author believes can offer additional insights on the topic. As stated previously, time is inherent factor to all human activity, and with its increasing conscious relevance for us (via our interactions with time-based ICTs), we can find reference and literature on time and temporality in many subject areas.

Such a project involves considering various terms, concepts and issues on the topic as they appear in the material accrued, therefore our research and analysis will be of a conceptual and, to some extent, a philosophical nature (Bawden and Robinson, 2012, p. 317).

In accordance with the research focus upon the experience of time in contemporary life, the theoretical sources throughout have tended to come more from social and media theory rather than philosophy. While philosophical sources are touched upon at points (the contemporary philosopher and cultural theorist Byung-Chul Han, for example), I have avoided the potential of becoming bogged down in the work of, say, Henri Bergson, Heidegger, and so on, with the wish that this reasoning is clear and logical to the reader, and that these thinkers will not be missed here. A more general philosophical aspect is aspired to, however. We might ask, how could a project based upon the experience of time not involve the philosophical?
Time is a subject both simple (in our ongoing, conscious, everyday relationship with it) and deeply complex. In finding related theories and notions in various fields and combining them, we might bolster a perception of contemporary time(s) as composed of varying, overlapping and influencing temporalities that unfold in contemporary experiences, intensities and stresses. A conceptual, desk-based research project with an interpretive approach would appear well-suited to the research concerns and objectives.

3.02. Bricolage Research

My dissertation proposal posited various angles onto time that reach beyond library and information science and media theory to the arts, and a methodology that I encountered following the proposal submission is that of ‘Bricolage research’.

Bricolage is a French word, and a definition is as follows:

- a construction made of whatever materials are at hand; something created from a variety of available things.
- (in literature) a piece created from diverse resources.
- (in art) a piece of makeshift handiwork.
- the use of multiple, diverse research methods.

(dictionary.com, 2022).

Outlines of the concept of Bricolage research are as follows:

“Generally speaking, when the metaphor is used within the domaine of qualitative research it denotes methodological practices explicitly based on notions of eclecticism, emergent design, flexibility and plurality. Further, it
signifies approaches that examine phenomena from multiple, and sometimes competing, theoretical and methodological perspectives” (Rogers, 2012).

“The bricolage exists out of respect for the complexity of the lived world and the complications of power and privilege or the lack thereof” (Kinchemoe, McLaren, Steinberg, and Monzo, 2018, p. 244).

As demonstrated by Rosa (2015), the experience of time is historical (our epoch’s time), societal (contemporary society’s time), and personal (individual and subjective time) (Rosa, 2015). In understanding this we acknowledge the complexity and plurality of the experience of time as it operates on various levels and in combinations, and influenced variably by the life circumstances of this or that individual, and this or that society. All the while, experiences and perceptions of time are in motion(s) as our ICTs continually update, are updated, and oblige us to adapt to them. Therefore, the research topic would appear a natural fit to a bricolage approach.

The bricoleur *tinkers*, and in a research context “this tinkering is a high-level cognitive process involving construction and reconstruction, contextual diagnosis, negotiation, and readjustment” (Kinchemoe, McLaren, Steinberg, and Monzo, 2018, p. 245).

Bricolage itself cannot be fully and fixedly defined, giving this approach an interpretive and flexible aspect key to its makeup (Kinchemoe, McLaren, Steinberg, and Monzo, 2018, p. 249).

In my dissertation proposal I wrote that:

“In finding related notions in various fields and combining them, we might bolster a concept of contemporary time as composed of varying, overlapping and influencing temporalities that unfold in contemporary experiences, intensities and stresses. [...] As time is a subject both simple (in our ongoing, conscious, everyday relationship with it) and deeply complex, one could come at the subject from many angles, and via a great deal of material old and new” (Mason, 2021).
We can see in these remarks a bricolage approach forming. Such an approach may help a researcher “respect the complexity of meaning-making processes and the contradictions of the lived world” (Rogers, 2012).

The lived world is one of activities in time and occurring within temporalities and durations. As time cuts across the individual, the community, and the environment, and in times where we have both leisure time and the sense of being overly busy or harried, the complexity and contradictions that unfold over the course of the reading and analysis of material continually test and reorient the thread laid out by the initial research concerns.

Bricolage research often incorporates material from underrepresented and/or non-typical sources that may or may not be of an academic nature, prior to our academic treatment. It is of note and refreshing that many sources encountered in the research here are women. As we will see, in a climate of acceleration where individuals juggle occupation, domestic work, interconnected social lives, a blurring of work and non-work life, and so on, which all add towards an inherent state of multi-tasking seemingly necessary to negotiate the 21st century; women do seem ideally-placed, as it were, to describe the trajectory of changes that are occurring in ‘our’ everyday lives.

It should perhaps go without saying that women have been multi-tasking all along (lives combining unpaid domestic and care work, increasingly part of full-time paid work, and so on). And while the fathers of our default concepts of time are just that, our future ideas of time may well be the children of today’s time-theory mothers, such as Judy Wajcman, Sarah Sharma, Emily Keightley, and so on.

While the project is not necessarily a thorough example of Bricolage, the integration of thought and documents from a number of fields would appear to chime with this methodology, and the development of the dissertation has proceeded with an intention and consciousness of this pluralism.

The methodology of bricolage will not be laboured throughout the dissertation. Rather it is laid out here as inherent to the topic(s) and complimentary to the desk-based research the
project is based in, and should be seen in action as we proceed. An evaluation of this aspect of our methodology will be included in the reflection.

3.03. Project Limitations

The experience of time and temporalities, while today unique to ‘our times’ are of course experienced subjectively. One person may, for example, thrive on ICT devices and a sense of pace and occupation, another may find such intensely stressful, not be partial to endless screens and screen time, and so on. Many surely exist in motion between these two poles.

The topic could be seen through the lens of any base subject, therefore, maintaining a directional focus could be a challenge. A wealth of material, while initially positive, may become unwieldy, and due to the general subject, time, be potentially endless. And a Bricolage approach may test the clarity and thread of the emergent paper.

Additionally, as the topic gains in conscious relevance, due to the time-based nature of our constant ICTs whose applications occupy us throughout any given day, the somewhat time-reorientating nature of the Covid crisis and relevant restrictions on social activity, and the countdowns within climate crisis predictions, all manner of articles are appearing constantly. A research focus is itself at risk of distraction not dissimilar to that of the general near-constant re-routing, today, of our not unlimited attention spans. These factors may find the researcher falling back on the more traditional academic material, so an open-minded but purposeful balance is hoped for.

For these reasons, the author would not go so far as to call the literature review ‘comprehensive’, as this feels a grand claim on the topic of time, an impossible task, even. However, ‘selective’ sounds limited for a desk-based research project whose foundations are its literature review, therefore an extensive literature review will be aimed for.

These project limitations outlined here will be considered in the project reflection, towards the end of this dissertation.
3.04. Ethical considerations

The ethical considerations in our desk-based research, as suggested above, relate to the selection of material for study. By investigating an extensive literature, the author intends to draw from a breadth and wealth of research and thought which in each case draws from such a wealth. And by doing so, we absorb multitudes and refinements of discourse on the research topics, and surely avoid a narrow, biased or intellectually limited literature on which to base our discussions and conclusions. Our bricolage methodology feeds into and emerges from this scope.

3.05. Definitions: Media and ICTs

While we understand the acronym ICT (Information and Communication Technology), certain of the literature cited uses the term *media*, in the Marshall McLuhan manner of electric or electronic media (McLuhan, 1968); i.e., new media (technology) and its use, rather than news media companies and initiatives. Therefore, while read in the relevant contexts, media and ICTs can be considered as referring to essentially the same thing.
4. Literature review and analysis

4.01. Introduction

This literature review aims to work through a number of progressive stages in considering material relevant to the research topic and objectives. A number of theories will be explored that outline what we might see as the scenario of time and temporality today in modern, technology-enabled and dependent societies. Following this, we shall explore in greater depth the sense of busyness and hurry that is commonly expressed as the experience we have of time today, within which our relationships with ICTs are key. We will then look at the perhaps unique crisis that, depending on various factors, is either happening or imminently ahead of us; that of the environment, and its effect on our sense of time and the future.

4.02. Hartmut Rosa and Social Acceleration

Referred to in many contemporary works on time and society (Tomlinson, 2007; Sharma, 2014a; Wajcman, 2015; Haider, Johansson and Hammarfelt, 2022) is Hartmut Rosa’s Social Acceleration – A New Theory for Modernity (Rosa, 2015), originally published in German in 2005. Rosa’s thesis stipulates modernisation as “a multileveled process in time“ that also heralds “a structural (and culturally highly significant) transformation of time structures and horizons themselves” (Rosa, 2015, p. 4). He investigates a break or fracture between a “classical age of modernity” (put crudely; that of industrialisation) and our more recent and contemporary “late or postmodernity” (Rosa, 2015, p. 4) in which an increasing acceleration both real (in processes, demands, exchange, and expectancies) and presumed (in our imaginaries of history’s trajectory, societal progress, and personal becoming) produces an intensification of time and the temporal; a “frenetic standstill” (Rosa, 2015, p. 15) beyond the control of both individuals and contemporary institutions. Here we clamour to keep up with the pace of multilevel change and innovations that demand ongoing adaptation and synchronisation.
For the individual, time as it is experienced appears as a natural fact, a given (Rosa, 2015). However, “measurements of time, perceptions of time, and time horizons are highly culturally dependent and change with the social structure of societies” (Rosa, 2015, p. 5).

Rosa (2015) explores three levels of temporal mediation:

- The temporal perspective of one’s everyday life; routines and rhythms of daily rituals, of work and leisure, and how to go about these (everyday time)
- The temporal perspective of one’s lifetime; aims and wishes, possibilities, memories (biographical time)
- The temporal perspective of one’s epoch and generation; our age, ‘our time’, the generation one belongs to as it rises, peaks and diversifies, changes with new generations, and our world today as it has been across our lifetime (historical time)

The interplay of these temporal levels “determines the being-in-time of an actor” (Rosa, 2015, p. 8); the actor here being a citizen, and their activities.

Additional to these is a fourth level; that of sacred or holy time that can reconcile the dilemma of life’s finitude, weave meaning into a lifetime, and in so doing creates a higher time, which is also a timelessness. Rosa sees modernity’s acceleration as a secular substitute to this spiritual timelessness and the religious notion of eternity; within which a busy, ambitious and fulfilled life confronts time’s limitations, and only adds to the impetus to increase and intensify the pace of life (Rosa, 2015).

Alongside these levels in the personal experience of time are three dimensions to modernity’s speeding-up:

- Technical acceleration (the “progressive acceleration of transportation, communication and production”)
- The acceleration of social change (cultural values, lifestyles, work types and patterns, instability, and the cumulative effect of a shortening in the duration of the present,
e.g., today’s sense that one year ago seems like another age, and 2030—the commonly referred to earliest target date for effective net zero carbon emissions—seems an age away)

- The acceleration of the pace of life (which is both the perceived lack of time and the intensification of what time we do have)

(Rosa, 2015, p. 301).

Within these is the paradox whereby technical innovation intends to speed-up processes which should, in theory—and according to advertisers—free up time. However, the increasing rate of innovative technological change itself demands the continual need to update and keep up, re-equip, re-skill and so on, contributing to the accelerated pace of life. These accelerations also induce slowdowns and decelerations—e.g., adaptation times, but also as the traffic jam, loss of connectivity, general human fallibility, and today’s global Covid pandemic, to name but a few—that call for further attempts at acceleration in the name of progress (Rosa, 2015, p. 302).

Rosa’s concern centres on the increasing speed at which changes transpire (Rosa, 2015) and their consequences, which leads us to the questions of time, and our position, orientation, and agency in relation to it.

“Without treating the temporal dimension as a categorial and central consideration in social theory one cannot account for present-day changes in social practices, institutions, and self-relations in Western societies” (Rosa, 2015, p. 4).

### 4.03. From speed to immediacy

For John Tomlinson, acceleration “has set the cultural agenda of modernity” (Tomlinson, 2007, p. 2), and our experience as people in modern times defaults upon this sense of increasing speed.
“The experience of the ‘speed of life’ is of the rate at which things happen—or appear to happen—to us; the pace of change in our lives. ‘Life getting faster’ is therefore, most generally, the crowding of incident into our days and the demands this makes upon our resources of energy, time and the attribution of meaning” (Tomlinson, 2007, p.2).

Tomlinson discusses “sedentary speed”, which relates to our use of ICTs that, while often ‘mobile’ and themselves in motion (via our usage and their processes), make demands on our movement, such as long periods of desk-work, minding equipment, watching entertainment, gaming, etc. Additionally, they enable things we don’t or don’t have to do, such as not having to go to the shop to buy a certain product, as we can order it and have it delivered, perhaps the same or next day. In this manner, Tomlinson redirects the discussion of modernity’s speed to that of our contemporary’s condition of immediacy; ‘just-in-time’ supply and demand, short-termism, 24/7 rolling and ‘breaking’ news, the taking and disseminating of digital photographs, the online search engines’ overtake of the public library for information needs, the blurring of boundaries between work and ‘free time’, and so on (Tomlinson, 2007, pp. 72-73).

A particularly concerning aspect of this Tomlinson sees as the abandonment of ideas of wider progress that so fuelled what we saw Rosa define as classical modernity, and a public discourse that appears “to have largely abandoned the attempt to define long-term collective purpose” (Tomlinson, 2007, p. 73). We can find evidence for this short-termism in the struggle to galvanise collectively in the face of the accelerating climate crisis, or to put wellbeing and equality ahead of retreats to nationalisms; despite the urgency inherent in a restless and relentless cycle of news, social media and comment. Indeed, immediacy presupposes our preoccupation with this proximate media environment that, via connectivity and the ability to broadcast snapshots of our lives and opinions at any and every time, we may feel sure we have a stake in. This complicates both the idea of a ‘bigger picture’ and the small scale of an individual life, as it does the sense of time and trajectory in the narratives we might attach or be attached to.
Unlike modernism with its mechanical speed, ‘heavy’ industry and then-societal narratives of progress and emancipation, the condition of immediacy – despite its signature and ubiquitous new technologies that, while housed in hardware appear equally if not more so as software – “lacks such a compelling narrative” (Tomlinson, 2007, pp. 150). Fixity and permanence – whether present or being built towards – are superseded by mobility, change, fluidity and transience, and the desire or need to be flexible (Tomlinson, 2007, p. 78). Mobility, but with what direction of movement? Socially interconnected, but to what societal goal?

While immediacy has many enticements, such as instantaneous communications, plurality of information, options, entertainments and gratifications, it deducts or “conjures away” from speed the “concerted effort” involved in progress-led ideas of the good life to be had by an individual or society (Tomlinson, 2007, p. 80).

As we can see, the condition of immediacy has strong implications for our perception(s) of time and the temporal today, and we might consider this picture of both relentless interconnected activity and lack of direction or slowness of progress in terms of our everyday lives, chiming as it does with Rosa’s “frenetic standstill”. And we might also contemplate to what degree our ubiquitous ICTs do or don’t influence this state, and our experience of the time in and to our lives.

4.04. Luciano Floridi and the Infosphere

While the work of Luciano Floridi does not directly explore time and the temporal, his focus on information and the phenomena of an ICT-based and reliant environment is particularly useful in the present research, as it lays out an authentic and tangible set of interconnected concepts and scenarios specific to the world today, giving us clear ground upon which to consider the experience of contemporary time.

Floridi’s infosphere, rather than another term for cyberspace (i.e., a purely digital / virtual environment) or indeed ‘Information Society’ (which essentially concerns human societies)
(Bawden and Robinson, 2012), is analogous with reality itself once we accept the idea that “what is real is informational and what is informational is real” (Floridi, 2016, p. 41). That reality can be considered informational comes via the acknowledgement that everyday life is utterly dominated by—and in large part now utterly dependent upon—ICTs; from our personal devices and their apps to any new ‘smart’ technology from fridges TVs to cars, the card readers we use rather than cash, the ID card tap-ins to access our workplaces, to societal infrastructure and logistics, the delivery of services and the work of science, and the access to much entertainment, cultural work and content. In addition, the use of all these everyday networked technologies in turn creates vast swathes of informational data for analysing that use.

“The most obvious way in which ICTs are transforming the world into an infosphere concerns the transition from analogue to digital and then the ever-increasing growth of the informational spaces within which we spend more and more of our time” (Floridi, 2016, p. 41).

Informational spaces might most obviously include meetings, physical libraries, events, to interconnected social media environments, online work video calls and ‘hang-outs’. Floridi would draw our attention to the fact that the binary here (between analogue/physical and digital/virtual) is essentially irrelevant today, as our physical libraries ‘contain’ or rather provide access to e-books and other digital resources (that in many cases now outnumber the library’s physical provision) and advertise themselves on social media and other online forums, meetings tend to incorporate devices and information accessed via them, events are filmed and livestreamed by both organisers and audience, and so on.

However, even sitting alone and still is to be within an informational space; what surrounds you, how cold or warm do you feel, are there sounds, and of course what time of day is it, what sense of time are you experiencing as you think, feel and breath. The interconnected, ICT world and its pluralities enables us to consider this viewing upon—and ongoing reading of—all things, involving and absorbing in the informational sense; a lived reality itself. And so we live Onlife, which is, again, not to say ‘plugged-in’ a la cyberspace, but rather ICT-enabled
and obliged as we go about our daily lives within the digital and analogue mix that is life in the infosphere (Floridi, 2016).

Alongside the benefits of our new technologies, from community communications, the common and immediate availability of information, to education, science, and economic advantages, Floridi states that the development of ICTs has “outpaced our understanding of their conceptual nature and implications, while raising problems whose complexity and global dimensions are rapidly expanding, evolving, and becoming increasingly serious” (Floridi, 2010, p. 7). A subtext perhaps so obvious as to go unnoticed within this statement is that of time, and the ability of individuals and societies to enjoy the benefits of our ICTs and the infosphere we find ourselves inhabiting today at a pace that we as users, rather than that of innovative technological change, can live and work positively with.

The infosphere increasingly synchronises (temporally) as it delocalises (spatially) (Floridi, 2014, p. 48). We understand that space ‘collapses’ via ICTs with instantaneous global reach and data transfer. But due to the contextual nature of time as local (Castells, 2010) we comprehend that time is also radically altered in the infosphere.

Digital ICTs are time-based technologies that update and calibrate according to time frames we might compare with the processes of the brain, and are perhaps similarly elusive to conscious apprehension despite us living by them. This leads us to contemplate the effects of the ICT-based society, on our sense and experience of time, and ask if such should and could supplement Floridi’s philosophy of information and the desired ethical direction of the infosphere as it matures.

In terms of our epoch, Floridi considers our times today to be Hyperhistorical (Floridi, 2010), and this very term gives a sense of the social and technological climate that, while perhaps not waking up to in an individual way each morning, we perceive ourselves to be living within when we express the sense that life gets faster and time only speeds up, that so much appears to be happening at the same time or in a relentless stream of events, that we can access so much information so easily. Or we might subconsciously acknowledge this as we wake up our smartphone (that has probably been on –refreshing in the ‘background’–
the whole time anyway) first thing, open apps and login to various platforms that now are the vehicle for much of our daily activities.

Preceding the Hyperhistorical, *Prehistory* regards the age prior to widespread records and recording systems, and *Historical* societies occur once these begin to be created, as history *is* our records of events (Floridi, 2010, p. 3). These historical systems include ‘old’ technologies such as storytelling, artifacts, writing instruments and carriers, the form of the book, the printing press, and on to television and radio. Hyperhistorical societies and environments are those “where ICTs and their data processing capabilities are the necessary condition for the maintenance and further development of societal welfare, personal well-being, as well as intellectual flourishing” (Floridi, 2017, p. 2).

In this, our dependency on the ICT infrastructure (in both hardware and software) of our world today is surely clear, and to critically consider this demands the bypass of any aspirant or idyllic turning away from our interconnected technologies, for “we can no longer unplug our world from ICTs without turning it off” (Floridi, 2017, p. 3).

Floridi’s infosphere can also be described as a new form of time-based society, intensified along the lines of Rosa’s acceleration and Tomlinson’s immediacy, that has met both seasonal and industrial cycles with the escalating and simultaneous times of digital information transfer and instantaneous communications. The infosphere, as a concept of informational reality, includes all of these durations and temporalities. Floridi’s theories give definition to the unique experience of contemporary, ICT-based societies today, which is to say; our times. And the times we live in are populated by our experiences of – and activities in– time today.

4.05. Fast Capitalism

Of course, the *infosphere*, and the continual technological invention inherent to it, does not exist outside of a social and economic system whose temporal attributes and pace have profound effect on people. Capitalism –like modernity and surely in tandem with it– also
occurs in stages, exhibiting changes that find us attempting to update the term to better reflect its current temperament(s) and our times in general, particularly in the West and Westernised democracies.

Tomlinson invokes, via the title of an online journal, ‘fast capitalism’; this term conveying the “general sense of an increase in the intensity, energy and ruthlessness of the global capitalist order overall (Tomlinson, 2007, p. 81). Fast capitalism is enabled by the immediacy of networked ICTs which can not only convey instantaneous communications but also financial transactions and market intelligence, inducing ever more hyperactivity, and making “the whole business of this sort of high-risk, high-gain financial speculation possible” (Tomlinson, 2007, p. 83). This ramping-up introduces randomness and unpredictability into economic systems and takes capitalism beyond traditional modes of mediation and control via governments, corporations and investors, and previous conventions of the capitalist market itself (Tomlinson, 2007; Castells, 2010a). The knock-on effects for many in their everyday lives is an increased pace of change in work practices and the constant need (at all levels) to manage change, making a more organic, logical continuum in work-narratives unsustainable if not impossible (Tomlinson, 2007).

None of this is to install a “compelling narrative” on this contemporary stage of capitalism. Where previously proponents could call upon certain of the societal progressions of classical modernity and, post war, the American-led affluence and aspirational drive that fuelled the late twentieth century, such imperatives appear lacking today beyond the continual pull to make progress in one’s life, usually in terms of a financial security that is challenged by tendencies opposite to traditional working patterns, long term jobs with a single employer, property prices and the fast-moving uncertainty that we are coming to accept as indicative of our times. Such times obligate us to speed up in attempts to keep- or catch-up, this occurring all the while we feel compelled to both do more with –and in– the time we have, and to use time efficiently and not waste it; that this way lies fulfilment (Rosa 2015; Wajcman, 2015; Sutherland, 2019).

However, the modern notion of individual freedom crashes against the contemporary imperative to coordinate and align, keep up and upskill, in the face of uncertainty and
acceleration, the combined effect of which can cause “pathologies of acceleration” (Rosa, 2015, p. 316).

Thomas Sutherland argues that contemporary capitalism’s acceleration has itself become the progress; a kind of moral duty that overtakes ideas of security and the better life, and is so intertwined with the acceleration of technological development and processes:

“[…] incessant technological invention [...] places the very idea of the good life, the flourishing or prosperous human life […], in thrall to a cyclical logic of perpetual development and obsolescence that ultimately supplants the former idea in its entirety” (Sutherland, 2019, p. 35).

We find many of the anxieties enmeshed within acceleration and immediacy in Sutherland’s writing, perhaps most clearly and damningly set out here:

“The interactions that so many of us face on a daily basis with a manifold of interconnected media devices and platforms, and the sheer onslaught of data, the never-ending bombardment of new content, and the constant regeneration of information targeted at us through such media inevitably have a profound effect upon not only our temporal experience of these interactions, but also upon our time-consciousness more generally. These incessant data streams, furnishing the image of a world moving at an overwhelming, disorienting tempo—the sublimity of an acceleration that seems to outpace all sensibility, and thus all empirical givenness—do not offer a future figured in terms of the (perpetually deferred) fulfilment of a higher good, but instead merely hold out the phantasmic prospect of synchronising one’s inner sense of time with this gathering momentum, which exceeds the boundaries of possible experience. There is no sense of progress here, no hope for the future; on the contrary, it is the feeling of being perpetually left behind, of chasing a rapidly elapsing time” (Sutherland, 2019, p. 38).
Indeed, these comments reflect much of the research concerns in the present thesis. However, to temper this diagnosis, we might again deploy Tomlinson in his keenness to stress that “life under capitalism is not the whole of cultural experience” (Tomlinson, 2007, p. 86), and there are options, which will appear as we proceed and be further explored in the discussions.

4.06. Democracy, deliberation, and their conditions

Additionally, and in hand with contemporary capitalism is our experience of democracy, and the challenges faced by this ostensibly natural political system in the West in a climate of fast capitalism, immediacy, and the demands and expectations that come with ICT-enabled transaction (instantaneous call and response, if you will); an infosphere that elected political leaders and processes do not—and perhaps should not—fully control.

Sarah Sharma argues that media theorists tend to consider acceleration as antithetical to democracy, rather than exploring not only the liberating aspects of speed-up such as an increase in the plurality of political and politicised voices, but also the complex and plural nature of actual lived time (Sharma, 2014a, p. 6).

Democracy traditionally requires a time which should be unobstructed in order to include contemplation, deliberation, and a certain patience (Agacinski, 2003). However, Sharma contends that this is a bourgeois demand and expectation that, ever since ancient times and the Greek Agora (the public space of assembly), has relied on the labour—and therefore the time—of others; service staff (and in ancient times; slaves), and women (who often are still in the position of maintaining domestic work and childcare, as we shall explore later), so as to prioritise the occupation of a minority of free citizens (Sharma, 2013), and that this can be seen as power chronography (Sharma, 2014a).

However, the affordances of ICTs and their baking-in as societal givens lead publics fed on immediacy to demand immediate change and perhaps turn away or to extremes when democratic processes do not deliver it. At the same time, if we protest the uncertainty and
ravages of fast capitalism, are we inadvertently calling upon normative values of a supposed secure time whose makeup sustained long-term social (and temporal) inequalities?

“The concern over speedup is less about time than it is about space. The speedup narrative is based in a critique of a newly unruly tempo that threatens the spatial virtues of democracy” (Sharma, 2014a, p. 137).

For Sharma, time is missing from discussions –indeed ideals– of democracy, as opportunities towards the space to meet and deliberate (whether the physical assembly, or the online campaign that surely requires some element of research) are not necessarily met by time opportunities among the multitude where one’s temporal affordance and value can greatly differ from another’s (Sharma, 2014a, p. 22).

### 4.07. Recalibration

Sharma questions a starting point whereby in diagnosing the present we assume and agree that “we are all living in a 24/7, always on and on-the-go world” (Sharma, 2014a, pp. 5-6), instead calling for a comprehension of the unevenness and relational, entangled nature of lived time that takes us beyond individual preoccupations with our sense of the lack of time (Sharma, 2019, pp. 214-215). We can in fact view this as a natural consequence of that generic, more-or-less 24/7 ever-on world that leads us to be living by a set of temporalities unique to us and our often-multiple occupations and responsibilities; synchronising and desynchronising, entangling and disentangling, as our days unfold in varying interactions and exchanges with one another. Within this, recalibration becomes key to our sustainment:

“Today, it is the expectation of all good subjects under contemporary capitalism to recalibrate, to find ways to keep up. [...] to recalibrate is to learn how to deal with time, be on top of one’s time” (Sharma, 2011, p. 442).
For Sharma, ‘free time’ is a blind alley, for, as with democratic processes, much activity within one’s free time rides upon the unfree time of someone else; leisure activities such as bars, cafes and restaurants require service workers, as do shops, event spaces, museums, entertainment providers, delivery services, public transport, and so on. In this sense, we can only really consider society via entanglement with and among each other (CBC, 2021, 00.23.30), and so, among each other’s time(s).

Sharma differentiates temporalities from time; rather they are these recalibrations, akin to continually breaking and resetting clocks, as they negotiate “a larger temporal order” (Sharma, 2014a, p. 8). Her work illuminates “an uneven multiplicity of temporalities that is complicated by labor arrangements, cultural practices, technological environments, and social spaces that respond to this so-called globalized, speedy world” (Sharma, 2014a, p. 9).

Once we perceive and acknowledge the temporal, it is “discernible everywhere” (Sharma, 2014a, p. 138). Thinking in on ongoing manner about time and the alternate temporalities of others involves contemplating not only one’s own idiosyncratic time experience but also possible privilege in relation to that of others, which can be challenging (Sharma, 2019, p. 210). However, “time allows for an empathetic understanding of social difference because everyone knows that time is finite” (Sharma, 2011, p. 444).

4.08. Work conditions, gender conditions

Time anxieties today can often be set in comparison to normative and supposedly reassuring concepts of yesterday, for example the Monday to Friday, 9am-5pm working week, and the earned leisure time of evenings and weekends, where time is or should be at one’s discretion. However, this is to avoid the fact that this most basic of schedules is centred on the working man’s experience of time, and not that of women for whom traditional domestic work involved house chores and familial care roles that did not (and do not) stop in the evenings or during weekends.
For Sharma, the 9-5’s “hold on our temporal imaginaries is astounding. [It] is the foundation upon which alternative temporalities resist, revolt, or recalibrate” (Sharma, 2014a, p. 107).

While their paid employment has increased, women still tend to do most of the domestic work within partnerships with men, despite men’s contributions in the home increasing (Negrey, 2012; Wajcman, 2015) and the general trend in more flexible working patterns potentially aiding towards better sharing of household tasks (Castells, 2010a, p. 473). Additionally, women’s employment roles are more likely to be precarious, lower-paid, and fitted around the demands of unpaid domestic work. Women also experience leisure time differently to men, tending to combine leisure with domestic work (say, watching tv whilst doing chores, or calling friends and family whilst occupying children), whereas the leisure activities of men tend to be more independent of the home (or at least its chores) and likelier of “high quality” (Wajcman, 2015, p. 81). Stereotypes of multi-tasking and women’s greater ability to do so surely stem from this inherent nature to their temporal experience, which Wajcman calls temporal density (Wajcman, 2015, p. 74). Recalibration here must occur between and among ongoing tasks, chores, care responsibilities, leisure activities, and their combination.

“Women’s temporal empowerment was (and still is, most would argue) based on their ability to recalibrate to the normalized structures of white male patriarchal capitalist time” (Sharma, 2014a, p. 106).

However, Sharma cautions against discarding gains made by workers and society in general in the creation of the 9-5, even while this more ‘classical modern’ schedule should not be further cemented as either the standard or the best we can get (Sharma, 2014a, p. 107). The 9-5 was fought for by social and labour movements, and today is in fact far from the norm, being rather one of many possible working patterns, and this plurality impacts our abilities to conduct social lives with our friends and families who previously would have essentially shared common and predictable schedules (Wajcman, 2015, p. 75).

Negrey makes the point that democracy’s Conservatives often claim to defend family values while promoting market activity and influence that erodes if not destroys those values.
(Negrey, 2012, p. 191). This can be seen in current trends where both parents work in paid employment (rather than the traditional, male ‘breadwinner’), which in turn demands, if able to afford it, the outsourcing—and so, alternate management—of certain aspect of childcare and domestic work due to new time constraints; or, if unable to afford it, additional tasks in what appears to be less time.

While work hours in the west may have declined from those in industrial times, the demand now is for flexibility, and to some extent self-management (Castells, 2010a, p. 468), and the boundary between work time and other time is porous and often unclear, creating new time-based tensions and dilemmas within the intensification of our time (Wajcman, 2015). Within employment, linear working is often replaced with fragmentary and layered sets of tasks to be completed according to variable timings, and undertaken both continuously and discontinuously (Rubin, 2007; Negrey, 2012).

Wajcman argues that fragmentation of this kind is itself not new and unique to the 21st century, however the extent of mediated ICT usage as normal and essential to work today is, as are the new options for when and how to do work tasks if involving ICTs, with pros and cons for employees. Rather than causing an oppressive regime of surveilled work practices, the reality is more complex, as employees adapt, vary activities, and test boundaries within their ICT use, with its obligations and opportunities (Wajcman, 2015).

What is clear is that newly intensified—and temporally dense—work practices, with a fragmentation of activities specific to ICTs, give the sense of rush and harried-ness to much employment today, and that workers are regularly obliged to update skills to keep up with technological developments at little or no notice or training (Rosa, 2015; Wajcman, 2015). Certain tasks are sped up by advanced ICT processes, others are only reoriented according to the new technology superseding a previous process, most stack and layer (Rubin, 2007), and all may be subject to technical and connectivity issues whereby work is delayed or halted until able to proceed again. And we are additionally adding many tasks that collect and correlate data on work-related activities and issues.
Again, Wajcman contends that these contemporary adaptation demands and obligations come from management practices enabled by technological advancements, rather than the ICTs solely (Wajcman, 2015, p. 95). Additionally, personal devices seep into our work environments and practices, meaning that our workday may contains many moments of a more social and leisurely aspect (Görland, 2019; Prommer, 2019), from taking a moment to check social media and instant messages, or the day’s news, to bidding on online auctions, and so on; all of which layer and alter the tempo of our experience, even if only momentarily.

“[T]he relationship between technology, pace, and connection is much more rich and complex than previous studies have shown. ICTs actually have an ambiguous relationship to the pace of work flow, both impeding and propelling, depending on a variety of local human / machine contingencies. [...] Shifting between synchronous and asynchronous modalities, people are developing multidimensional time practices, creating new rhythms of work” (Wajcman, 2015, p. 103).

4.09. The Time Pressure Paradox

With acceleration and its knock-on decelerations, immediacy’s attempts to synchronise activities and desires to ever shorter process and waiting times (even as systems intermittently fail), an entangled unevenness of time when viewed via a plurality of work schedules, regimes and temporal affordances; we find ourselves in what Wajcman terms the “time pressure paradox” (Wajcman, 2015, p. 61). As can be surmised, this is a critical approach to our common ideas upon the pace of our everyday lives in contemporary society; the world as it seems today.

Where previously idleness and leisure were hallmarks of aristocracy, today busyness in both work and ‘free time’ denotes high status, worthiness, and making the most of contemporary opportunities (Wajcman, 2015), whereas large quantities of free time appear as inertia, if not laziness; the preserve of the un- or under-employed. Indeed, Wajcman’s study confirms
the sense that there is “an increasing polarization of working time, between those who
work very long hours and others who work few or no hours” (Wajcman, 2015, p. 65).
This cult of the busy does find opposition and alternatives, and some of these we will
explore in the discussion section.

While the middle class tend to prearrange meetings, and the working class use common
public space and a culture of turning up (Wajcman, 2015, p. 76), both these cultural
tendencies are impacted when work schedules become variable and domestic work is
affected. Harried-ness “is a consequence of the difficulty of coordinating practices in time
and space”, e.g.; in the mundane example of the traditional family meal, we require not only
the cook to be in place to prepare the food, but also for those for whom they cook to be
there in the same moment and with the time to devote to the meal (Wajcman, 2015, p. 76).

“The erosion of institutionally fixed routines and the fragmentation of daily
activities mean that more negotiations, more decisions, and more effort are
required to perform the necessities of daily life. For a significant proportion of
people, planning to meet people becomes a major preoccupation” (Wajcman,
2015, p. 76).

So, it is as much a pressure of synchronisation and time alienation (from others) as it is
actual time shortage(s). How can social and collective activity –indeed a real sense of the
collective beyond a mass of harried individuals and family units– take place in such a
climate?

“Time scarcity may result not so much from a shortage of time but because of
the increasing complexity of scheduling personal, domestic, and work activities”
(Wajcman, 2015, p. 82).
4.10. Summary so far

We have so far considered angles on time in modern and contemporary society that both clarify and complicate any overview. We have explored modernity as a process of increasing acceleration, a present-day condition of immediacy, and an all-encompassing, ICT-enabled informational environment – the infosphere – in which our daily lives occur and enact. We have integrated a reading of contemporary capitalism and democratic processes, followed by considerations of work-related time, gender variations in paid and unpaid labour, and the notion of a paradox to our experience of time today in general. We understand that time as lived is not uniform, despite a prevailing sense that one’s own (local) experience of it is normal and parallels an overarching, universal temporality.

4.11. Information and Communication Technologies

The phenomena of increasing societal acceleration in an intensifying, informational reality raises the need to further consider these concepts from the perspective of day-to-day usage of our now omnipresent ICTs.

To consciously consider reality as informational is a shift that risks an automatic anxiety of exhaustion at the idea of having to be absorbing and processing at all times, and the phenomena of information overload, especially today via our ICT-led, information-saturated lives, is commonly understood (Bawden and Robinson, 2012, p. 243).

In the present study a key concern is upon our ability to best make use of this unique and unprecedented time-based, informational environment, and situate our lives in a positive experience of time that is to a greater degree on our terms. So, from here we will begin an exploration of the role and relationship of ICT devices in our everyday lives, and to what degrees they aid and hinder, simplify and complicate our activities.
4.12. The times of new media

“There are no media without time – and nowadays time without media is decreasing” (Hartmann et al, 2019, pp. 1).

As with time pressure, paradox is perhaps inherent in an electronic media and ICT-dominated world, indeed the ICTs themselves. This can initially be evidenced by their promise to save time, and the increasing amount of time they come to occupy; more and more ‘media time’, which is to say, “time for the media” (Scannell, 2019, p. 346), this in turn, and via ever more interactive media, becoming ‘mediated time’ (Hartman et al, 2019), whereby increasing amounts of time are experienced with and via time-based media devices and applications; ICTs. We are in a realm of interactive interfaces, software, coding, artificial intelligence, usage monitoring and data collection, and the whole social web of intercommunications with other people.

Despite acceleration, immediacy, and the instantaneous, interconnected and networked nature of our ICTs combining to convey the sense of a predominant and fast tempo, Wajcman states that ICT’s “make possible new and multiple temporalities” (Wajcman, 2015, p. 9), and this is agreed upon in the literature (Keightley, 2012; Reading, 2012; Hartmann et al, 2019).

While those multiple temporalities are ours to experience, whether by choice or obligation (and as we have seen via Sharma, certainly moving between these two poles), ICTs are able to synchronise, and “are characterised by temporal ubiquity, which is permanently being online” (Görland, 2019, p. 321).

This might suggest a background, uniform time that our ICTs operate in accordance with, but again, the reality is not so simple. Anna Reading attempts to address this, customising a global time with her concept of Globital time, which “combines ‘global’ and ‘bit’ to suggest the dynamic enmeshing or rather defragging of globalisation with digitisation” (Reading, 2012, p. 145). Here we are discussing persistent temporal activity; “continual adjustments and translations” (Reading, 2012, p. 161) as our ICTs calibrate and recalibrate according to
what and where on the network(s) they are inter-operating with, making the necessary
alignments in combinations of hardware and software with their own varying temporal
processes.

We might consider how this echoes Sharma’s human subjects and their –our– ongoing
calibrating and recalibration requirements (according to body-clocks and organic rhythms as
they exist with work, task, and social schedules); essential to our attempts to govern what
time affordances and obligations we have, among networks of others and their own
temporalities.

ICTs are created to speak to each other and align, being dependent upon online, networked
connectivity; this second only to source electricity and battery power. Considering this can
give us a sense of how our devices, not only mobile smartphones but also desktop
computers at work, appliances in the home, and so on, are busy and operating, as it were,
beyond themselves. We –via ICTs– may be newly mobile, but this mobility is in no way
independent as formerly understood; rather interdependent; dependent on an
entanglement of mobilities and mobility affordances.

So perhaps, we grow in recognition of this contemporary mobility, and how much of our
lives are being lived in both the online and the in-betweenness of things (Keightley, 2019);
en route from one place to another, during intervals between tasks, and waiting times
which previously may have been sites of boredom. Indeed, the very state of boredom can
be –and is now– populated by the distractions, attractions, and preoccupying affordances of
our mobile devices; with waiting and potentially bored times newly engaged and meaningful
(Görland, 2019, p. 323).

However, this application upon what would have previously been empty or lagging time can
have the effect of speeding that time up (Görland, 2019, p. 335). We often feel obliged to
answer instant messages instantly, to comment on social media stories quickly, before the
attention moves on and the –that– moment is lost. This might feel relaxed and enjoyable or
rushed and harried (Prommer, 2019). Or a combination of both, where excitement and
anxiety compound. It might draw us out of our immediate circumstances, to full
engagement, or a partial attention between the activities of the screen and those in our environmental vicinity (Prommer, 2019).

Similarly, as more and more work-related tasks can be done via online processes and shared drives, we can answer something that comes up outside our contracted hours, such as a message received on the way home from work, if not at home itself, as our personal devices become more and more enmeshed; used to confirm identities on work devices, and as a quicker means to reach colleagues. The boundaries are permeable. It is no feat to envision a moment on the commute home, messaging a family member to check whether something needs to be bought for dinner, or ordering takeaway, while answering an urgent work email that interrupts social media scrolling, popping back into a work account to locate something to forward, reminded of an earlier news story, before checking a connecting service is running on time, and so on, all on the same ICT device. This is what is meant by the intensifying moment, plural temporalities, and the sense of harried time and the rush to tick things off such as the ‘stack’ of four or five things in the scenario above, with the entangled urgency of social combinations consisting of others waiting on our replies as we wait on theirs, clocks of all kinds (and tempos) ticking.

While on the one hand this is inherently fragmented and messy, our ICTs and media devices are here creating shared presents, and in this way offer “the basis for the synchronization of different temporalities” (Sebald, 2020, p. 1000), perhaps more in the networked moment(s) than those physical.

So, while ICTs and media are promoted as saving time, they come to take time as we invariably give them more and more time, and more and more of our tasks and pastimes are organised and undertaken via these technologies. This was true prior to the Covid 19 pandemic, yet since then periods of social restrictions have pushed many offline activities online, requiring time and energy to reform these activities for the screen; only intensifying further our online, screen-based activities, while also hitting issues of unequal access to ICT hardware and the continual, good internet signal required (Treré et al, 2020).
While, as Wajcman argues, modern media may not be solely responsible for causing time pressure, Görland counters that they certainly do not ease it (Görland, 2019, p. 325).

### 4.13. The experience of multiple, media-infused temporalities

In the above section, we have outlined factors concerning ICTs and our use of them, and begun to explore their effect on us and so our time. We will now look further at the multiple temporalities they afford us, whereby a plurality of times and tempos can comingle and layer in a single moment or period of time and activity.

As stated previously, every form of communication is a temporal process, and in coming to exist among ICTs our relationship with time is heightened, along time-based, informational lines, as we inscribe them and they come to inscribe upon us. And as we live far less according to plan and far more according to action in the intensified present (Rosa, 2015), we negotiate both the increasingly full moment and the anticipated, imminent moment of the responses within our networked communications exchanges and processes (Sebald, 2020; Haider and Sundin, 2021).

Added to this, we are often using ICTs and media simultaneously in combinations. This challenges linearity, which was the nature of previous media such as broadcast radio and television (Keightley, 2012), without today’s ubiquitous ‘on-demand’ means of choosing the time to watch or listen to something, as well as more traditional cultural format experiences such as watching a movie from beginning to end at the time it is transmitted.

“Because of the omission of linearity there is new *freedom* in media use, the resulting always-on culture enables media use at every time” (Görland, 2019, p. 325).

Prommer calls this technologically-enabled and use-influenced behaviour *polychronicity*;
“in that the different activities not only happen simultaneously but have different temporalities and temporal demands which all occur in the same situation” (Prommer, 2019, p. 300).

Prommer discusses doing media, which is to say our everyday activities with ICTs at the local and global level, as users roaming both physically and online and for whom this makes a contemporary sense. There is “a polychronic flow of use” (Prommer, 2019, p. 302) which, despite our associations with flow (such as fluid, free and organic movement), is as much a thing of interruptions and disruptions as anything else, as we know by the impossibility to predict what will appear in our social media timelines and rolling news feeds, and their effect on us as and when we are exposed and interact with these.

Prommer goes even further when she writes that:

“Doing media in a mediatised world means you cannot NOT do media; even if you avoid media or social media, you have to actively avoid media and actively not do media, so therefore, you still do media” (Prommer, 2019, p. 303).

This can also be seen in what we might view as the anti-social side of media use in public spaces; overheard phone conversations, games and videos played on devices without headphones, or simply the reflection of others’ often very bright device screens in the bus or train window when you look out of it. We are exposed to media at almost all times and scenarios today (and this is without considering card-readers, smart appliances of all kinds, etc). How can we not—to some degree—be doing media?

Even as media use and doing media is inherently social and “socially embedded” (Prommer, 2019, p. 303), it also has this anti-social, perhaps even un-doing dimension. The obliviousness users can sometimes have in their surroundings to the noise, the light from screens, sudden audio outburst of notifications or videos etc, even the restlessness people often exhibit as they busy themselves on their devices can have knock-on effects for others in the vicinity. We might say someone else’s time and temporal moment here is influenced, even invaded, undone, or rerouted. These are common experiences today.
As we can see, time and the temporal, in ICT-enabled mediated time, is operating and operated upon in varieties of— to use Sharma’s term—entangled ways that offer no easy reading or straightforward means of definition. What we might think of as ‘one’s own time’ is, in many ways, via intermediated plural temporalities and socially inclusive, co-dependent and co-created among the activities of others (Keightley, 2019).

ICTs are intended to be permanently online, operating at speed and instantaneity, and our lives are now utterly enmeshed with them; afforded ranges of temporal and inter-social experience even as we perceive the overarching accelerated times. Keightley’s “vertiginous togetherness” today is an intermediated time ripe with both “danger and possibility in a very real sense” (Keightley, 2012, pp. 2). However, she seeks to explore more positive outlooks than we might default to in our sense of harried and hurried-ness:

“The diverse times on offer [...] and the ways in which they intertwine to produce richly textured temporal ecologies seem to be routinely overlooked when we are dazzled by the ever-increasing speeds of communication” (Keightley, 2012, pp. 4).

Keightley constrasts the bleaker claims of Rosa when she explores ICTs as “temporal resources for the construction of deeply felt social identities that are negotiated in the between-times of the temporal frameworks” (Keightley, 2019, p. 212). A number of concepts are raised. “Zones of intermediacy” are layered combinations of media-accompanied and enhanced times, and the navigation of these, which produce temporal meaning. And a “generous time” occurs in a “dilated present” when a plurality of temporal experiences mesh together (Keightley, 2012, pp. 212).

“[E]veryday media use [can] create alternative temporal zones in otherwise conservative arenas of temporal regulation for intimate and imaginative engagements with the time of others, in time as it is lived” (Keightley, 2021, pp. 217).
Reading references Michael Serres, critiquing our recent ideas of the network as holding to ‘here and there’ as if separate temporal aspects, calling for us to “instead think in terms of ‘aqueous or airy volubility’” (Reading, 2012, pp. 150); that combining different elements of time cause “incitements” which fold us back and forth within and upon time(s). Reading states that analogue-industrial clock time could be avoided, wearable watch time could be removed, whereas today’s Globital time is constantly being presented and experienced “in the spaces of incitement, of interference between the axes of the assemblages of time” (Reading, 2012, pp. 161).

These are complex ideas to relate to one’s life and experience of time, especially if we are pressured and hurried simply to get on with what needs to be done in the intensified everyday. In mediated moments of plural temporalities combining, mixing, blending and curdling, perhaps our actions and the sensations and feelings they bring about compost towards an increasing conscious awareness of such ideas in everyday forms; we can feel stressed and harried, or stimulated in a more relaxed and fluid manner; in ICT and media use. An always-on nature surely includes a re- and de-calibrating stimulation that is ever-varying parts anxiety, excitement, deflation, inflation, purpose, between-ness.

“[…] in contemporary social life, our experience of time is one which is produced not simply in our uses and interactions with media, but also in our traversal of their multiple temporal affordances in situ. This results in an intermediate time […] in which the various temporalities of media do not determine our temporal experience but are fundamental elements of its composition. In this sense, mediated time is not simply technological, characterised by the rate at which data are transmitted from one point to another, but is also social and cultural. The practices of media use, which are part of continuous histories of communication, enfold temporal rhythms and expectations into our mediated experience. At the same time, the social, relational nature of the communication and representational practices, which are undertaken via mediated technologies, contribute further to our temporal experience. […] It is therefore in the active navigation of these mediated times through which temporal experience comes
into being, producing diverse and plural temporalities” (Keightley, 2019, pp. 173-174).

Wajcman agrees that the contemporary environment is dominated by technology and connectivity, transforming “the pace and scope of human interaction”, and giving “new meanings to temporality and reconfiguring our time practices” (Wajcman, 2015, pp. 10-11). However, she refutes the blame we might ascribe to new technologies for our struggles with time, pointing out that the demands they appear to make “are built into our devices by all-too-human schemes and desires” (Wajcman, 2015, p. 3). Additionally, user experiences are “riddled with contradiction” (Wajcman, 2015, p. 107); a device such as the smartphone’s own multi-function, multi-platform operability induces our sense of contradiction, as we use it for so many, variable things.


The driver of ICT advancement is technological innovation, itself associated with modernity, progress, and movement into the future. Innovation and invention are tied to efficiency, which has tended to mean better or more economical uses of time (Wajcman, 2015, p. 179).

As introduced earlier, innovation today is also paradoxical, and problematic; wedded to a now relentless cycle of invention, mass production, obsolescence, and supersedence that is as disruptive and wasteful as it may be useful and efficient or, indeed, genuinely innovative.

“[W]e have been all too ready to conflate speed of technical innovation with inventiveness. On the contrary, rapid technological change can actually be conservative, maintaining or solidifying existing social arrangements. Its very speed may occur in order to block and stifle the possibility of alternative trajectories” (Wajcman, 2015, p. 180).

Innovative new ICT technology, as we have seen, contributes to the intensification of our time, makes demands on us to update (from apps to whole systems), meaning time
dividends are or become negligible in practice. In addition, there is the barely comprehensible amount of pollution and physical garbage involved. Not only this, perhaps the products of contemporary innovation’s very deluge threaten our ability to make a real sense of the new reality and possibilities inherent to the technology, where the distance between the present and the future appears to compress (Nowotny, 2019, p.84).

For Floridi, what matters today is less the technological innovation and rather the governance of that innovation, and the infosphere itself, via digital ethics and moral evaluation (Florid, 2018b). Ideally, these are ‘soft’ ethics that:

“[…] anticipate and steer the ethical development of technological innovation. And we can do this by looking at what is actually feasible, privileging, within this, what is environmentally sustainable, then what is socially acceptable and then, ideally, choose what is socially preferable” (Floridi, 2018b, p. 6).

To address such things as the present and future climate crisis and fast capitalist processes, the demands of immediacy and convenience consumption cycles as we know them today surely cannot continue and have to change. As Wajcman suggests, this may require us to reconsider our ideas of what is innovative, how innovation occurs, and what we are aiming for with it. These are time issues; how we spend our time, and how we want to spend our time.

“Genuine inventiveness, then, can occur when the pace of technological change is slow, or in places and at times least expected” (Wajcman, 2015, p. 180).

Decelerations or other tempos to innovation are perfectly feasible in the ICT revolution, as “landing in the infosphere happens only once” (Floridi, 2018b, p. 2), which is to say the infosphere is not reliant on acceleration in perpetuity. The radical innovation has occurred and can now alter pace, allowing social preference to take precedence.
4.15. Time and the Environment

In what might appear a change of direction (though as the author will argue, is anything but), we will now turn our attention to the climate crisis, and its part in our temporal experience today. We will need to weave in two aspects; that of our polychronic, entangled lives in the mediated time of the infosphere, and that of temporalities relating to the environment and the climate crisis we have entered.

To begin, we might identify a key differential between the infosphere and the ‘Information Society’; an earlier, contested concept (Bawden and Robinson, 2012) focused on humanity’s information systems, the ‘knowledge economy’, and the earlier days of the internet. Indeed, in his *Theories of The Information Society*, Webster’s preoccupation in hindsight is less that of the concept or term Information Society than “the informatization of relationships” (Webster, 2014, p. 341). This, alongside the theory of “information ecologies” (Nardi and O’Day, 1999) and their drawing upon ecosystems as models for local networks that include not only humans and knowledge resources but also practices and values, leads us to Floridi’s contemporary infosphere, where the informational is in relationship to other informational entities; from humans to other species to documents, ICTs and artificial information, and in which—as a form or means of seeing reality itself—humans are not placed where we might presume ourselves to be. This is because the development of ICTs radically challenges “our conception of who we are and our ‘exceptional centrality’” (Floridi, 2017).

“We are not at the center of the infosphere. We are not standalone entities, but rather interconnected informational agents, sharing with other biological agents and smart artifacts a global environment ultimately made of information” (Floridi, 2017).

The infosphere provides a route to comprehend our own both accelerated and time-plural daily lives, at the same time it almost coerces us into taking on board a multitude of times and relational temporal experiences and coexistences in which we are entangled.
While Floridi admits the infosphere as it is laid out does not provide answers—or even concepts—to questions of environmental sustainability (Floridi, 2018b, p. 6), digital ethics and social preferability go some way in beginning to address this critical issue. However, the consideration of the infosphere as a project instinctively draws out questions and concerns toward the eco- or biosphere; the earth’s environment and its unique life-support systems so under stress from modern human industrial, extractive, and polluting activities.

Our sense of contemporary Western time as rushed and hurried, active, immediate and anticipatory (and ICT-dependent), meets the planetary reality of environmental systems, processes and phenomena, that we depend upon, built over millennia; “glacial time” (Lash and Urry, in; Castells, 2010b); a time we can only comprehend so much. Morton calls the environmental crisis a hyperobject, which is to say, something so vast and multi-dimensional that we cannot be expected to hold some true overview of it, but which presses upon our imaginations and anxieties. Glacial time qualifies as such, and other examples of hyperobjects include such things as the solar system, black holes, “the sum of all the whirring machinery of capitalism” (Morton, 2013, p. 1), and, inevitably, time in general and/or the plural. Hyperobjects “involve profoundly different temporalities than the human-scale ones we are used to” (Morton, 2013, p. 1).

We might consider Hyperobjects as hyper-informational; in that they often nag at us, and cause us to spend vast amounts of mental resources in trying to describe, explore and encapsulate them in research, the arts, conversations, and all manner of other meaningful, informational production. We see this now as humanity en masse—rather than only campaign groups, subcultures and other fringes—belatedly addresses the climate crisis in our cultural output.

Glacial time is the backdrop for the urgency in environmental movements and activism. We can view the now common ‘No Planet B’ placard slogan as aimed at somewhat hubristic dreams of a habitable Mars, as if the hyperobject that is the red planet could be terraformed in time to save us from our excesses here on Earth. For Castells, time, or our control over it, is at stake in our ICT-dependent societies today, and “the environmental
movement is probably the most important actor in projecting a new, revolutionary temporality” (Castells, 2010b, p. 182).

We are surely all familiar now with impending and unfolding disaster narratives that are another kind of clock or clocks ticking toward this or that prediction, such as the “12 years to limit climate change catastrophe” of the 2018 IPCC report (Watts, 2018) that a year later was updated to 18 months (McGrath, 2019). And the recent COP26 climate summit held in Glasgow saw environmental activist groups’ demands for net zero carbon emissions by 2030, which industrialised nations predictably did not agree upon, rather choosing 2050 for varying percentages in reductions. What deals were able to be made at the summit, depending on one’s view, hope, or fear, are a step forward (McGrath, 2021) or a death knell to remaining under 1.5 degrees global warming which surely consigns much of the Global South in particular to catastrophic climate change (Williams, 2021).

In taking on board the climate crisis, many—from environmental scientists and activists to lay people—might feel bombarded by the data, information, and reports that now appear with regularity in some news forums and hardly at all in others. For those of us who do attempt to keep up with them to some degree, there can be the risk of an information overload of climate crisis ‘factoids’ that cause the situation to seem impossible, and action pointless (Morton, 2018, in; Mason, 2020), even as these timescales count down in relentless fashion. And there is so much to attend to in the present, even as the crisis presses in upon this present with greater force.

Much of the literature reviewed only makes passing and perhaps generic reference to the climate crisis, if at all. Nowotny, however, spends more time considering that time is running out; that acceleration has set us on “a seemingly irrevocable collision course with [the] natural environment” (Nowotny, 2019, p. 73), and how today the future’s fragility has taken from the future its very attraction. Modernity’s ever-accelerating innovations will be for negligible gains if our children cannot thrive on what may become an “uninhabitable earth” (Wallace-Wells, 2017); rife with wildfires and floods, too hot and lacking breathable air, with mass food shortages, a critical lack of biodiversity, and, ironically, a culture of
accelerated innovation that has not been fast enough to provide solutions to the above, and alternatives to that which we have destroyed.

In the space of one or two human centuries, if not decades, we are undoing Glacial time’s millennia-long processes that have built the very optimal conditions of life we rely on to live and evolve positively, and Nowotny echoes Morton when she writes that “[it] is no longer only the familiar time scale of human history that will decide this race [against time]. We are up against time scales of radically different orders of magnitude” (Nowotny, 2019, p. 73).

These time scales are with us, intermixed with those of our ICTs, our instantaneous communications, attractions and distractions, our new work regimes, our entanglement and social togetherness, among fellow humans and all manner of other informational agents and entities. Our informational affordances grant us greater understanding of what is happening, but that does not in itself solve the crisis.

Castells suggests better consideration of the future in terms of our children, and the relevant time-scaling according to familial generations, is one way to gain perspective towards an ecologically-minded future, and so the glacial time we cannot further ignore.

“In very direct, personal terms, glacial time means to measure our life by the life of our children, and of the children of the children of our children. [...] To propose sustainable development as intergenerational solidarity brings together healthy selfishness and systemic thinking in an evolutionary perspective” (Castells, 2010b, pp. 183-184).

Despite the hyperobject excess in terms of the stuff of our technological world; endless hardware, discarded and piling up as it is made obsolete and replaced by more new hardware, ICTs and their inherent multiple time affordances and obligations have the potential to draw us into this temporal plurality inclusive of the glacial time that previously may have occupied religion to some degree until side-lined in modernity’s humanistic, accelerating progress.
“We live in an extended present that has appropriated many of the possibilities that we used to think of as located in the distant future. It brings us closer to the time scales of the universe and of evolution that exist independently of human activities but are made accessible through human activities. The epoch of the Anthropocene, marked by the undeniable impact of human intervention on the natural environment, forces us into a cognitive and emotional confrontation we can no longer escape” (Nowotny, 2019, p.84).

While the condition of urgent immediacy and glacial time appear to set up a binary, oppositional stalemate that only leads further into escalating crisis, Bensaude-Vincent argues that the ecological predicament “invites us to adopt a polychronic view, assuming a variety of heterogeneous temporal trajectories” (Bensaude-Vincent, 2021). This can enable us to understand the crisis as “resulting from conflicting temporalities” (Bensaude-Vincent, 2021), such as extractive and polluting industrial processes, ICT instantaneousness, regrowth timescales of depleted underwater reefs, the roles of all manner of decreasing insect species, and the overarching glacial time(s) of the planet as a life–and life-providing–form itself.

For Bensaude-Vincent, the word Anthropocene —shorthand of mankind’s impact upon the Earth—suggest that ‘we’ are responsible for disturbances in nature caused by industry and exploitation. But mankind as a whole and an entirety is of course not responsible to an equal degree (Bensaude-Vincent, 2021). Carbon footprints and other ecological impacts vary greatly. As we saw at COP26, smaller southern hemisphere nations made desperate please to large industrialised nations, as they produce negligible impacts but face increasing occurrences of extreme weather events and rising sea levels that could submerge coastal and island nations (Faiola, 2021).

“The current insistence on ‘the great acceleration’, that is the hallmark of the Anthropocene, induces a screen effect on the conflicting temporalities at work in planetary phenomena. The global crisis should accordingly lead us to focus on the co-existence of a variety of heterogeneous timelines of humans, carbon, forests, microbes, rocks... The universal chronological timeline is but one way of
experiencing time and the current crises invite us to assume a variety of times, to adopt of polychromic view” (Bensaude-Vincent, 2021).

In acknowledging the counterpoint to Rosa and others here, we combine with Sharma’s critique of speed theory as being too all-encompassing and avoiding the true unevenness of time and the multitude of lived temporalities entangled with each other. Sharma’s focus is on the human, Bensaude-Vincent’s highlights the plural temporalities and timelines coexisting upon and within the planet.

Modernity’s industrial clock time was the mastery of nature (Giddens, 1984, in; Castells, 2010a). Plural time –polychronic time, indeed; Infospheric time– is surely where humans come to understand that mastery can only go so far when out of sync and negatively impacting on nature’s time fabric, and that human time(s) must take its place among not only the multiple time affordances of media and technologies, but so too the ecology of temporalities in and upon the Earth.

4.16. Further thought

Today we have almost come to accept that we live in uncertain and troubled times (Castells 2010a), and so too is impending doom being normalised as the climate crisis finally begins to populate mainstream media, more visible around us and upon our screens, escalating here within our lifetimes. ICT’s and the climate crisis provide different temporal factors increasingly influential upon the presumption of time’s linearity.

For Castells, linearity is made obsolete when the speed of communications, information and data transfer is instantaneous, and therefore disrupts the sequential order necessary for linearity. Time disappears, becomes both ephemeral and eternal; timeless time. And this, he argues, is now our dominant temporal form (Castells, 2010a, p. 495).

Our forms of cultural expression, via ICTs and the network, comply with this new order as we can call upon the stuff of anywhere and all times to flavour today’s mix (Castells, 2010a).
In this sense, the internet itself can be considered an art medium as much if not more than simply a carrier and disseminator of cultural works i.e., a medium of information (Groys, 2020, p. 32). And here, “in such a framework, our actions are recognised at last as polytemporal” (Latour, in; Groom, 2013, p. 166).

Castells writes:

“If encyclopaedias have organized human knowledge by alphabetical order, electronic media provide access to information, expression, and perception according to the impulses of the consumer or to the decisions of the producer. By so doing, the whole ordering of meaningful events loses its internal, chronological rhythm, and becomes arranged in time sequences depending upon the social context of their utilization. Thus, it is a culture at the same time of the eternal and of the ephemeral. It is eternal because it reaches back and forth to the whole sequence of cultural expressions. It is ephemeral because each arrangement, each specific sequencing, depends on the context and purpose under which any given cultural construct is solicited. We are not in a culture of circularity, but in a universe of undifferentiated temporality of cultural expressions” (Castells, 2010a, p. 492).

Timelessness is of course time-bound, as Castells acknowledges (Castells, 2010., p. 497). This is surely clear to us by the progressing stages of the climate crisis, and the dates we pass through towards ever-greater catastrophe. Time is marching on, irrespective of our having made it ‘disappear’. Glacial time, despite the human-caused disruptions, continues regardless, and this is our struggle today (Castells, 2010b, p. 184). Our ICTs and the climate crisis, to say nothing of the Covid pandemic, fasten us to time frames and awarenesses of which a general, omnipresent digital time and an overall, ever-present glacial time are only two.

“The individual is overwhelmed by the various temporalities he has to confront” (De Conninck, 1995, in; Castells, 2010a, pp. 472-473).
As we are overwhelmed by the present and its very combination of shifting, mediated temporalities, so too are we overwhelmed at the stuff of glacial time as nature’s greater temporalities sweep in upon us.

Philosopher Byung-Chul Han sees the time of acceleration as over, that we now exist in dyschronicity; in time that, while we remain embedded in it, lacks order and direction, and so is directionless (Han, 2017). What Castells describes as non-sequential, Han calls “the atomization of time” which “destroys the experience of continuity. The world becomes non-timely” (Han, 2017, pp. 7) in the zoom and zip of fragmentary experiences where narrative becomes unmanageable and empties out of our lives. These concerns echo those of Rosa, Tomlinson and Sutherland outlined earlier; frenetic standstill “in a present that has lost orientation” (Nowotny, 2019, p.70).

“To avert this emptiness, a mass of information is brought into circulation. The mass of information and imagery offers fullness in which emptiness is still noticeable. More information and communication alone do not illuminate the world. [...] The more information is set free, the more difficult it proves to survey the world. Hyperinformation and hypercommunication bring no light to the darkness” (Han, 2015, pp. 40-41).

This is both philosophical and polemic, and we might wonder how Floridi would respond here. Perhaps in the same manner as suggested earlier, the infosphere in contrast to Virilio’s void; so too Han’s emptiness. Our informational environment is a work in progress that we cannot now turn off (though extreme weather may have other ideas as infrastructure and connectivity is vulnerable); we find ourselves in a wealth of plural temporalities that threaten poverty of many kinds. The infosphere is:

“[...] growing in such a new liminal space [...]. [M]achine readable data, new forms of smart agency and onlife interactions are constantly evolving, because our technologies are perfectly fit to take advantage of such a new environment, often as the only real natives” (Floridi, 2018b, p. 1).
So, the suggestion here is that it is humans who need to adapt, among a plurality of informational entities, and so too a plurality of temporal regimes and freedoms. If all human activity is embedded in time, this is a deeply profound change, from time’s arrow to time’s grapeshot; hail and scatter.

Within this intensification, human lives and identities become fluid yet unstable (Rosa, 2015; Han, 2017), options and experiences are multiple, fleeting and stacked, distractions are inherent and ongoing. We cannot help but feel rushed and harried, struggling to maintain focus in a hall of time-variable mirrors.

Groys’s concern chimes with that of Han and Rosa, while he makes reach for a means to reconsider our very relationship with time:

“So today we are stuck in the present as it reproduces itself without leading to any future. We simply lose our time, without being able to invest it securely, to accumulate it, whether utopically or heterotopically. The loss of the infinite historical perspective generates the phenomenon of unproductive, wasted time. However, one can also interpret this wasted time more positively, as excessive time—as time that attests to our life as pure being-in-time, beyond its use within the framework of modern economic and political projects” (Groys, 2010, pp. 90).

4.17. Ending our literature review and analysis

We have explored many factors and influences great and small upon time, from day-to-day ICT use to glacial time and the climate crisis. We understand that the times are plural and temporalities multiple, and that this creates social and informational affordances, but so too various practical, philosophical and ecological dilemmas. From here we will proceed to further discussions.
5. Discussions

5.01 Introduction

The work of our discussion is to utilise the literature analysis and take our research concerns forward. As the reader will have seen, much of our discussion has begun already within the literature analysis. We are aware of today’s time(s) as plural, complex, uneven, often paradoxical, and conflictual. However, we remain time-based creatures. So, here we will attempt to discuss approaches towards time and our temporal experience, and consider time’s place within Library and Information Science.

While we understand that we and our activities are embedded in time, Groys poses the idea that we might prefer to view ourselves as being with time (Groys, 2010, pp. 94). This is to collaborate with time rather than be swamped and swept by it. How might we collaborate with time?

5.02 Becoming and Enduring

While being with time is to suggest ongoing relational progression, it is necessary to remain critical of any simplistic notion of becoming, for, while change is constant (Heraclitus, in; Graham, 2021), we are not necessarily built for relentless –let alone accelerating– change of the kind new technologies and impending emergencies might demand. Humankind “was not designed to live at the speed of light” (Mcluhan and Powers, 1989, in; Sutherland, 2018, p. 20). And it is debatable whether “anyone lives a philosophy of becoming” (Baraitser, 2021, p. 13).

Capitalism can itself be seen as an ongoing becoming (Sutherland, 2018) in that market processes are in revolution: as new products, resources and consumer demographics are constantly sought and exploited by the market and the innovation discussed previously. And as capitalism can be seen as having become fast capitalism, so too will this form further
transition via the uncertainties and upheavals of today and tomorrow to the “disaster
capitalism”, discussed by Naomi Klein (Klein, 2008), thriving on crises and catastrophe.
Indeed, Baraitser explores notions of stuck, un-flowing and unexpectedly *enduring* time as
temporalities of inadvertent autonomy and possibilities of care to be found within their
seeming limitation (Baraitser, 2021); attributes we may widely recognise from the upheavals
of the pandemic. And we might look to what lingers; what we can hold and work with in the
flux of the present (Sutherland, 2018) and its overwhelming temporalities. This has
informational import, as we navigate both semantic and meaningful information, and its opposites; excesses of trivia, unnecessary or bad quality information.

And while we have considered Sharma’s recalibration as where and how we maintain
ourselves within an entanglement of temporalities and an overarching power chronography,
it is *de*-calibration where we find other, alternative and resistant temporalities (Sharma,
2014b), and so other informational environments and temporalities; “pockets of

### 5.03. Other speeds, other times

As we have seen, modernity and technological speeds *create* slownesses (Rosa, 2015;
Wajcman, 2015), as both an effect and an affordance (of acceleration and immediacy), not
only in the ways mentioned previously, but in the engendering of alternative and
oppositional (sub)cultures, as well as temporal plurality and variation in the activities of the
wider society. Here we will briefly explore a number of such.

### 5.04. Slow

‘Slow’ culture tends to mean the reduction of life’s pace by taking time over activities, found
in such things as slow food (based within regional produce) and slow travel (not rushing
over journeys and vacations). Slow is less about reducing speed in all cases than choosing
the right speed according to the activity. It aims to mediate the rushed pace of modern life,
and the quality of products, activities, experiences, with slow behaviours having the potential to “provide breathing spaces outside the dominant social tempo” (Poirier and Robinson, 2013, p.700).

While trends and cultures of slow practice are considered and seen as useful in the literature, they are also questioned as the answer to acceleration, immediacy, and overconsumption (Tomlinson, 2007; Sharma, 2014), appearing in their more obvious forms as lifestyle choices towards recalibration and leisure, and are often based within middle class values and privileges (Hoffman, 2009), rather than a social movement of wider and more significant urgency.

“Within this slow living imaginary, time is treated as something to which we all have equal access” (Sharma, 2014, p. 133).

For Sharma, slow practice often reveals and maintains power chronography between those able to participate in slow activities, and those required to serve these cultures, such as cleaners at slow restaurants and retreats, and the workforces of ‘slower’ transport (e.g., trains rather than planes) for those on such travels (Sharma, 2014). For Tomlinson, slow lacks the import of social movements such as those based in racial, gender, and sexuality issues and does not in itself seem likely to genuinely challenge acceleration and immediacy’s dominance, however emergent ideas and values within slow are both worthy of cultivation and may become further-reaching (Tomlinson, 2007), indeed, surely today taking their place within the increasing consciousness towards sustainability and mental health.

5.05. Time Millionaires

A societal cult of busyness discussed previously finds opposition from others who prioritise their free time, the doing of ‘nothing’, or less, and (a la slow) at less speed; so-called “time millionaires” (Kale, 2021). While newly relevant since the Covid pandemic’s enforced shifts in behaviours and concerns, this is a wealth-associative name for what is the prioritising of time over money (which may be afforded by having previously earned a lot of money and so
able to make such a priority) that, while making the point, maintains notions of currency and individual hoarding as signifiers of value and status. Whether this is a significant demographic remains to be seen, as the number of time millionaires among us isn’t clear, and again the term suggests — a la money’s millionaires — a minority.

5.06. Deceleration

While slow has lifestyle associations, deceleration implies industrial processes as much as it does individual or local actions. And in contrast to Tomlinson’s view of slow’s wider, socially transformative potential, Rosa sees deceleration as likely to become “the dominant counter-ideology” of this century (Rosa, 2015, p. 303), recalling us to Castells’ view of the now impossible to ignore environmental movement for whom deceleration (particularly of industrial production and emissions) is a must.

For Han, deceleration is no answer because acceleration (being over) itself is not the actual problem. It is rather “the scattering and dissociation of temporality” (Han, 2015, p. 32). The emptiness Han warns against is not solved by a deceleration that may lack rhythm and direction in a similar way to acceleration (Han, 2015, p. 33).

However, in view of Capitalism’s ultimately destructive exponential growth and the contemporary speed of the climate crisis, and beyond the philosophical impulse above, deceleration as a principle must be considered. This is a societal shift with significant consequences; deceleration is a reduction in consumption, and so a reduction in production (Negrey, 2012, p. 189), with questions regarding jobs and livelihoods. But proponents of a ‘Green New Deal’ point to longer term benefits for both lives and the economy (Guardian, 2019).

The need to reconsider quality of life over quantity of goods is a time issue, and in contemplating deceleration and slowness, Wajcman asks us to avoid oversimplification:
“A fast/slow dichotomy cannot hope to capture the simultaneous coexistence of multiple temporalities that characterizes the experience of modernity. Once we recognize this, we can begin to reimagine hybrid sociomaterial [sic] assemblages or networks for enacting different times in an intensely technological world” (Wajcman, 2015, p. 176).

5.07. Stillness and balance

Sutherland contemplates stillness via the work of the 20th century Vorticist artist Wyndham Lewis and the media theorist Marshall McLuhan, and the notion that in the eye of the flux or vortex is a freeing stillness from which we can “observe the process of time from outside itself” (Sutherland, 2018, p. 13). McLuhan had already foreseen that the acceleration within new media technologies creates multiple tempos which allow greater affordances to perceive the environment (McLuhan, in; Sutherland, 2018, p. 15), Floridi’s infosphere being an example of this. And while we have considered slow and deceleration, it is interesting to contemplate stillness through the alternative lens Sutherland offers to that of, say, contemporary ‘mindfulness’ and wellness practices which, beyond the highlighting upon the rhythmic practice of breathing, perhaps turn away from the workings of time rather than attempt to better comprehend them.

Indeed, the wellness industry often fits rather too well into the recalibration demands of contemporary capitalism (Sharma, 2014a). In addition, it involves the combination of what Tomlinson would call abstention (a passive restraining from the rush) (Tomlinson, 2007), and another consumer industry (in classes, therapies, and products). Patience too, as a temporal approach, is to be questioned:

“[T]he appeal of patience cannot be cleared of an ideological suspicion: as the counsel of the powerful to the subordinate to tolerate their lot” (Tomlinson, 2007, p. 152).
Rather, Tomlinson advocates for focus and balance. Focus in a “sharpening the resolution of our present experience of being-in-the-world rather than allowing for speed and flux of life to carry us away” (Tomlinson, 2007, p. 152). And a balance which, rather than a “coming to rest” is more “a process of constant reflexive re-balancing in the face of contingency” (Tomlinson, 2007, p.158). This activity of both participation and resistance complements Sutherland’s stillness, going against the inherent complacencies at the heart of speed and immediacy and is inclusive of the virtues that are to be had within speed; such as dynamism, inspiration and opportunities for change (Tomlinson, 2007).

5.08. Lull

Stillness finds relation in lull; a notion of time(s) not found in the present literature. Lull is not active as such but neither is it necessarily passive. It is a break in proceedings; an indeterminate moment from which a refreshed, reoriented activity may begin, as and when. Here we find a breathing space, a between, wherein new or other awareness or inspiration is as likely as aimlessness or drift.

Lull is surely a relative of ambience; which is neither noise nor silence. Perhaps, during (a) lull, certain time is both held at arms-length, and other time is welcomed with open arms. Within lull we might re- or de-calibrate, the options are open.

While the Covid pandemic had many obvious negative aspects, perhaps characteristics of lull appeared within the societal activity and imaginary, in which new or previously sidelined –indeed, often ‘slower’ activities (crafts, baking, gardening, and also community engagement and social action)– had a chance to be considered and desired, undertaken, and perhaps become habitual.
5.09. Repetitive time

Gorichanaz discusses repetition in terms of its temporal activity and value, as regards both our relationship with information and life lived well (Gorichanaz, 2021). Routine may be associated with the mundane and obligatory, but repetitions are necessary and, paradoxically perhaps, rather than remaining the same they continuously vary to some degree; offering us both reassurance in their familiar and ritualistic aspect, and manageable in terms of progression, development, and change. We learn through the repetition of activities, such as, in Gorichanaz’s case, playing the guitar, which displays these traits of recurrent activity in the playing, and progression in the ability and so expansion of skills and options with the instrument. Indeed, listening to music, an informational form, is enriched by repeat listening that builds our relationship with it, and Gorichanaz wonders why we do not tend to take this understood practice to such things as the re-reading of books and other literature (Gorichanaz, 2021).

The repetitions that we choose in our discretionary time (but also woven to certain degrees into work and care responsibilities) are that which lingers and holds, even as they vary over time. We might recall the radio deejay John Peel’s description of his favourite group The Fall as “always different, always the same” (Fall, n.d.); which could apply in no small part to life, indeed time.

5.10. Ritual and Narrative time

ICTs and the climate crisis threaten, in different ways, the consistency found in rituals of both an everyday and a profound nature. As for Castells’s sequentiality, for Han, duration is lost within the additive processes of instantaneous hyper phenomena, and therefore the possibility of narrative. Acceleration and its knock-on slownesses create “de-temporalization”, where stacked, fragmentary and fleeting events take place in a space and time of endless connections but no completions. “Incompletion becomes a permanent condition” (Han, 2017, p. 25). Groys, too, sees in the contemporary a trend of novel projects that are begun and abandoned, this via social acceleration and the changing of generations,
trends and professional practices (Groys, 2010), indeed; mirroring problematic cycles of innovation.

As we understand from movies and novels, narrative only admits certain elements, and for Han it cannot be accelerated. His examples are rituals such as ceremonies, and processions, which “impede the accelerated circulation of information, communication, and production” (Han, 2015, p. 30). A pilgrimage “[…] is not a passage to be traversed as quickly as possible, but a path rich in significance” (Han, 2015, p. 31).

Han’s discussion of what appear to be more profound, religious or cultural rituals in many ways chimes with the positive repetitions of Gorichanaz and the habits we develop, choose and/or are able to maintain in and around our obligations and primary responsibilities. Both attest not only to narrative via habituation, but also learning as a kind of pilgrimage; not to Enlightenment, but enlightenments along the way.

5.11. Resonance

Rosa followed his work on acceleration with a theory of resonance and resonant experience, which acts as counter to the alienation brought about by the fragmentation and subsequent alienation within accelerating modernisation (Rosa, 2020).

Unlike repetition and ritual which, despite the inherent variation(s) described, maintain a core of predictable order, resonance is impossible to predict in any real way, should not be mistaken for necessarily harmonious and unifying, and is transformative due to the element of difference—even contradiction and/or opposition— that causes the resonance (Rosa, 2018). It is in many ways the response to a call beyond oneself, found in such things as a relationship with another person, an artwork (of any kind), an experience of nature; all of which offer “axes” for resonant experience (Rosa, 2018).

Resonance is an active connection which leads to both self and world-transformation (Rosa, 2018). It possesses a “non-disposability and moment-like character” (Rosa, 2018), and while
requiring a certain stability from which to be open to it, compels a genuinely dynamic and relational exchange.

Why is resonance of interest to us here, where our concern is time and temporalities? Firstly, because Rosa’s resonant experiences are informational; educational and transformative, but are also exchanges with other informational entities (other people, artworks, nature, etc). And Rosa argues that societal acceleration and time pressure work against the possibility of resonance, and so the greater possibility of living a good and vibrant life (Rosa, 2018). But also, as the multiple temporalities within ICTs, the ecological crisis, and the global pandemic ask us to absorb increasing amounts of information, we might ask not only what remains but also what resonates within all this upheaval, pressure, and intensification?

ICTs are so interwoven and ubiquitous today that the influencing temporal factors above are as likely to appear in tandem with the interactions and experiences they afford and engender. Therefore, we might pay attention and foster those activities that embed further than the ongoing and ever-distracting novelty that comes with technological development.

Repetition and resonance offer a complimentary pairing of experiential concepts that enhance our times and temporalities, individually and socially. Resonant experiences we try to preserve, which may lead to positive repetition formed by the new influence within our lives. So too, repetition of beneficial and enriching activities (but also difficult ones such as certain care relationships) may lead us to experiences of resonance, such as Gorichanaz achieving a desired melody on the guitar and being able to play it over and over ‘without thinking’.

5.12. Art’s time

A relationship with art in both artmaking itself and the experience as viewer and/or participant offers potential for both the resonance explored by Rosa and “forward-looking
repetition” (Gorichanaz, 2021). Additionally, art is a means of ‘delivering us from the time mechanism of existence’ (McLuhan, 2011, in; Sutherland, 2018).

Art and its creation bring about another combination of times; that of the preoccupation and focus required in the making process (which can be felt to be a stepping-to-one-side of time), and the untimeliness of the artwork as it is brought into existence and takes its place in the world. Art’s moment “is that which “eludes the vicissitudes of temporal movement” (Sutherland, 2018, p. 13).

Artworks by their nature contain temporal pluralities and complexities (Serafini and Banks, 2020). Art combines both the social and participatory nature of an artwork in desiring a responsive audience, and the solitude often required for the creative process (Sutherland, 2018, p. 17).

To counter the inevitability of a certain nuanced generalisation when discussing art, it is important to note how the lives and time affordances of artists vary considerably. Discussions of precarity in the creative industry wash over great difference, as artists come from all social backgrounds and walks of life (Serafini and Banks, 2020). Studio time, preparation activities, and other art-devoted time is not simply available as and when, and can come at the cost to other aspects of life such as domestic responsibilities and social leisure. In addition, the artist risks possible “self-exploitation” and overworking, with time often being more important to the artist than money (Serafini and Banks, 2020). (However, the author can attest that the last thing an artist would describe themselves as is a ‘time millionaire’).

5.13. Creative tensions

McLuhan wrote that mechanical clock time becomes unacceptable by its linear uniformity when superseded in the plurality of times of an instantaneous media environment (McLuhan, 1968, p. 147). And Negrey writes that:
“[…] the industrial clock-time regime does not mesh well with more task-oriented creative and knowledge work in the arts, technology, and professions in which the requisite creative inspiration cannot be forced by, and may in fact be squelched by, the clock” (Negrey, 2012, p. 194).

But while flexible working patterns and a somewhat greater degree of shared domestic work among households today may create greater opportunities to include creative practices in daily life, an intensified, inter-mediated, plural time(s) – that require ongoing recalibration – challenge the opportunity for art making and experiences of art (in all forms and particularly those beyond mass exposure presentations and outlets) for those not able to fund swathes of discretionary time and the continuous and consistent creative repetition that may lead to greater opportunities in the relevant context and industry.

We have discussed the conflictual and paradoxical nature of contemporary times, and so it is that we see many desired and beneficial preoccupations contain temporal dualities and “antagonisms” (Rothbauer and Cedeira Serantes, 2021, p. 118). While we might wish to be aware of and best use our time, so do we use the notion of ‘losing track of time’ to suggest one was in the moment, absorbed and diverted from time’s pressure, though with possible consequences such as being late for something else. Similarly, while for creative and pleasure activities we might have to make or find time, so too might we struggle against it:

"It is not simply a question of finding time to write—one also writes against time, knowing that life is short. [...] that life is not promised—that it is crucial for a writer to respect time." (hooks, 1999, p. 21).

In the Serafini and Banks paper a female artist describes her working pattern as “all broken up, and grabbing bits of time here and there”, a pattern both responsive and reactive (Serafini and Banks, 2020, p. 366). And bell hooks was, above, talking about women writers; women as we have seen tending to juggle time-dense schedules of work, domestic labour and care, even before other activities. However, without diminishing this continuing reality, many of all demographics—and particularly, the author would argue, artists—can surely relate to today’s struggle for and against time.
“Most artists need unbound time to create, but also need to work, to different extents, within social and institutional structures that are external to art, and the time of unbound making. [...] Time and the reflexive negotiation between time and other elements (such as financial compensation, stability, notions of success) is such a defining trait of the lives of artists working under precarity that it becomes constitutive of artists’ identities. [...] Within precarity, artists inhabit multiple, simultaneous temporalities, which correspond to different aspects of their commitment to live and work as an artist” (Serafini and Banks, 2020, p. 369).

The stuff of Floridi’s semantic capital (meaningful information) is created by people, it does not simply appear. Therefore, the stresses and strains upon artists within an intensified present (and uncertain future) have knock on effects for the ongoing cycle in regeneration, health and vibrancy of art’s appearance and existence in contemporary societies that presume themselves culturally—and informationally—rich.

5.14. Re-localised time and the familial

in entanglement and the local nature of time, which via ICT’s today is more a temporal ‘locality’ that we create—from online social networks of particular friends and family, or interest-led communities, and known (trusted) information sources—we find something of the familial; family itself a site of temporal entanglement wherein exist inter-relation, commonality and disagreement, a certain struggle to live together, yet with dimensions of firm trust and bond. Here, we recall Castell’s suggestion that we base our environmental actions on our ‘selfish’ desires for our children’s lives.

The worry of course, is echo chambers and tribalism; ‘my’ or ‘our’ family (or circle, community, demographic, etc), rather than the wider familial relationship extending outwards and necessary for both a diverse and healthy world and infosphere herein.
For Wajcman, how people use devices within the overarching intensifications of work schedules to keep up with friends and family is a kind of everyday subversion (Wajcman, 2015), and recalls Franco ‘Bifa’ Berardi’s notion of friendship as a bridge over chaos and lack of meaning (Berardi, 2018); these, as we have seen, risked in time’s fragmentation and the loss of sequence and narrative direction.

Today’s fast capitalism, unfolding climate catastrophe, and ICT ubiquity compel us towards a hyper-awareness of time and a near-constant anxiety around it; time as a kind of currency we are investing, earning, losing, trading. Am I wasting it? Am I making the most of it? Am I being productive or lazy? Am I getting enough rest? Do I have time for this or that fitness or wellness regime in my schedule? When do I have time to meet this or that friend and ‘catch up’? In de-calibration, Sharma desires us to resist temporal dominance, to pool time(s), but also to get beyond an obsession with time.

5.15. Time and LIS

We will now consider the implications of the research on Library and Information Science. As mentioned earlier, an edition of the Journal of Documentation (Vol. 78, issue 1, 2022) on the subject of time and temporality in LIS has appeared simultaneously to this dissertation, so the topic is clearly growing in interest and study within the field.

“[T]he problem of time is inseparable from that of meaning. Time is the fundamental medium and condition of human meanings. It is the finitude of that element which is the ground of all existential quandaries” (Hoffman, 2009, p. 182).

Time, while essentially unseen, “helps us make sense of the world and our social lives” (Haider, Johansson and Hammerfelt, 2022, p. 2); which are, as we have seen today, increasingly informational and entangled in terms of togetherness and varying temporalities. Indeed, “problems of information are frequently formulated as problems of time, and vice-versa” (Haider, Johansson and Hammerfelt, 2022, p. 3).
Information (and so knowledge) is time-based in terms of its ongoing process (of creation), its accrual, and availability. We experience meaning not only in temporal events but also documents, which is to say ‘the human record’; the primary concern for LIS (Bawden and Robinson, 2012). This necessitates concern upon humans’ ability to produce, experience and maintain our records. Time and temporal issues are fundamental here.

Information seeking and absorption are temporal processes and actions dependent on time’s availability and --perhaps more often-- its constraints, with time affordances being subjective according to the differing “time horizons” of information seekers (Savolainen, 2006, p. 116). Information seeking involves not only information resources but also the focus conducive to that seeking which often demands more than partial (or distracted) attention. If we feel harried and rushed for time, we may settle for information of less real relevance, depth or quality, discarding information that might require greater time and attention (Savolainen, 2006, p. 118). Indeed, this may be a perfectly natural reaction not only due to time constraints but today where information glut is more or less the norm (Bawden and Robinson, 2012, p. 334).

The information seeker may also require assistance, calling upon the temporal availability within other work-flows of LIS professional whose practices have fragmented and intensified along the general societal and institutional lines (Nicholson, 2019) discussed previously. As with other sectors, the activities of information services are obliged to speed up, keep pace, update where necessary (i.e., continuously); challenging both the ongoing work of research and the management of libraries, collections, and archives that often requires the appropriate pace(s) and rhythm(s). As information workers and services are themselves embedded within social and knowledge networks, they are not immune from a dominant tempo of speed and immediacy, and the need to recalibrate (Nicholson, 2019), despite lingering stereotypes of, say, library work within the societal imaginary.

Traditional spaces such as libraries and archives have had to adapt to societal expectations of what we might call fast information; immediate, 24/7 access to at least digitally-available resources engendered by the search engine at the fingertips of anyone with a smart device.
Libraries are inherently time-plural; as the spaces themselves together with the collection of information resources and activities offer and induce varying and variable temporal experiences. Here, “different times accumulate, since many possible times are present in one place” (Deckner, 2019, p. 95). Alongside the expected books we find online access and resources, skills learning workshops and information literacy, social help and citizen’s advice, photocopying, local group meetings, children’s activities, and so on.

Reading itself today, in online and physical formats, in text-heavy communications and media, from instant messaging to newspaper articles, list recommendations, meme quotations, goes far beyond the book as model (Rothbauer and Cedeira Serantes, 2021).

“The intriguing temporal quality of reading is that it fits into daily routines and rhythms, but at the same time, it can be a revolt against temporal regimes. Reading in this register is about escaping time, or resisting the pressures of clock time—it is about making time” (Rothbauer and Cedeira Serantes, 2021, p. 121).

Reading “destabilizes time” even as, for the reader it may well provide reassurance and stability within spaces of the day (Rothbauer and Cedeira Serantes, 2021, p. 119). As for artists and LIS professionals, so too for readers; time is vital to the occupation. And we see that even the act of reading and absorption of information so central to LIS contains contrasts and paradoxes even before we consider the intensification and new media environments of today’s plural times.

Concepts of documents and resources themselves radically change in the infosphere as ever-increasing amounts of information are accumulated by publics interacting and producing daily to a degree previously unthinkable. This ‘content’ exists in often barely-ordered collections of postings, files, shared photos, existing in clouds and the memory of any number of devices. Here we find “multitudes of variously enduring and interconnected, personalised, ‘archives’ of past events, imbued in constructions of the present” (Haider, Johansson and Hammerfelt, 2022, p. 5).
An accelerated infosphere treads the fine line between increased access to more and good quality information—therefore learning, life options and betterment for humanity (Floridi, 2014), and flipsides of both information overload and information poverty where access, infrastructure and literacy is lesser or unaffordable (Bawden and Robinson, 2012, p. 244). Here, “misinformation or disinformation seem to thrive” (Haider, Johansson and Hammerfelt, 2022, p. 8).

And as we have explored, external events within uncertain and disruptive times have influence on our sense of time and what lies ahead, so too does this “quickly alter modes, speed, and forms of data production and use” (Haider, Johansson and Hammerfelt, 2022, p. 13) that information services must become aware of, assess, include to greater or lesser degree, updating accordingly. The nature of the internet itself, upon which ICT’s operate and connect, is one of data in states of emergence, submersion, disappearance and modification (Groys, 2021, p. 37). Online publications are rarely today standalone entities that can be preserved without the interconnection involved; from internal links to other sites (that may or may not remain active), to reader-comment threads. Despite being rushed and harried, people use much time to participate and interact online which in turn creates further, relational content.

As discussed above, Information seeking is a fundamental LIS concern. It is, today, something that people are doing at almost all times, as is exposure to ICT-enabled and mediated, multi-temporal, informational experiences. LIS professionals need to understand the plural nature of both the times (as lived) and variable, layered and stacked moments within which people are experiencing and interacting with document-types old and new, often in ICT-enabled combinations. For LIS, the understanding not only of human records but the mediums in which they appear is vital. Today that means understanding multi-functional ICTs; surely in basic terms of far greater complexity than physical books and static or analogue artifacts. Here, LIS research intersects with media theory and sociology.

When Rosa writes that “[t]he faster things change, the less it is worth the effort of becoming intimately familiar with them” (Rosa, 2015, p. 318), this has many implications. Of interest here is how, technologically, this means not really understanding—or caring—how
our ICTs work (or how and at what cost they are manufactured); just needing them to work (otherwise everything breaks down). The more our records are housed upon and created by ICTs (both hardware and software, and energy-reliant) the more dependent we are upon them to work and continue to work, despite the cycle of obsolescence and updating inherent to technological innovation that locks us into obligatory consumption of a scale far beyond that of the production and collection of books and other physical publications and practices of storage and maintenance. Again, these are temporal issues stemming from the time scenarios of contemporary ICT-enabled life.

In considering Floridi’s concepts of the infosphere (as a more positive means of looking at today’s complex and uncertain world) and socialpreferability (within innovation), the concern here is as to whether our experience of harried-ness, temporal intensification, and the need to keep-up impacts upon our ability to make the most of the fruits of the infosphere; increased access to all manner of information and informational experience, with the benefits involved. This is to consider societal progress as laid out earlier, and in which LIS concerns (and the possible mediation and benevolent influence the sector wishes to exert within society) are of profound part.

Floridi’s sets out the questions of infospheric progress thus:

“What seems to be lacking, in affluent societies, is the fundamental engagement with the human project [...]. It is as if, having worked hard to gain the right to be on vacation, humanity might then be uncritically unprepared to make the most of its most precious resource, time. Technologies are used to save time first, and then to kill it. So one of the pressing political questions that we are facing in advance information societies is: what sort of human project are we working on?” (Floridi, 2014).

And in terms of information services, obliged to update and keep-up as a constant, we might again ask what lingers and holds? To paraphrase Sutherland, what is LIS able to retrieve into the present? Surely our duty is “those truths (so to speak) that would be drowned in the fast-moving stream of experience” (Sutherland, 2018, p. 19)?
5.16. Time Literacy

Above, we have discussed various concerns and intersections between LIS and time. We will now consider an outlined, provisional ‘time literacy’. This takes as its departure point the commonly understood ‘information literacy’ and more recent ‘digital literacy’, which, while both lacking strict definitions, can be explained as such:

“Digital literacy is the set of attitudes, understanding and skills needed to find, communicate and use information effectively, in a variety of media and formats. [...] Information Literacy is defined as the ability to know when there is a need for information, to be able to identify, locate, evaluate, and effectively use that information for the issue or problem at hand” (Bawden and Robinson, 2012, pp. 288-289).

Via the research and discussion thus far, we can surely identify various time and temporal issues within these two areas of literacy and skills development. And while these literacies have gone beyond formal educational to be recognised as of general benefit to contemporary life and society (Bawden and Robinson, 2012, p.300), so might a time literacy; when we understand our times to be plural, where temporal factors can be multiple, overwhelming and contradictory; affecting both individual and social progress and wellbeing.

(We will use information literacy as the basis for discussion here, as despite emerging prior to digital literacy, it appears a better fit when alongside mentions of ICTS, the infosphere, informational entities, and so on).

Time literacy might sound as if leaning towards lifestyle coaching and the more efficient use of an individual’s time, but if deployed from within information literacy a certain seriousness and social use value surely becomes clear. The inherent temporal factors of information, ICTs and our lives among them are of growing significance (Haider and Sundin, 2021, p.130), and so it follows that information literacies contain subtexts of time concerns worthy of greater consideration.
“[I]f information literacies are to be considered forms of critical engagement with information, then they need to include opportunities for understanding how people, their actions and imaginations are integral to the information infrastructure” (Haider and Sundin, 2021, p.130).

In a time literacy, people would be foregrounded in a manner complimentary to information literacy, as our actions are embedded in time, and time affordances and limitations where such temporally-influenced states such as relaxation, focus, harried-ness, and anxiety can affect their activities.

A critical literacy not only assists people to act within dominant norms as they appear in societal structures but should also include contextualisation, as well as alternatives and resistances to those where they involve bias, injustice and/or ignorance of diversity (Haider and Sundin, 2021, p.131; Haider, Johansson and Hammerfelt, 2022, p. 11). Therefore, a time literacy would hope to equip the individual and group with a survey of time concepts from the dominant (e.g., speed and immediacy) to those such as the time pressure paradox of Wajcman, the temporal entanglement of Sharma, and the ecological time-scapes of Bensaude-Vincent.

Time-scapes and pluralities, affordances and entanglement might appear as key to understanding a decentring –along the lines of Floridi’s infospheric decentring of humans– of a preoccupation with one’s own time and in particular one’s free time, and an opening-up to time as lived; interconnected with others and in plural time frames from the everyday to the glacial. The common concern would be how can we understand and make best use of a plurality of time affordances while navigating a plurality of temporal limitations, complexities, and paradoxes?

A specific time literacy component in information literacy could be of great enjoyment; time and the experience of it being both common and unique to us all. One can imagine various playful and studious activities that call upon both personal experience and the observation of time’s workings in the lives of others and societal, political, media, and natural processes, to name but a few. Cliches in time attitudes and supposed truisms could be explored for
their realism or otherwise. The notion of time’s linear flow would be offset by the inherent disruptive nature of ICTs and contemporary, near-permanently online life where we are always more or less ‘doing media’, with pros and cons of this scenario explored. Outlooks towards fragile and troubling futures could be aired and explored, and time-related contributions within positive action and coping strategies explored.

A simplistic notion of information literacy often divides generations (Haider, Johansson and Hammerfelt, 2022, p. 7). A literacy of time might build bridges via the sharing of experiences and perceptions. Younger people might bring ICT second-nature and experiences of multiple, stacked moments, together with greater anxieties of the future and climate catastrophe countdowns. Older people might find great interest in ideas upon time’s plurality that challenge a traditional, mechanical clock time of earlier life, and aids in comprehending what all the rush and anxiety in modern life is about. The Covid pandemic’s effect on people and their temporal experiences would only add further ground for sharing, where commonalities and variations could be pooled and attitudes and approaches towards time built upon and refined.

These are generalisations of course. But a time literacy would aspire to an empathy upon our relationships in and with time(s); responding to Sharma’s call to explore the ‘meantime’ of our temporal entanglements, while addressing a particular obsession with time which lures us to the overarching sense of harried-ness of Wajcman’s time pressure paradox and the desire or requirement for individual recalibrations.

5.17. A model for time literacy

And so, a very provisional model for time literacy, utilising and adapting that proposed for digital literacy by Bawden and Robinson (Bawden and Robinson, 2012, p. 296), is as follows:

Underpinnings and basic skills

- Literacy per se
- ICT literary
• Understanding of time and temporalities as a key factor in contemporary life

Background knowledge and complimentary skills
• The world of information
• Nature of ICT resources as engendering multi-temporal actions and experiences
• Environmental considerations

Central competencies
• Awareness of temporal difference and plurality in ICT activities
• Awareness of temporal difference and plurality in social activities and obligations
• Information and media literacy
• Personal and community time resources

Attitudes and perspectives
• Independent learning and temporal navigation
• Moral, social and ecological literacy

This is a sketch, and intended to provoke thought rather than set out a rigid framework that just so happens to validate the preceding research. As time is experienced both uniquely and socially, the thoughts and questions of others would only contribute to a better shaping of this provisional model.
6. Conclusions

6.01. Introduction

The objectives of the research were to explore concerns and experiences of time and temporality in a contemporary climate that includes both instantaneous communications and ecological crises countdowns, and how experiential time issues relate to both Library and Information Science and our lives as informational agents.

Here we will summarise the literature analysis and the subsequent discussions raised, and draw the project to a close.

6.02. Research objectives: summary of findings and conclusions

Despite variations of thought and concept, the literature tends to agree upon experiences of time and temporalities as being plural today, this enabled (intentionally or otherwise) by an overarching dominance –both general and assumed– of speed, acceleration and immediacy. This speed is to be found in the scenarios of contemporary capitalism and the climate crisis, and also work and leisure practices, individual and social habits. This, despite the affordances of technologies that are intended to save time, and contradictions of experience, promotes a sense of rush and harried-ness as we organise and enact entangled, ICT-enhanced and intensified lives within this temporal plurality.

These factors cause the disruption of previous time norms, with profound affect upon us. While we may hold to ideas of clock time and our living by them, we are rather living among variable combinations of temporalities as found in—in but not limited to—instantaneous technological communications, ecological and glacial time(s), and the Covid pandemic.

The human experience of time today cannot occur without the consideration of ICTs, their intention and subsequent effects on our behaviours. And, I contend, neither can it occur
without the dramatic change from progressive futures to the doubt, uncertainty and traumas of the climate crisis as it continues to unfold, and itself accelerates.

The instantaneous time of communications and data transfer, and the glacial time of nature responding to our modernity are both, in their own ephemeral and eternal manners, tempos which support us today, via the transaction and infrastructure of the former, and the fundamental life-support of the latter. And we have seen, via our reading of the infosphere as comprised of all manner of informational entities, that humans are not exceptionally central, and this enables us to better understand that time is not centred on us and the tempo(s) ‘we’ choose. It surely never was, but ICTs and the environmental crisis bring this into stark relief as we simultaneously chase the time affordances and obligations of ICTs, and are forced to anticipate and attempt to slow the time of extreme, accelerating ecological breakdown, which will in turn alter temporal experience (to say the least).

While the ‘time pressure paradox’ is real, so too is the felt sense that time is speeding past or it doesn’t flow as we would wish it to, and that we imagine we are running out of time in both personal terms and societal -indeed planetary- terms. Technology, innovation, and the pace of events appears fast and disorienting, but that of progress is slow and endangering.

Time pressure and anxiety impacts upon not only individuals but also information services and creative practices. Multiple temporalities and the access to vast quantities of information and entertainments via ICTs allow people to access the stuff of the infosphere at whatever time is convenient, preferred, and/or available, while at the same time a sequential temporality necessary for sense and meaning-making is challenged.

However, ICTs, flexible working, and the nature of acceleration of immediacy offer plurality of times and so too the potential of alternative, autonomous, and even resistant temporal approaches and experiences. We have discussed, among other things, repetition, resonance, and creative practice, as a set of possible considerations to one’s time that may provide breathing spaces within the sense of time passing and harried-ness.
There may be no achievable, all-encompassing relationship we can have with time, as it proves itself to be plural, and both we and time(s) change. And how could there be, in times we know to be uncertain and precarious, with a future so in question? Rather, a propositional time-literacy, as outlined in the discussion, might equip us with conscious thought, approaches and tactics in living within and among time(s).

6.03. Implications and lessons learned

Over the course of the project, we have gone to length in exploring outlooks and overviews towards time; the experience(s) of, and influences upon, time today. As we can see, it is rich, complex and paradoxical. And, perhaps by nature of the topic, a paper on time can only be provisionally complete or finished.

The literature analysis has validated much of the research imperative, confirming intuitions and experiences while complicating and enriching these in a wealth of thought and examination upon the topic of contemporary time.

An ongoing question has been that of the LIS relevance(s) in the topic. However, LIS is riddled with time issues, and our informational practices are temporal; reading, information seeking, literacy programmes, time horizons and constraints, information environments and intermediated scenarios, time horizons and constraints. We affected by all manner of temporal factors that influence our lives as lived in the infosphere, and therefore our abilities to make the most it.

Time is of increasing significance in our lives, and so too LIS, as we come to understand better our inherently time-based societies and informational activities. While a multitude of times can be overwhelming, it is also an opportunity to live according to the plural times at work among and beyond people, such as ICT processes and ecological time-scapes.

As we see in ecologies and natural systems, diversity is necessary for health, and health is necessary for vibrancy. We understand this in terms of information via the infosphere. And
perhaps we are healthier with a plurality of times to work with, rather than a single, mechanical clock time by which we fall in line?

This makes demands on ourselves and our information services, as we attempt to keep up with developments. Among issues of direction, linearity and the sequential, we find profound anxieties. However, the trade-off taking place is to a set of options and variables that perhaps bring us in touch with not only the ephemeral but also eternal dimensions of time. McLuhan posited this as return to a mythic time (McLuhan, 1968), and believed that “within any media environment, we can find the tools to emancipate ourselves from its grip upon our thoughts and perception” (Sutherland, 2018, p. 14), to which Wajcman would surely agree. And as Sharma suggests, we might reorient our priorities from the free time of individuals to the entanglement of social time(s) which, is also enabled when we consider the infosphere.

Ultimately, of course, times change, and will continue to, rife as they are with anxiety and potential:

“The collapse of time into a series of depthless presents and the alienation that is oftentimes considered as a result of it is far from being a done deal” (Keightley, 2012, pp. 20-21).

Although intensifying, jumbled, and paradoxical, this complex and entangled set of temporal variables in contemporary life offers us the chance to confirm McLuhan’s notion of “electric or ecological man (man of the total field)” (McLuhan, 1968, p. 156) which would be to say people of and with any and every time and temporality, and as such recalls for the author Deleuze and Guittari’s reading of J. M. W. Turner’s intensifying painterly abstraction: “[e]verything becomes mixed and confused, and it is here that the breakthrough—not the breakdown—occurs” (Deleuze and Guattari, 2000 pp. 132).
6.04. Contribution to knowledge

The project set out via nagging questions and personal notions, as well as a growing sense that while issues of time were constantly within or behind what was being discussed, time itself was rarely being discussed. In the research process, I have come to learn that this is a rich topic, overlapping upon others, therefore a literature could not be complete, and my concerns were well covered. However, while perhaps increasing in relevance, time and temporal issues appear(ed) scattered throughout LIS, rather than compiled. It is my hope that the present project goes some way to addressing this.

As suggested in my proposal, and confirmed by Haider, Johansson and Hammerfelt (2022), time as discussed in other fields can be of use to LIS, therefore certain sections and themes herein that might appear tangential remain due to the hope that they enrich the discussion and add to its dimensions.

As the project led to time within LIS, a following idea or concept of time literacy as potentially complementary to information literacies is perhaps the clearest contribution, and one I would be interested to see other propositions towards.
7. References


8. Appendices

8.01. Dissertation Reflection

I began this research with the nagging concern around time as experienced today, and the sense that issues of time are a key aspect in our work as library and information professionals.

Indeed, this theme began early on in the course as responsive thought stemming from class discussions on such things as technologies and new forms of documents, to collections management within such uncertain times and ongoing upheaval ahead of varying severities. The ‘keep up’ nature of the new millennium (perhaps not unique in historical moments of significant technological innovation, but surely unique in its force and relentlessness) radically changes our lives and so too our work in the field of LIS.

Once committed to the topic, the reading accumulated quicker than I could read it, from a number of angles and subject backgrounds, and my practice of reading felt somewhat slow and arduous, with large amounts of notes taken at any time and everywhere. These I am quite sure reiterated many things over and over in a process of both great accrual and laborious sifting towards what became the crux points of the dissertation here.

A concept of entanglement as discussed by Sharma felt particularly raw during an intense period of time including the wider scenario of the pandemic, the intensification of my own library job at an academic institution (where we now combine our previous manner and processes of working with those developed during periods of lockdown and limited access and increased online delivery), oddly difficult periods of working from home, and an unfolding dissertation process that never felt fluid and flowing. In addition, I’ve come up against my own anxieties upon academic practice; how we read and analyse and synthesise literature, and maintain research focus. And coming to a decision to attempt to sketch out both a ‘time literacy’ and be so bold to suggest time as an additional aspect to Floridi’s
concepts felt daunting. So, I can say with much certainty that the process has been wracked with many of the temporal confusions and anxieties discussed via the literature.

In reading and absorbing the cumulative literature, having come with many intuitions, personal experiences and — dare I say it — insights upon the topic (that as everyday contemporary citizens I am sure many of us have, temporalities being negotiated as we speak, as much if not more than theoretical positions and predictions), it has been difficult at points to recall in the writing what is my own thought and what is that of a source.

This has led to a lengthy, organic and fluid kind of paper whereby each section seeps into the next, though by which I may be risking academic rigour. However, in such a paper, I do also wonder how I could analyse the literature without discussing it; how discursive bridges are required to move organically from this or that reference to the next.

With the writing having to take its place around other commitments, and itself proceeding incrementally, I was unable to spend significant time editing perhaps a more successful order and thread, and discarding what may be ultimately unnecessary or tangential sections. However, much has been left out, including aspects discussed in the proposal, such as specific works of art, and notions of poetics as response to uncertain times; that had felt like they would only add to discussions while also contributing to the methodology of bricolage. This I also began to doubt as the writing built up and I wondered if I was still based squarely in academic theory (of Rosa, Tomlinson, etc), though I believe the methodology relevance in the present paper stands.

Being made aware, at the time of my topic suggestion, of the 'Time and Temporalities' edition of the *Journal of Documentation* that was in the works during 2021 validated the research concerns within my proposal. However, it was only after attempting to stop any new reading during Christmas that I came to the introductory essay for that edition, a week prior to the deadline. Being faced with what might be a far more successful, knowledgeable, and better condensed version of what I had been writing was intimidating. However, this article made clear that literature on time from sociology and media theory are of great use to LIS, and that a concern towards time today from our field is better informed by work on
the subject from other fields both overlapping or adjacent, and those perhaps less expected. This in turn adds weight to my use (to greater or lesser degree) of bricolage research, which I only recently recalled first coming across in the preprint of the ‘Reading and Temporalities’ (Rothbauer and Cedeira Serantes, 2021) article that would be in the JoD.

As suggested above, a challenge of the project has been to read enough, and then to not read too much. There is the feeling one could read much more, as each source leads to further new sources. Time is – of course – a topic with vast literature(s).

Additionally, where such a project centres on a wide, complex and essential topic, it is hard to escape the feeling of untidiness; that another month might have led to a more concise edit and thread to the paper. But, as someone said recently, our work as MA students almost certainly involves the submission of what would be a draft, if one dares imagine or consider publication options and processes. Therefore, I present to you this finished dissertation, this draft (a duality I am fine with, being a practicing artist. But I won’t go into that).

It has felt deeply worthwhile to study attitudes and concepts towards time and our experience of it, not least in order to better equip myself in a personal conscious literacy and for coping among the vicissitudes of these times, and this work will certainly continue and in various forms not purely academic, such as painting and poetry.
8.02. Dissertation Proposal

CITY, UNIVERSITY OF LONDON
MSc Library and Information Science
INM367 LIS Dissertation

Proposal for Dissertation
Tom Mason

Working title

TIMES NEW PLURAL
Immediacy, Time and Temporalities

Introduction

The dissertation project I am proposing concerns time; the experience of time within a contemporary phenomenon of immediacy and instantaneous communications via Information and Communications Technology (ICT). At the time of writing, my initial concerns are as follows:

If all human activity is embedded in time (Savolainen, 2006), and our activities can be considered both meaningful and informational – occurring in what Floridi terms the *infosphere* (Floridi, 2010, pp. 9) –, it follows that our personal and societal perceptions of time affect our activities, and vice versa. Despite the simultaneity of ICTs and cultures of convenience, why do we regularly feel we do not have enough time (or any time at all)? Why do we feel rushed, behind time, that we have wasted time (which we had so little of anyway)? Could one reason for this be that much of the ‘between’ of our activities are at timings we both accept and struggle to grasp; the instantaneous speed of information transfer, same or next-day goods delivery, as well as the seeming slowness of progress?

Our informational lives create and draw from amounts and avenues of information that our predecessors would struggle to comprehend. And we can quickly access much of it via complex personal devices interconnected within the network online. Our capability to make the most of this abundance is affected by time as it is experienced both personally and societally. As we evolve ever more according to our technologies (rather than via environmental factors and requirements or drives), so too does time evolve.

Contrasting narratives suggest a plurality of time and *temporalities* at work today, rather than a singular dominant notion. This finds us working online out of hours, sitting on public transport while
chat-messaging someone on the other side of the planet, obliged by a social media account to remember a ‘memory’; a post from some years ago. And it finds us “time poor” in an “endless present” (Carroll, 2016), with “12 years” or “18 months” to save the planet from human-caused, irreversible environmental collapse (McGrath, 2019).

The dissertation will proceed via qualitative desk-based research, with the exploration of works from academia, sociology and philosophy, cultural theory and the arts. An interweaving of these will lead to an evaluation on the topic as it has refined through the research.

The arts can provide examples of time-related thinking and reflections of our experience of time; in circulating themes and tendencies, as well as via specific works, and of course in the time involved in producing creative works; often around employment and other responsibilities which can build time to be a key relationship within the artist’s life. As a practicing artist myself, I am keen to incorporate these considerations to some degree in the dissertation.

**Aims and Objectives**

My aim is to explore the subjects set out above, and through the research begin to tease out a more specific area of focus that combines contemporary time and temporality with information, its absorption and use. This will include “time horizons” (Savolainen, 2006); the time required for information and research and one’s ability or otherwise to devote such time, in relation to broader socio-economic factors. It may also lead to time as found in the arts, and concepts and approaches to time therein that could have wider application.

I would like to produce a piece of work that is informative on a number of levels; academic, sociological, philosophical, and that touches on poetics; as a response and approach to what are both increasingly uncertain and exponentially informational times. Coming to a point in which we can consider a plurality of time and temporalities occurring, as discussed by Keightley et al (Keightley, 2012), and act within this environment – Floridi’s infosphere, if we will – seems itself a call to poetics.

This is the poetics contemplated by contemporary philosophers and theorists such as Boris Groys (Groys, 2010, pp. 16) and Franco “Bifo” Berardi (Berardi, 2018, pp. 10), relating to my interests in art as possible examples, and which I feel can be applied within Keightley’s various temporalities occurring at one time, and Reading’s “Globital time” where the in-between of time assemblages becomes crucial (Reading, 2012, pp. 150), and via these “incitements” may also include Nietzsche’s (via Deleuze) concept of the untimely, where ‘lines of flight’ in and out of time disrupt linear time and history’s trajectory (Bhowal, 2017), and which we find daily in the unfolding and morphing, ever-present and appearing nature of contemporary time(s). The struggle to truly plan ahead in a culture
of immediacy (surely unique to history and human civilization), despite the unprecedented wealth of information available, calls to a new relationship to time that may benefit by drawing from art and poetic approaches to our informational lives.

**Scope and Definition**

While my subject area is wide, as I read more the focus takes shape. For example, time should not be mistaken for speed, though the two are interrelated, particularly from modernity onwards. Immediacy is key; in terms of presumptions of access today such as ever-increasing download speeds and data allowances, the idea that ‘everything is online’, and that the online as permanent; these last two in particular are flawed notions, yet persist in the societal imaginary.

A number of keywords and terms useful in focusing the project’s scope have appeared so far in the research:

**Immediacy**: in relation to information-seeking, information availability and provision, and more general societal perceptions such as the ‘just-in-time’ which, from a philosophical angle, suggests something beyond this ‘successful’ moment of time and its overcoming. What might that be and what effect does it have on our idea of good use of time?

**Time poor / Time poverty**: as above, in relation to everyday sensations of time, the time available, the time given (to work, chores, tasks, maintaining health and fitness, rest, and what is left).

**Information grounds** (Petrigrew, in Savolainen, 2006): informational settings and environments, which can be temporal in nature, as well as permanent (libraries, for example).

**Time horizons** (Savolainen, 2006): as mentioned above.

“**Timescapes**” and “**assemblages of time**” (Reading, 2012, pp. 151): these in relation to the variable pluralities of temporalities that might make up a contemporary moment.

**Informational time**: as tending to be instantaneous with communications and data transfer, and driving what is caused by this, such as expectation upon delivery speeds of goods, “change” and “disruption”. Yet research time is also informational time, for example here in the timeline of the production of a dissertation; that there is a process requiring a number of months to complete it. The production of creative works can often only be done so quickly, and even then, requires a period—or periods—of reflection.
As demonstrated above, I would like to explore the topic(s) not only via academic LIS publications, but also works from the fields of philosophy, sociology, the arts and popular culture. My own thinking is often allied and/or spurred on via such sources and I believe a weaving of such is enriching for the topic(s) explored. Indeed, I would like to include perspectives and strategies from the arts, as the use of time is so crucial to creative practice, whether that be routine work within a specific medium, intense focus, or periods where the mind is allowed to wander freely, and such activities as doodling, automatic writing or drawing, as well as time-based work that sheds light upon the passing of time, as explored by Groys (Groys, 2010, pp. 91-93). Perhaps aspects of these can be applied by the information-seeker and/or assistant?

I am considering ways of incorporating discussion of artworks, such as Christian Marclay’s *The Clock*; “a looped 24-hour video supercut (montage of scenes from film and television) that feature clocks or timepieces. The artwork itself functions as a clock: its presentation is synchronized with the local time, resulting in the time shown in a scene being the actual time” (*The Clock* (2010 film), 2021), and a series of paintings by Laura Owens that include working clocks in them (*Laura Owens: Clocks and Clock Paintings*, 2012), among possible other examples as yet undecided, with perhaps a work chosen that involves time-based and/or remote participation.

**Literature review**

My reading so far exposes the following approaches and insights into the family of topics the proposal stems from.

Reijo Savolainen states that “all human action is embedded in time”, that time “is one of the main contextual factors in information seeking”, and “limited time horizons in everyday life tend to restrict information seeking” (Savolainen, 2006). We can apply this as affective upon our abilities to experience, absorb, reflect upon and reuse the stuff of Floridi’s *Semantic Capital*; learning, the arts, everyday information and culture (Floridi, 2018).

John Tomlinson explores the concept and experience of speed from modernity through to present times, and a contemporary culture of immediacy; ‘just-in-time’ supply and demand, short-termism, the blurring of boundaries between work and ‘free time’, and so on (Tomlinson, 2007). Unlike modernism with its mechanical speed, ‘heavy’ industry and then-societal narratives of progress and emancipation, “the condition of immediacy […] lacks such a compelling narrative” (Tomlinson, 2007, pp. 149-150). Tomlinson calls for positive effort of “being-in-the-world” rather than abstention or patience, and the work of attaining a balance that speed inadvertently compels us towards. “The intrinsic complacency of immediacy needs to be disturbed because it provides no existential resources with which to respond to the contingency of modern existence and to meet the surprises
that await us” (Tomlinson, 2007, pp. 158). A societal experience of time today runs through Tomlinson’s investigation of immediacy.

Poirier and Robinson explore the Slow movement and apply Slow concepts and practice to information behaviour (Poirier and Robinson, 2013). Slow is less about speed than awareness and the means to mediate the pace of modern life and potential information overload, as well as the quality of information sources, products, activities, and experiences (Poirier and Robinson, 2013). Slow behaviours have the potential to “provide breathing spaces outside the dominant social tempo” (Poirier and Robinson, 2013). So, we are discussing a lack of air –time and space– in the sensation of a general societal rush. “Time needs to be recognised more fully and explicitly as a factor in theories of information behaviour” (Poirier and Robinson, 2013). Slow can aid us towards “informational balance” (Poirier and Robinson, 2013). The effort required tallies with that of Tomlinson: “In an informational culture characterised by the acceleration and proliferation of information channels, informational balance is elusive and required conscious and critical effort to maintain” (Poirier and Robinson, 2013).

In Open Sky, Paul Virilio discusses “public rhythmics, the pace of public life” (Virilio, 1997, pp. 23); that instantaneous telecommunications will anchor us exclusively in the present, collapsing spatiality whilst cementing our sedentariness before the vertiginous screen of our transmissions; the “final void” of this vacuum (Virilio, 1997, pp. 33). We might contrast this with Floridi’s contemporary infosphere; more an ecosystem of relentless activity, in need of care and maturation via ethics and good-governance (Floridi, 2010, pp. 118) yes, but far from a void.

Philosopher Byung-Chul Han sees time as accelerating, but in 21st century late capitalism –or fast capitalism (Tomlinson, 2007, pp. 81)– time lacks clear direction; it is directionless (Han, 2017, pp. 5). “[...] the atomization of time, destroys the experience of continuity. The world becomes non-timely” (Han, 2017, pp. 7).

Art critic and philosopher Boris Groys chimes with Han when he writes that:

“Today we are stuck in the present as it reproduces itself without leading to any future. We simply lose our time, without being able to invest it securely, to accumulate it, whether utopically or heterotopically. The loss of the infinite historical perspective generates the phenomenon of unproductive, wasted time. However, one can also interpret this wasted time more positively, as excessive time –as time that attests to our life as pure being-in-time, beyond its use within the framework of modern economic and political projects” (Groys, 2010, pp. 90).

Groys addresses time through time-based contemporary art, and poses the idea that we might prefer to see ourselves via contemporary’s definition; with time rather than in time (Groys, 2010, pp. 94). This is to collaborate with time rather than be swamped and swept by it.
Emily Keightley writes that “media technologies seem to have made possible a new shared moment of action in time; a vertiginous togetherness [...]. It would seem the emergence of a new mediated time is a condition fraught with danger and possibility in a very real sense” (Keightley, 2012, pp. 2). Keightley seeks to explore more positive outlooks than we might default to in our sense of hurriedness. “The diverse times on offer [...] and the ways in which they intertwine to produce richly textured temporal ecologies seem to be routinely overlooked when we are dazzled by the ever-increasing speeds of communication” (Keightley, 2012, pp. 4). A number of concepts are raised. “Zones of intermediacy” are layered combinations of times and the navigation of these, which produce temporal meaning (Keightley, 2012, pp. 212). “Generous time” occurs in a “dilated present” when a plurality of experiences mesh together (Keightley, 2012, pp. 212). “[...] everyday media use [can] create alternative temporal zones in otherwise conservative arenas of temporal regulation for intimate and imaginative engagements with the time of others, in time as it is lived” (Keightley, 2021, pp. 217).

Writing in the same volume, Anna Reading posits ‘Globital Time’; “the dynamic enmeshing or rather defragging of globalisation with digitisation” (Reading, 2012, pp. 145). She references Michael Serres, critiquing our recent ideas of the network as holding to “here and there” as if separate, calling for us to “instead think in terms of ‘aqueous or airy volubility’” (Reading, 2012, pp. 150); that elements of time cause “incitements” which fold us back and forth within and upon time(s). Reading states that [analogue-] clock time could be avoided, [wearable-] watch time could be removed, whereas today’s digital time is constantly being presented to us, while recalibrating ‘behind-the-scenes’ as data moves (Reading, 2012, pp. 154). “Globital time involves continual adjustments and translations in the spaces of incitement, of interference between the axes of the assemblages of time” (Reading, 2012, pp. 161).

While Virilio’s discussion of a vertigo brought on by a culture that increases in both sedentariness and speed goes some way to outlining the modern experience of runaway technological pervasion, Keightley and Reading in particular aid in seeing possibilities, and recall Deleuze and Guattari’s reading of J. M. W. Turner’s intensifying painterly abstraction: “Everything becomes mixed and confused, and it is here that the breakthrough—not the breakdown—occurs” (Deleuze and Guattari, 2000 pp. 132).

My current reading presents diverse inroads on the subject of time today, and while perhaps preceding a refined research outcome at the time of writing, the implications for informational experience and meaningful—semantic—activity today are apparent in these readings. In finding related notions in various fields and combining them, we might bolster a concept of contemporary time as composed of varying, overlapping and influencing temporalities that unfold in contemporary experiences, intensities and stresses.
As human time evolves according to our activities, such a topic holds relevance; as stated above, our abilities to make the most of the infosphere are weighted by this experience of time, the unique plurality of temporalities occurring as and when, and the sense of time pressing.

Methodology

The project will proceed according to qualitative, desk-based research, exploring and reviewing material on the topic(s) described above, initially in an explorative fashion, and undergoing a process of directing that research as we continue.

As time is a subject both simple (in our ongoing, conscious, everyday relationship with it) and deeply complex, one could come at the subject from many angles, and via a great deal of material old and new. The methodology of desk-based research would appear to me to be suitable for the project. I am of course open to suggestion from my dissertation tutor, if it would be beneficial to include additional methodologies and approaches.

I am able to store my work as I go on personal devices; my password-protected laptop and external storage drive, as well as at my workplace on the password-protected computer that I use. I tend to print as I go, due to finding reading and editing off the physical page beneficial to my writing process.

Dissemination

As suggested in the guidance material, I am considering how to include an ongoing online aspect to my work process that creates a field of study and may draw beneficial consequences, from both those that may read and respond, and the demand on oneself to clarify or pose something at a point in time. I myself can find I am distracted from projects by processes of online sharing and promotion. However, as a contributing factor to my work this may assist me in points of focus; scheduled postings on a certain aspect or finding, and in gaining constructive feedback and alternate angles upon certain topics, thinkers or publications; indeed, further contributing incitements that spur the project along.

I would certainly make my dissertation available on the Humanities Commons repository on successful completion of the project. I would be interested in presentation at conferences and would welcome any guidance on such initiatives. I am interested in publication, of the paper or related works, though of course this is to be considered with greater clarity nearer the conclusion of the dissertation.
Work Plan

I tend to work intuitively, building up readings and notes from the research and proceeding in this manner with a project unfolding. I would perhaps benefit from some instruction on how to produce a work plan that will be of assistance to my research practice.

May: I have begun a process of conceptual and philosophical analysis on time, and am engaged in a growth of knowledge on work within the topic(s) raised. I am currently information-seeking and literature-searching, with the reading of various relevant and potentially relevant material. I have been made aware that an upcoming edition of the Journal of Documentation will be based around the theme of time so I look forward to reading the articles therein.

June, July: I will continue reading, following both references within academic articles and more. I will be compiling notes and themes will have become clearer. A literature review should begin to take shape. My intention is to have come to a more refined direction of research, with subsequent research unfolding from there. This will take place in dialogue and any necessary guidance with my dissertation tutor.

August: by this time, I should be engaging in thorough information evaluation; with refinement of source material according to relevance upon the clearer topic unearthed. An ongoing checklist of sources; their theme, angle of approach, relevance, focus and quality, should provide assistance in this.

From this point on, I would imagine to be writing more consistently, though with research continuing. I am looking forward to tutorials and group meetings with fellow students, to share the experience of our projects and gain better insight on research practice and scheduling via peer experience and tutor guidance.

A schedule of online postings as discussed above may assist, perhaps in the form of source material and questions raised by such, to myself though of course any reader, and leading to possibly useful discussions. I might begin by suggesting once a week, or something more substantial once a month.

Resources

At the present time the research resources required can be accessed via City library, as well as my workplace library at the Royal College of Art. In addition, certain works that City may not have I am
able to request, or purchase myself if necessary. I have a personal laptop, and access to printing facilities at home and work. Currently I don’t foresee needing further resources.

Confidentiality

My desk-based research and consultation of academic and other published works does not suggest confidentiality issues at the present time. I will be sure to consult with my tutor and relevant body at the University if such arise.

References


**Additional bibliography**

