

Beyond the illusion of change: bridging the ‘classroom’ and the workplace via processes of temporal re-contextualisation

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ABSTRACT

The application and use of formal knowledge in the ‘real-world’ is highly problematic. This problem is neither new nor straightforward. In practice, it is deeply embedded in issues surrounding how we value knowledge, experience reality and see time. Building on the concept of visibility this essay explores how participants on a highly ‘successful’ learning programme sought to implement their change commitments in the workplace. The process of seeing change was constantly challenging. Living ‘in’ and ‘over’ time produced a sense of temporal shock that significantly undermined well-intentioned commitments to practice within days of returning to the office. Programme success created the illusion of chance as commitments fell victim to the action, traction and distraction of post-programme chrononormality. This long-running (18 year) empirical account charts the evolution and development of a visualisation tool that sought to make temporal context visible. Facilitating temporal recontextualization, the methodology delivered significant results across a range of evaluation criteria but suffered ongoing challenges related to the appropriate levels of analysis and intervention. In a study believed to be the largest, longest and most comprehensive of its kind this pracademic perspective aims to be close to practice, practices and practitioners. It also outlines a temporal methodology of change that enables the capacity to act, ‘in’ and over time.

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I owe a deep well of gratitude to many people. To my wife, family and friends for their loving support and belief. To all the team at the IEA Paris for nurturing a very special atmosphere where creative thought flourishes, develops and evolves. Finally, to my *Impact* colleagues and the 1,800 plus participants associated with this study. Many of us tried, through this work, to make a positive difference to the future of the planet. Only *time* will tell if it mattered. This is for all of you.

High-level outline

Most of us need little reminding of how difficult it can be to practically apply new ideas, especially formal learning, at work. This field, knowledge *Transfer*, also has significant theoretical issues. Taken together, these challenges question the fundamentals of an industry that spent US\$78 billion, largely uncritically, on corporate leadership programmes during 2023. What has become known as the *Transfer Problem* has defined much of my professional and academic life.

This article seeks to craft a novel solution to issues of Transfer. It focuses on the largely hidden role of time in the application and use of post-programme commitments. Based on a multi-level process study spanning 18 years (2006 - 2024), it explores how participants (1,875) of a 'successful' double-loop learning programme (*'Impact'*) sought to apply transformative change commitments in the workplace. Highlighting Schon's (1984) distinction between the *mountain-top* and the *swamp*, it suggests that the problems of transfer are deeply rooted in how we value knowledges, experience reality and *see* time.

Weaving the central thread of visibility, the article charts the development, evolution and implementation of a visualisation tool. This tool sought to facilitate temporal recontextualisation while connecting change commitments with the flow of work. The findings were stark. They suggested a steep fall-off in the initial practising of commitments as participants returned to their workplaces (e.g. circa 40% in the first 18 days). Furthermore, the visibility of the post-programme context exposed a complex 'timescape' littered with nuanced dimensions of temporality. Here, norma-temporal practices, the dilemmas of liminality and the interactional expectations of others combined to 'crowd out' the practising of well-intentioned commitments. Overall, this produced a visceral sense of 'temporal shock' that limited the capacity to act. Overcoming 'shock' required drilling to the core of identity-laden, temporally infused practices with the aim of reshaping chrono-normative behaviours. This approach generated significant results and fulfilled a comprehensive range of evaluation criteria. There was, however, a painful sting in the tail. Issues relating to levels of analysis and intervention stalked the study. This dynamic reinforced how, as actors, we play *with* and are played *by* temporality, at every level, shaping the legitimacy and sustainability of our actions**. In April 2024, the full ramifications of this statement drew a line under the study.

What follows is a detailed empirical account of the relationship between temporality and change. The account provides a statement of record that captures the evolving processes

of understanding and use, both in and over time. It suggests that the incorporation of temporality changes the way we see formal learning - moving it from a disembodied clinical *intervention* to a liminal temporal *interruption*. The story unfolds over 4 periods between 2006-2024. It is based at a multinational energy company ('Forum') facing transformative change as it seeks to navigate the emerging landscape of energy transition. Believed to be one of the longest, largest and most comprehensive studies of its kind, the account has a strong methodological flavour. Sensitive to how we operationalise change, it focuses on the iterative detail of 'how' processes. This approach fills a much-overlooked gap for granularity in micro-orientated process studies.

The first section outlines the type of empiricism that informs my approach. As a *pracademic* this approach not only shapes how I understand knowledge and see reality it also informs the type of scholar I am and how I came to see the 'problem' underpinning this article. Each subsequent section drills into the sequenced stages of understanding and use, culminating in a brief final segment that aims to make sense of an 18-year experience.

The craft of *pracademia*: navigating the complex terrain of understanding and use

For close to 25 years, I have taught at the LSE (London School of Economics and Political Science). Here, I am a Visiting Professor in Practice of Organizational and Social Psychology - I teach a specialised MSc course aimed at bridging theory and practice by addressing emerging issues in organisational life. Alongside this, I have a non-traditional educational role - I design and deliver customised executive educational experiences for commercial organisations (Anderson & van Wijk, 2010). These experiences are usually short formal programmes aimed at the specific needs of a particular organisation or cohort (Tushman & O'Reilly III, 2007). Education is my second career. Prior to my current life, I was an Investment Banker, working for 16 years as a US government bond salesperson and a fixed income derivative structurer.

As a practising social psychologist, I operate between the realms of rigour and relevance. I straddle the settings of theory and practice (Tushman & O'Reilly III, 2007) via a 'third road' (Fukami, 2007), a mediating position that involves translating knowledge to make it contextually fit-for-purpose (Dobson, 2012). In this role, I employ strategies of re-

contextualisation (Evans & Guile, 2012) acting as a sense-giver (Sutcliffe & Wintermute, 2016), a role often described as a 'pracademic' (Posner, 2009). This space is far from unproblematic (Carton & Ungureanu, 2018). As neither a pure academic nor a full-time practitioner, it is a role that lacks a clear-cut identity (Vroom, 2007) and one that can be seen as sapping the purity of understanding from either domain. The words of an old Italian expression are instructive in capturing this tension; '*Traduttore, traditore*', every translator is a traitor (Shearn, 2016). Despite this, mediating the dual considerations of understanding and use has been the driver of my career over the last 25 years. In this space, I am both a theoretician and a practitioner of practice.

Background to the 'problem'

As an executive educator, I tend to witness a recurring phenomenon. No matter how 'successful' a learning programme has been (e.g. top evaluations), I am struck by how quickly participants seem to revert to their 'normality' egged on by the action, traction and distraction of their working lives. I often cheekily suggest that as soon as participants walk out of the classroom, I can see them *actively forgetting* everything they have learnt. This seems to strike a chord - it invariably brings a knowing, guilty smile to faces. Many of them have been in this position before, a feeling I suspect that most of us have experienced at some stage.

The challenge of post-programme application is part of a wider problem surrounding the utility of formal programme knowledge in organisations (Faragher, 2016; Graveski, 2019). In 2024, the global market for training and development was estimated at US\$354.97 billion (Research and Markets, 2024). Leadership development makes up an important segment of this. In 2023, organisations spent an estimated US\$77.9 billion on corporate leadership programmes, a figure expected to grow to just short of US\$200 billion by 2033 (Khandelwal, 2024). As organisations face complex, often existential challenges, this would appear to be money well spent (Huggel et al., 2022). That said, very little is known about the effectiveness of this investment (Baldwin et al., 2017b). This situation is not helped by opaque approaches to evaluation. In reality, most organisations only measure the 'success' of their programmes at the level of reactions and satisfaction (Murray, 2019), something with little meaningful link to behavioural change and outcomes (Saks & Burke-Smalley, 2012; Sitzmann et al., 2008). This has troubled me over the course of my career. What is the point of doing what I do if the backbone of my

approach achieves only the illusion of change? Given the expense of programmes, am I just contributing to some form of '(great) training robbery? Or, worse still, might the whole logic of leadership development be questionable? (Rock & Cassiday, 2024).

I have sought answers to this problem throughout my career. Wearing my academic hat, my first port of call was the existing literature. Surely, I said, I can't be the first to notice the issue? It soon became clear that literally thousands of articles, journals and books had been devoted to the topic area (Sitzmann & Weinhardt, 2018). What was also clear was that the 'signature' research, the 'transfer of training' literature, had produced few significant breakthroughs (Ford et al., 2018) while simultaneously achieving a state of saturation and stasis. Alongside this, alternative perspectives questioned the basic legitimacy of formal learning interventions and whether they could ever lead to meaningful change (Lave & Wenger, 1991; Wenger, 1999). Whatever the approach, there was almost no consideration for what happens *after* a formal programme (Baldwin et al., 2017a; Blume et al., 2010) - for some reason, any meaningful understanding of this context was written out of the texts. This space, the space that ultimately matters for application and use, was largely invisible.

The more I explored the problem, the more it became clear that there was an additional issue at play - something about the relationship between different types of knowledges and their contexts. Early in my research, a Special Edition of the Academy of Management Journal captured this focus on knowledge types quite nicely (Rynes, 2007). Upfront, the editors made the standard plea to contributors for articles that could improve the uptake and impact of ideas in practice. Ultimately, they noted something, however, that resonated strongly with me; the findings presented in the edition, they admitted, bore little connection to the everyday life of practitioners, especially in terms of how their methodology represented the reality of the workplace.

'The real-world of...(the) manager is messy, complex and filled with human drama, making it unlikely that it can be completely understood using 'hands off' methodologies such as surveys and archival analyses'

(Editor's foreword. Rynes, 2007)

This observation made me wonder about the characteristics of the domain in which 'formal' knowledge is generated (e.g. the classroom) and those where it is used, consumed and applied - the 'real world' (McIntyre, 2005; Vaill, 2007; Weick, 2005). Could it be that findings that are legitimately produced and presented in one context and fit-for-purpose for that context, did not *connect* in other contexts because different rules or dynamics applied? (Astley & Zammuto, 1992). Aspects of this distinction resonated with my own experience. As an executive educator, I often work closely with 'star' academics as programme faculty members. More often than not, if a scholar insists on communicating their ideas via an *academic* approach, they find it hard to connect with practitioner audiences (Markides, 2007). Far from a need to communicate *more clearly* or dumb down their content (Shapiro et al., 2007), the issue seems to touch something more fundamental - a difference in the way that knowledge is valued and understood between the academic and practitioner realms (Langley, 2019; Langley et al., 2013; Tushman & O'Reilly III, 2007).

As the years passed, I developed a hunch that knowledge produced during a learning programme changed in some way as it moved out of the classroom. I was prompted in this regard by the work of Donald Schön (Schon, 1990). Buried deep within the first chapter of his seminal work on reflective practice is a metaphor about the 'mountaintop' and the 'swamp' (Schön, 1984). Schön suggests that there is a choice to be made while navigating the mixed topography of professional practice, a choice between the hard, high ground where clarity of technical understanding is possible and the swampy lowlands where tangled messiness dominates the terrain.

'There are those who choose the swampy lowlands. They deliberately involve themselves in messy but crucially important problems and, when asked to describe their methods of enquiry, they speak of experience, trial and error, intuition, and muddling through.'

'Other professionals opt for the high ground. Hungry for technical rigour, devoted to an image of solid professional competence, or fearful of entering a world in which they do not know what they are doing, they choose to confine themselves to a narrowly technical space'

(Schön, 1984, p. 42 & 43)

This passage had a profound impact on me. It appeared to capture the essence of a longstanding dilemma in my field of practice, a choice often portrayed as a binary decision between rigour or relevance (Ghoshal, 2005; Van De Ven & Johnson, 2006). Intriguingly, it also seemed to give me a way of talking about something deep and visceral, something that I had experienced but often found difficult to articulate (Astley & Zammuto, 1992). As an academic, I had made a choice early in my career to pitch my metaphorical camp halfway up Schön's mountain - at a place where I could occasionally get a clear view but also had access to the everyday context of organisational life.

The more I considered Schön's distinction, the more I found myself returning to the implications of his parable. Often it felt that the requirements of so-called 'rigorous' quality research located high on the mountaintop, meant that an issue under investigation needed to shake off the excess baggage of contextual detail, focusing instead on a core theoretical problem (Degama et al., 2019; McLaren & Durepos, 2019). This raised a significant issue for me - it appeared that it was this very detail, the background contextual noise, that gave the swampy real-world setting of organisational life most of its meaning (Langley et al., 2013). From this perspective, the parable seemed to capture a crucial ontological and epistemological distinction between these domains while also exposing the sinewy relational tension between the 'worlds' of theory and practice. As eager academics climb the designated mountain to get a clearer view of their topic, the process of climbing ever higher appears to drive a wedge between them and the practitioners below. These practitioners are not focused on the valiant efforts taking place above them - they are engaging in the daily grind and multiple dramas of organisational life (Langley, 2019), busy throwing mud at one another (Blackwell, 2008) and desperately seeking some way of making sense of what is going on around them (Weick, 2005). Ultimately, either side becomes so absorbed in their respective activities that they lose interest in one another.

This way of thinking had a considerable impact on how I viewed my role as an educator. There seemed to be a need to take classroom knowledge and *rekindle* it in a way that was fitting for the workplace. This required adopting some form of mediating role and actively bridging knowledge between contexts (Dobson, 2012). Practically, the work of Karen Evans and her colleagues (Allan et al., 2015a; Evans et al., 2009a, 2010a, 2011; Evans &

Guile, 2012; Fettes et al., 2020) brought the changing role of knowledge(s) to life for me. Their work on recontextualisation became central to how I approached the process of programme design and delivery. That said, it often felt that I championed this position somewhat surreptitiously. In particular, any commitment to re-contextualisation competed with the powerful presence of the 'transfer of training' literature within my field (Hughes et al., 2018). As the name suggests, *Transfer* places significant faith in the predictive power of a range of variables to deliver change in the workplace (Evans et al., 2010a). In so doing, it renders the granular detail of the post-programme context almost invisible. This did not feel right to me. No matter how powerful the claims surrounding programme learning might be, learning seemed to lose its spark when it came to the messiness of application and use in the workplace.

Recontextualisation shaped me as an educator. Yet the more I adopted it, the more I felt there was something missing, something to do with the role of time. I had a hunch that programme participants returned to their workplaces and quickly became drawn into contexts that were saturated with a distinct type of temporality. Furthermore, it felt that this *saturation* was far from neutral and that it had an impact in some way on a participant's ability to practise their learning commitments (Burkeman, 2019). Most of all, I suspected that time was more than just some linear, undifferentiated backdrop to activity (Adam, 2004) - it was a rich, multiple and complex phenomenon (West-Pavlov, 2012), a phenomenon that included 'non-linear' features like interruptions (Wajcman & Rose, 2011), elements of flow (Crawford, 2016) and experiences of pace and velocity (Sharma, 2014). These features appeared to contribute to an experience of *shock* for many participants, something that had a detrimental impact on the integrity of well-meaning commitments.

Operating in a mediating space has had a significant impact on how I position myself. My work, I would suggest, fits most comfortably within the realm of use-inspired 'basic' research (Stokes, 1997). This approach aims to make a day-to-day practical contribution to people's lives while seeking to answer fundamental questions in novel ways. In being close-to-practice (Cooke, 2005), I also seek to be close-to-practices. While policy is important to me, the majority of my work is concerned with changing *practices* (Moran, 2015), those things that people do day-to-day in pursuit of their actions. In Schön's parlance, I am interested in enabling others to navigate the tangled complexity of the swamp instead of issuing proclamations from the mountaintop. The nature of my work, therefore, is about being close-to-practice, practices and practitioners.

Outline of the paper: a process approach

In this article, I argue that we underestimate the richness and complexity of the practitioner at work, particularly our relationship with temporality. I suggest that time shades our life and work in multiple, diverse forms (e.g. orientation, pace, disruption, and visibility). These *times* always say something about who we are (e.g. they are deeply identity-laden) and represent to ourselves and others what we consider to be *normal*. Deeply saturating our experiences, temporal practices become embedded in our habits and routines, enabling and constraining our ability to act.

Our relationship with temporality is most starkly visible in the wake of a formal learning programme, when participants often return to their workplace with commitments to change. I contend that these commitments most often fail because they overlook the deeply normative and symbolic qualities of time. In attempting to spend our time differently, we enter a period defined by conflict and contradiction, creating a liminal space that, in many cases, challenges who we are and what we want to do. This process is made more complex by the deeply social nature of existing temporal expectations.

The central purpose of the research was to explore what happened when participants returned to work *after* a 'successful' programme - it sought to make that aftermath visible. The study had three interrelated objectives. First, to reveal the temporal experiences of putting new knowledge to work after a learning programme. Second, to develop a practical intervention - a temporal visualisation tool - to facilitate the practising of personal change commitments. Third, to implement and use the tool, so that it could make a tangible difference to everyday workplace practices. Holding rigour and relevance in equal measure, the study was driven by the dual considerations of understanding and use.

Evidence was provided by an action-orientation case study that spanned 18 years (2006-2024). The site was a European multinational company grappling with the strategic challenges of energy transition. Central to this transformational change process was a highly-rated experiential learning programme with a 'double-loop' learning focus (Chaturvedi, 2021).

The study employed a range of methods and was underpinned by a detailed ethnography, e.g. I physically 'lived' at the company for a total of 356 days, 24 hours a day, between 2006 and 2018. The primary output of the study was a visualisation tool that sought to chart the temporal topography (a '*timescape*') experienced by participants after the

programme. Recontextualisation framed data capture, analysis and representation while Process methodology supported the development of the tool over a 5-year period (2012 - 2017), as well as its use, evaluation and testing during implementation (2020 - 2024). Ongoing cycles of feedback, reflection and reflexivity contributed to the evolving shape of both the programme and the research - this process covered 75 separate programmes, with 1,875 participants, between 2006 and 2024. The conceptualisation of a programme participant was ultimately informed by a modified symbolic interactionist approach.

The findings were stark. They suggested a steep fall-off in the practising of commitments as participants returned to their workplaces (e.g. a 2-point fall in satisfaction with practising - on a scale of 5 - in the first 18 days). The periodicity of the post-programme context (the 'timescape') was punctuated by a series of distinct stages, each saturated with complex dimensions of temporality. Here, norma-temporal practices, the dilemmas and contradictions of liminality and the interactional expectations of others combined to 'crowd out' the practising of well-intentioned change commitments. Overall, this produced a sense of 'temporal shock'. The use of the tool appeared to offset this - it produced significant results over five pre-defined evaluation criteria (satisfaction and engagement rates, behaviour change, change stories and revenue contribution). The tool was submitted for an industry-led excellence award in 2020 (Brandon Hall Global Excellence Award). It won a gold award, achieving the perfect score of 30/30.

There was, however, a painful sting in the tail of this 'success'; in particular, the tool struggled when it came to its application in the 'real world'. This contributed to a shift in methodology, a resolution that could only have occurred by recognising the pliability of validity between different contextual settings (Wefald & Downey, 2009). It also touched fundamentally on the relationship between time and different levels of analysis, understanding and use. Ultimately, navigating these temporal tensions would herald the end of the study in April 2024.

The essay provides a detailed statement of record of this long-running study. It draws heavily on previously unpublished material (Rogers, 2020) - work that has been reshaped, extended and reinterpreted during my time at the IEA. The document is limited in its scope. In focusing on the role of time after formal programmes, it excludes consideration of a range of other topic areas, e.g. the role of programme content, pedagogy or other dimensions of context (e.g. space). The intention is not to underplay any of these but rather to prioritise and underscore the neglected role of time.

The paper is formatted to highlight how understanding and use unfolded in an iterative fashion over time. Multiple 'failures' and 'successes' embedded within ongoing loops of reflection and learning contributed to the 'final' finished output. These periods are segmented into sections, each loosely associated with a stage of understanding and use - this underpins the process nature of the work. Much of the content is strongly methodological in character. In seeking to provide visibility to the post-programme context, it focuses on understanding the 'how' as well as the 'what' that lies behind the *process* of exploration. It also recognises that visibility is sold short by the restrictions of written text (Davison et al., 2012), the narrative is therefore accompanied by a comprehensive set of visualisations within the appendix.

Living *in* and *over* time has wider implications, many of which I did not expect when I first started the study. It challenges the worth of a US\$350 Billion Learning 'industry' that pays little heed to the application and measurement of its core *offering*. It also highlights the role of temporal context on agentic individuals and the extent to which agency is compromised by the diminishing gap between stimulus and response. This has profound implications for our ability to reflect, learn and act. The limitations of space prohibit a wider discussion of these implications - they will be covered comprehensively in a separate follow-up document.

Finally, this work has a distinct personal quality. As a researcher and practitioner, I was a central character in this story, and it would be wrong to write myself, in some disembodied fashion, out of the text. For this reason, much of what is presented is in the first person. While this may, on occasion, feel awkward to traditional academic audiences, I have sought to maintain high standards of academic integrity and rigour throughout. In doing this, elements of description, analysis and discussion are integrated to maintain the unfolding flow of the process structure. I have also tried to maintain affinity not just to *what* I knew but also *when* and *how* I knew it, so citation, in most cases, reflects the state of knowledge at a particular point in time. The challenges of this format mean, I suspect, that multiple omissions, oversights and shortcomings have crept into the text. I apologise in advance for these, and in the spirit of collaborative endeavour, I look forward to collectively iterating to a better place of understanding and use over time.

2006 - 2012: The complexity of context - creating the *successful illusion* of change

Let me start by saying something about the context in which this study took place, e.g. the company *Forum*, the learning programme *Impact* and the challenges the programme sought to address.

Too often, context is presented in research studies as an undifferentiated blank sheet (Baldwin et al., 2017a). This is neither helpful nor realistic. The granular, fragmentary detail of organisational life makes up the canvas on which activity is written (McLaren & Durepos, 2019). This canvas is the surface upon which the output of formal learning programmes, participants' change commitments, seeks to write a different story, both for themselves and their organisation. It is important, therefore, to describe the nature of this canvas as it both enables and supports a certain way of operating. That said, this canvas also channels and constrains activity via an invisible sub-structure that is often resilient and impermeable (Lahlou, 2024). This is a significant problem for the output of formal learning as it can create *the illusion of change* - a belief that something has been done to bring about change, but there is no meaningful evidence that visible change has occurred. This issue of visibility, in multiple forms, loomed large over the course of the study.

In 2006, I attended a meeting at a leading international energy company to discuss how the company might approach changing their assumptions around shaping commercial value (Argyris, 1977). As someone with a financial background, social psychological training and a keen interest in climate change, I found this conversation fascinating. A long-term interest in energy transition meant that I saw this potential engagement as a chance to have a front-row seat in making a difference to the future of the planet. As the opportunity developed, it became clear that the suggested approach to change was primarily micro in nature. Central to this was a belief that key actors and small groups would operate organically from the middle of the organisation to bring about change (Lüscher & Lewis, 2008). This, I felt, was a sensible strategy. I had confidence that the logic of climate science provided compelling momentum behind the need for the energy transition. Alongside this, I saw an opportunity to provide the behavioural architecture to equip key actors in reshaping the mindset of dealmaking around transition. In December 2006, I accepted the position of Lead External Faculty for a flagship learning programme to drive the initiative.

Forum: a company facing disruption

'Forum', a pseudonym employed for this article, is a European transnational corporation in the global energy business. Established over 100 years ago, it is a household name operating in over 70 countries and employing close to 95,000 people.

For most of its existence, the company has been a market leader in its field. This position of dominance has been achieved primarily due to its technical capability, market knowledge and global network of businesses. In recent years, the company has experienced significant changes in its commercial and competitive environment. Volatility in commodity prices has impacted its profitability, while shifts in digital technologies have disrupted many aspects of its business model. Most of all, the ongoing process of energy transition has threatened Forum's licence to operate at multiple levels. These factors have made it increasingly difficult for Forum to execute the type of commercial deals it needs to operate successfully as a company.

In 2007, senior management at Forum took steps to guarantee its long-term survival as a company. It set up an internal, business-led *Academy* to formally equip its front-line professionals for a very different commercial setting. The *Academy* set out four parameters to underpin its approach to change. First, *transformation* - a belief that change would challenge established ways of thinking and that this shift would have significant implications for how Forum's employees operated. Second, *value* - the need to understand 'what really mattered' to Forum and its expanding, increasingly diverse, stakeholder base. Third, *critique* - the need to challenge deep, taken-for-granted assumptions surrounding the relationship between Forum and its stakeholders. Finally, *doing* - the need to ensure that changes in thinking are linked to changing behaviour and application in the workplace.

In 2007, the *Academy* set out plans for a learning programme (*Impact*) that would spearhead the process of change within the company's senior deal-making community. *Impact* became the learning programme underpinning this study.

A transformational learning programme: *Impact*

Impact is a double-loop learning programme that aims to challenge assumptions around value and stakeholder engagement (Chaturvedi, 2021). The structure of the programme has evolved significantly since its inception. Between 2007 and 2010, it operated as two 3.5-day face-to-face modules with a six-week break between each leg. In 2010, the Programme integrated its core components into one 5-day face-to-face module, which was

slimmed down to a 4-day structure in 2015. In the wake of COVID-19, the programme adopted its current form: a 10-week virtual design.

Impact has a strong experiential character, placing a premium on contextualisation and relevance; it combines pre-programme, 'face-to-face' and post-programme activities. The face-to-face component (carried out virtually via Teams) is based on two, rolling customised simulations that extend over 18 time zones. The programme has three key 'content' themes: challenging assumptions ('orthodoxies'), appreciating perspectives of value and shaping purposeful relationships. With a strong 'open-skill' orientation (Blume et al., 2010), the programme provides participants with the flexibility to develop their specific needs within the broad conceptual parameters of the three content themes. These parameters provide the backbone for the experiential simulations, which employ a group of 7 actors, the majority of which have been engaged with the programme since its inception. The nature of the simulations reflects live, visceral scenarios that test and challenge participants' abilities to shape deals in rapidly changing settings. The overall driver of the simulations, and the programme in general, is to enable change in the workplace and achieve the wider goal of broadening perspectives on value.

From the outset, Forum management required *Impact* to be robust both from a practical and theoretical perspective. Over the years, this approach crystalised into an informal set of beliefs underpinning *Impact*'s design and delivery. These held that change is a function of both the person and their context (Lewin, 2007), that the changes facing the typical *Impact* participant often have transformative identity implications (Mezirow, 2009), that transformative change involves a range of conflicts and contradictions (Engestrom, 2010) and that these conflicts require deep, taken-for-granted assumptions ('orthodoxies') to be challenged at multiple level. Finally, there was a belief that learning and activity is not just an individual act - it requires wider social support and scaffolding (Daniels et al., 2007) as knowledge moves from the classroom to the workplace.

Impact participants: a complex change profile

Impact participants are experienced commercial dealmakers - employees who organise, structure, and negotiate the large-scale transactions that shape the direction and future of their businesses. The typical participant profile is usually mid-career (35+ in age), male (60%), with a strong technical background and high level of academic achievement (many to doctoral level). Participants are drawn from across Forum's businesses and are required

to have a minimum of 5+ years of deal-making experience. Registration is by nomination after a rigorous selection process. In general, participants would typically be described as knowledge workers (Newell et al., 2002). At Forum, the nature of business knowledge tends to be highly technical and strongly quantitative.

Two aspects of the typical profile make change a multidimensional experience for participants. First, the majority of participants are facing career transitions that often involve significant 'threshold' changes in both their work and life (Donovan, 2017; Vidal et al., 2015). Second, the nature of a mid-career change journey, similar to many complex organisations, is not clear-cut (Sullivan & Al Ariss, 2019).

At Forum, many participants start in specialist technical roles where the focus is primarily on individual performance, expertise and output. At this stage, they are often highly task-focused and work under close direction and supervision (Bass, 1990). Transitioning into a leadership position usually requires a qualitative shift in mindset, behaviours and focus (Lord & Hall, 2005). This shift often brings greater people responsibilities, as well as enterprise-wide decision-making. At Forum, it also tends to require greater relational focus, both inside and outside the organisation. This can make mid-career change extremely challenging (Goldsmith, 2008). Mid-career is usually defined as a period of intra-career role adjustment (Grady & McCarthy, 2008). During this period the meanings an individual holds about who they are and what they do can change substantially (Ibarra, 2004, 2015a), questioning how they and others see them (McMahon & Watson, 2013). This can have significant implications for their personal and social identity (Grint, 2005). It can be further complicated by the ambiguity surrounding the nature of transitions (Caligiuri & Tarique, 2012; Mendenhall et al., 2012) with executives moving to lateral roles, e.g. running a different business as a 'stretch' assignment (Whitepaper & Macaux, 2010). These are often *not* presented as a formal transition and lack much of the structure and symbolism surrounding change, e.g. labels, rituals and artefacts (A. Smith & Stewart, 2011). This is a challenging mix to roll into any change journey!

Programme participants were not the only parties implicated in the change process at Forum (Crane & Ruebottom, 2011). A broad range of stakeholders formed a complex, relational web around both the programme and the research. These stakeholders included the likes of Human Resources, Learning & Development, teaching faculty, line managers and sponsors (Guerci & Vinante, 2011; Janmaat et al., 2016). The differing perspectives of this diverse grouping meant that the multiplicity of ongoing activities related to both learning and research, could never be fully divorced from the question of underlying

interests and politics (Alvesson, 2011). As lead faculty (2006 to 2024), I was also a key stakeholder. As principal programme designer and orchestrator, I taught individual content segments and was responsible for the overall programme narrative and structure. Significant aspects of stakeholder management also fell within my remit. My career profile was helpful in this regard. The 'hard' quantitative and technical skills from my role in financial services alongside the 'soft' qualitative and relational aspects of social psychology were seen as a relatively rare combination in an educator and something that potentially enhanced my credibility in front of *Impact's* participants and stakeholders.

The role of commitments: linking the mountain top and the swamp

When setting the programme objectives, Forum management stressed the need for classroom learning to translate into workplace activity. Central to this was the role of post-programme commitments.

A commitment is defined as 'a promise or firm decision to do something' (Cambridge English Dictionary Online, 2019). Similar to other programmes, a participant makes some form of change commitment during *Impact* - a statement of their intent to do something different when they return to the workplace (Goldstein & Ford, 2001). This statement is usually linked to a prior area of development (Quiñones, 1995) and elaborated within an action plan (Kirkpatrick, 2019). This plan is often structured on a S.M.A.R.T. basis, something that is Specific, Measurable, Achievable, Relevant and Time-bound (Phillips, 2012).

Change commitments are worth little if they are not practised in a deliberate and consistent fashion (Ericsson et al., 1993). Practising is defined as the ability to 'perform an activity repeatedly or regularly in order to improve or maintain one's proficiency' (*Lexico*, 2019). The role of practising has a long and contested past. The debate about the role of innate qualities (Galton, 1869) or trained ability (Thorndike, 1912; J. B. Watson, 1930) is long-standing and well-rehearsed. More recently, a body of literature has championed the need for deliberate practice in order to achieve expertise across a range of domains (Ericsson & Pool, 2016). This suggests that accumulated levels of practice over time account for individual differences in performance and expertise (Macnamara et al., 2016). Many of the headline claims associated with this

literature have fuelled popular beliefs about the power of sustained practising (Dubner &

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Levitt, 2010; Gladwell, 2009; Syed, 2011). One, the '10,000-hour rule', suggests that it takes 10,000 hours of practice to become an expert in any particular field (Ericsson et al., 1993).

Like most formal programmes, sustained and deliberate practising of commitments provided a significant challenge for *Impact*. At the root of this challenge lay a lack of understanding and visibility about what *actually* happens to change commitments once participants return to the workplace. To address this, Forum offered one-to-one external (consultant) coaching to participants and encouraged support from internal line managers. One-to-one coaching has become increasingly popular in corporate settings (Grant, 2014). However, with mixed evidence surrounding its impact and effectiveness (Lawrence & Whyte, 2014), coaching can be seen as an expensive add-on to formal programmes (Meuse et al., 2009).

The problem with the *visibility* of a problem!

By 2012, *Impact* had become the top learning programme at Forum's Academy. Two success measures were central to this - ratings for programme 'satisfaction' as well as 'commitment to apply'. Across the year (2012), the average satisfaction and commitment scores never dipped below 4.7/5 (5 = Highly Satisfied/Committed to apply). Programme scores were reinforced by qualitative feedback that regularly described *Impact* as the most significant learning programme experienced by participants (either inside or outside the company). Finally, *Impact* was routinely oversubscribed with, on average, a one-year waiting list.

This leads to an obvious question - what was the problem the study was looking to address? One of the biggest issues over these early years (2006 - 2012) was the ability of Forum management to (literally) 'see' a problem. For many Forum colleagues, and arguably most of the organisations in which I have worked, there *was* no problem. The programme was popular, highly rated and had a strong, positive reputation amongst its stakeholders. But this did not feel right. In my mind, *knowing* after a 'successful' program did not necessarily lead to *doing* in the workplace; it felt like there was something deeper at play, something that precluded an automatic link between knowledge and action. I needed to investigate this more widely.

2006-2012: The dark shadow of Transfer - exposing the roots of the problem

My first port of call in seeking to explore the problem was the existing literature. Between 2007 and 2012, I undertook a review of the literature relevant to the field of learning application and use. This review covered over 1500 works across a range of perspectives and disciplines. As I progressed, an issue emerged around the theme of *visibility*. This theme appeared to be related in some way to the dominant lens employed within programme learning, a lens that tends to support what is known as a 'Transfer' mindset, an understanding that knowledge acquired in the classroom transmits in a single movement to the workplace (Evans et al., 2010b). Transfer, as I would find out, casts a long and dark shadow over the ability to see a problem with application and use.

Transfer of training: the dominant learning logic

As a working definition, the transfer of training - referred to here as 'Transfer' - has two key dimensions (Syrek, Weigelt, Peifer, & Antoni, 2016). Firstly, *generalisation*; is how knowledge and skills acquired in a learning setting are applied in different settings and/or situations. Secondly, *maintenance*; is the extent to which changes that result from a learning experience persist over time. Transfer research focuses on those factors that are believed to influence, and predict, the generalisation and maintenance of learning (Vandergoot et al., 2019).

Transfer has had a long and troubled history. Despite an extensive literature, what has become known as the Transfer *problem* is longstanding and enduring (Barnett & Ceci, 2002). From an early stage, the field has been characterised by definitional ambiguity, methodological confusion and measurement challenges (Baldwin & Ford, 1988). Inconsistent and conflicting findings have proved highly problematic, impacting the perceived credibility and usefulness of the approach (Banks et al., 2016). Almost mantra-like, it has become commonplace for academic articles to start with a mention of the 'transfer problem' (Nafukho et al., 2017). Disenchantment with the field has grown in recent years with a belief that investigation of core topic areas has reached stasis and saturation (Bell et al., 2017; Ford et al., 2018).

Exposing the fault lines in Transfer's logic

Many of Transfers' issues are deeply rooted in its methodology. Underpinned by substance metaphysics (Hernes & Maitlis, 2010; Malloch et al., 2010), Transfer presents an understanding of reality that views discrete entities as the fundamental units of existence (Whitehead, 1979). This perspective conceptualises entities as 'forms' composed of a-priori properties that largely maintain their substance over time (Rescher, 1996). Under these circumstances, change does not unduly effect the underlying essence of forms (Tsoukas & Chia, 2002), and the externalities of context are reduced to the level of background noise and interference (Burke et al., 2009). Here, producing the 'transfer ready' trainee is a little different from generating any other form of fit-for-purpose functional object (Weiss & Rupp, 2011).

Tied closely to substance ontology is the logic of variance theorising (Mohr, 1992). Variance seeks to explain differences in a given variable by changes in another or other variables (Hernes & Maitlis, 2010). This leads to a methodological preference for 'what' questions (Ortiz de Guinea & Webster, 2014), supporting a paradigmatic approach to knowledge (Bruner, 1990, 1991; Polkinghorne, 1988; Tsoukas & Chia, 2002) where knowing is a function of defined, limited relationships. Variance impacts how reality is represented - much of what happens above, below, before or after the relationships of variance goes missing. Under these circumstances, the richness of the everyday practice experience is rendered largely invisible. This is particularly the case in the treatment of time. In the quest for empirical regularities, variance tends to abstract temporality out of the description of organisational life, producing what Langley has called 'timeless propositional statements' (Langley et al., 2013).

In recent years, a group of leading scholars have called for an overhaul in the *approach* to Transfer (Baldwin et al., 2017a). In so doing, they have highlighted a range of issues that act as fault lines in Transfers methodological logic. At the most basic level, they suggest that studies rarely present adequate information on either research subjects or their contexts. Throughout the literature, it has become commonplace for Transfer studies to reduce the description of participants to brief, often formulaic profiles - subjects that seem to fall from a 'trainee bin in the sky' (Campbell, 1971) into homogenous, undifferentiated contexts. This is highly unrealistic. As evident at Forum, learning programmes, their participants, and settings are hugely diverse. Alongside this, programme participants are not automatons - they always have some element

of *active* participation in their learning (Bell et al., 2017; Bell & Kozlowski, 2008), a feature that opens up a range of implementation choices in the workplace (Huang et al., 2017).

The nature of research questions is also an issue for Transfer, with most studies seeking to answer 'what', as opposed to 'how' questions. *What* questions are crucial in highlighting big-picture, macro relationships that form the backbone of traditional scientific knowledge. That said, they are often of limited use when addressing the contested granularity of change in everyday micro contexts. This is the level at which research is most useful to everyday practitioners; those who may know *what* to do but not *how* to do it. Focusing on 'what' also renders an incomplete account of temporality as it overlooks how embodied individuals *actually* behave not just over but also 'in' time (Ployhart et al., 2002). Here, time is an active, foreground ingredient in learning and implementation processes (Mintzberg, 2008), an experience that has become significantly more intense for knowledge workers in recent years (Porter & Nohria, 2018).

As an approach, Transfer is beset by challenges of measurement. Once again, this is an issue intimately related to methodology. Establishing an isolated link between variables, however interesting, can feel remote to the experience of practitioners, who most often experience these variables in combination with multiple other features (Baldwin et al., 2017a). This highlights the issue of holism and how achieving 'scientific' validity can seem at odds with its 'real-world' counterpart (Wefald & Downey, 2009). This distinction between different 'thought worlds' (Cascio, 2007) defined the work of F.J. Roethlisberger (Vaill, 2007). Dedicating his career to what he called the *elusive phenomena* (Roethlisberger & Lombard, 1977), Roethlisberger concluded that the realms of theory and practice often had different knowledge relations to a phenomenon and that these relationships had different temporal characteristics. This meant that the same phenomenon could (and would) be valued differently in either realm (Cascio, 2007; Wefald & Downey, 2009). Resonating more closely to a flow-like understanding of the practice setting (Heidegger, 1978; Winograd & Flores, 1986), this has the effect of divorcing much of what is produced by Transfer research from the wider picture it seeks to portray. Under these circumstances, researchers can become a bit like brick-layers, narrowly focusing on individual bricks while losing sight of the structural integrity of the overall wall (Forscher, 1963).

Measurement is not just a conceptual issue for Transfer - it is also highly problematic when Transfer logic is applied in practice (Murray, 2019). This issue is highlighted by the

most common evaluation model employed for formal learning - the Kirkpatrick approach (Kirkpatrick, 2019). Kirkpatrick suggests that programme learning can be evaluated at four levels. Level I measures affective and attitudinal responses ('Reactions'). Level II focuses on what has been learned and acquired in terms of knowledge ('Learning'). Level III evaluates the extent to which participants apply their learning on-the-job ('Behaviour'), while Level IV seeks to capture organisational outcomes ('Results'). Routinely, the majority of organisations only measure formal learning at Level I or II and very rarely at III and IV (Blanchard et al., 2000; Sitzmann et al., 2008). This is highly problematic as there is little evidence of any relationship between programme reactions and the delivery of results and outcomes in the workplace (Saks & Burke-Smalley, 2012).

Finally, the role of temporality is largely missing from dualistic accounts of Transfer (Sandberg & Tsoukas, 2011). This was something that resonated strongly with me in the early days of the study. In particular, it appeared that the experience of temporality seemed to have a significant impact on the character of knowledge valued in practice contexts (Weick, 2005). Recognising a link between knowledge and temporality suggested that the relationship knowledge has with any given phenomenon can differ across contexts. What seems entirely reasonable in one setting (e.g. during a learning programme) may not be the case in another (e.g. the workplace after the programme), implying that 'knowledge' from one context needed to evolve and change in some way to be fit-for-purpose in another. This suggested that all knowledge has a context (Bernstein, 2000), and for knowledge to be useful in any specific context, it needed to be recontextualised (Allan et al., 2015a; Evans et al., 2010b; Evans & Guile, 2012). This moved me from the consideration of knowledge as a single and unitary concept to something that is multiple and contextual, a point recognised in recent Transfer thinking (Baldwin et al., 2017a).

Recontextualisation: a mediating approach

Challenging the fault lines in Transfers methodological logic demanded a new way of thinking about programme learning and application. Between 2010 and 2012, I gradually adopted recontextualization as the core theoretical framework both for the programme and, as it developed, the formal study. This became a platform for addressing the five issues highlighted above.

Recontextualisation suggests that knowledges play out in different ways, in different contexts (Evans et al., 2010b), and as a consequence, *concepts* need to change as they move from one setting to another (Bernstein, 2000). Evans et al. (2010, p. 246) have identified four key processes of re-contextualization (content, pedagogic, workplace and learner recontextualisation), each with strategies that facilitate putting knowledge to work (Evans et al., 2009b).

Overall, I was hopeful that I had found a way forward with Recontextualisation addressing many of the shortcomings of Transfer. It repositioned *acquiring* learning from a single, simplistic movement to the realm of ongoing processes where context is recognised and actively navigated. Helping to avoid either/or dichotomies, it also kept the active individual visible in their social setting. Here, the nature of this individual is not some bland substance (Weiss & Rupp, 2011); she is an interacting, embodied actor, someone with a biography and history that is always embedded in context (Hosking, 1991; Morley & Hosking, 2003). This individual has multiple roles in their daily life, operating on stages defined by both front and back-stage elements (Edgley, 2016; Goffman, 1974, 1990; Goffman & Berger, 1986; Rosengren, 2015). Crucially, the approach captured the distinct ontological and epistemological characteristics of the workplace setting, something largely invisible in Transfer (Blume et al., 2010, 2019). It also made visible a range of actors with a stake in the wider processes of re-contextualisation. Now, programme design and delivery shifted from a formulaic, value-free activity (Shinall, 2012) to something deeply relational and steeped in contested choices. This was far closer to the reality I encountered in everyday practice.

Central to recontextualisation's appeal was another feature that resonated strongly with me - the role of process. Process perspectives are systems of ideas that explain how a phenomenon develops, evolves and unfolds over time (Ven, 2007). Supporting a worldview that has interaction at its core (Shotter & Tsoukas, 2011), process rests on a relational ontology (Hernes & Maitlis, 2010) where *things* have meaning relative to other *things*, e.g. not in their inherent substance. This challenges dualistic understandings of change (Kotter, 1990; Kotter et al., 2011) where entities are seen as separate, discrete, and 'acted upon' by some exterior force (Seibt, 2020). As such, process tends to focus on the *journey* to an eventual outcome, exploring 'how' as well as 'what' questions (Langenberg & Wesseling, 2016). It implies an interactive, two-way relationship between 'variables' - an approach that shifts the understanding of a phenomenon from *being* to *becoming* and avoids the 'fallacy of misplaced concreteness' (Whitehead,

1979:2). Process sees manifestations of substance as inherently contingent, temporary, and

constantly in the making. No fixed external point outside the process influences this dynamic (Gergen, 2011; Shotter, 2012) - the plurality of change is located within the process itself (Hernes, 2012).

Despite its attractions, recontextualisation, like Transfer, had an issue incorporating temporality as an active ingredient of change. This, once again, felt uncomfortable. It also highlighted two key questions for me. If time was so important in my analysis, what did I actually mean by the use of the term, and practically, how might an understanding of temporality be incorporated into a workable recontextualisation approach? During this period, a saying often attributed to Albert Einstein kept coming to mind - 'Time is what the clock says'. This seemed to touch on something quite profound. It intimated that the representation of the mechanical clock, a view of time that is quantitative, linear and exact, has become so familiar that it is often difficult to conceive of 'time' in any other way. I felt that this underplayed the richness of how we experience time, especially temporality at work. I needed a way of thinking and talking about time that did justice to this richness - to do this, I had to look backwards before I could look forward.

Seeing temporality: linear and non-linear time

For millennia, our ancestors tracked solar and lunar cycles (Stix, 2002). In the thirteenth century, the invention of the mechanical clock changed all of this (Landes, 1983) - overnight time literally lost its fluid, cyclical quality, and the introduction of a standard temporal unit heralded an era of increasing precision and standardisation (Castree, 2009). Industrialisation saw the mechanical clock become the root metaphor for efficiency and performance (T. Watson, 1995) and, with this, the organising principle of a new modernity (Winner & Mumford, 2010). This framing supports our contemporary understanding of time as absolute and objective - a singular, external concept that is precise, measurable and linear (Bunnag, 2017).

The concept of linear 'clock' time is deeply embedded within organisational life (Sharma, 2014). For many, the working day is a constant stream of tasks, meetings and commitments that need to be squeezed into busy, fast-moving schedules (Mintzberg, 2008). In an era of connectivity and knowledge, the central role of the mechanical clock has been reinforced by other forms of temporal management, most notably the mobile phone and the electronic diary (Ojala & Pyöriä, 2018; Stieglitz et al., 2015).

Ways of seeing are often ways of not seeing (Berger, 2008; Morgan, 1997), and how we frame time is no exception to this. Broader understandings of time are characterised within the literature in a variety of different forms, e.g. qualitative (Hassard, 1991), social (Moran, 2015) or non-linear time (Crystal, 2001; Sleek, 2018). For clarity, I refer hereafter to this broader understanding by the last of these, 'non-linear' time.

Non-linear time has multiple, diverse facets (Cipriani, 2013). Less clear-cut than its quantitative counterpart, it is open to interpretation at many levels. At an intra-individual level, it may focus on how time is impacted by our biology (Wright, 2002) or personality type (Myers & Myers, 1995). From a social perspective, it can relate to the effects of generation, gender (Kleinman, 2009) or culture (Levine, 2006). It can also play to the situated and subjective processes that impact the perception of time (Flaherty, 2000) or highlight the societal experience of time as interruptive or disruptive (Newport, 2016). These understandings shift the underlying metaphors of time from exacting linearity towards cyclicity, rhythm and flow (Crawford, 2016). They move us away from efficiency, performance and use towards a wider focus on meaning and symbolic sense-making (Flaherty & Fine, 2001). All the while, time shifts from a singular, passive concept to one that is multiple, varied and active - from time to *times*. This, I felt, was the type of temporality I *saw* operating in everyday organisational life. But recognising this was not enough; I needed to move beyond the conceptual and, most of all, be more specific about the practical dimensions underpinning this broader understanding.

Dimensions of temporality

During this period, an in-depth review of the literature highlighted five dimensions of temporality that appeared to form part of a wider 'timescape' associated with the application and use of formal knowledge (Adam, 2008). I came to describe these dimensions as Temporal Orientation, Visibility, Velocity, Density and Interruptions.

Orientation highlights the directional preference associated with an action (Bugaric, 2019; Park et al., 2016), e.g. a tendency to associate greater value with the past, present or future (or any combination thereof). Arguably, the post-programme setting represents a special case of Kierkegaard's maxim of 'living forwards' (Ree, 1998). This dynamic goes to the heart of the valuation equation in finance, e.g. an organisation's worth being the present value of all *future* cash flows (Berk & DeMarzo, 2013). Via this frame, minimal

value is placed on past events, and time becomes an open-ended orientation towards an emerging future (Mintzberg, 1980).

Visibility captures the level of felt certainty in the general temporal setting. Many organisations operate in a commercial and competitive environment that is increasingly volatile, uncertain, complex and ambiguous (Euchner, 2013). This feeds a mindset of temporal fragility that can seep into everyday organisational life (Horney et al., 2010). In doing so, it often undermines the efficacy of past knowledge, focusing instead on immediate and forward-looking possibilities (Horney & O'Shea, 2015).

Velocity captures the perceived pace of a temporal setting (Boersma, 2016). For many, the ubiquity and pervasiveness of information and communication technology have contributed to a belief that organisational life has accelerated in recent years (Wajcman, 2015). This can have significant implications for the relationship that many workers have with knowledge, e.g. to what extent is there time in the working day to think and reflect, and when thinking does occur, what sort of knowledge is valued? (Basar et al., 2015).

Density captures how time is employed and used (Coffé, 2015). Central to density are meetings - these constitute a significant feature of organisational life for knowledge workers (Perlow et al., 2017; Scott et al., 2012). Meetings can be face-to-face or virtual, formal or informal, internal or external. In many cases, the scheduling of meetings is not within the control of the individual worker - electronic diaries are often open and transparent to colleagues to schedule meetings as they see fit (Cross et al., 2016). This can raise serious questions about how time is used (Wajcman, 2018). To what extent are workers pulled along by the relentless momentum of packed meeting schedules? How are these meetings linked to habitual behaviour and automatic thinking styles? Ultimately, where is the time to practise new learning commitments if no 'space' is available?

Interruptions capture the range and variety of disturbances experienced in a work setting (Leroy & Glomb, 2020; Puranik et al., 2020). Whether physical (e.g. a tap on the shoulder) or virtual (e.g. checking email) interruptions represent a growing literature in philosophy (Gibbs, 2010), social psychology (Christianson et al., 2008) and learning (Jarvis, 2010). This growth is not without cause. Through the use of information and communication technology, many workers find themselves operating in multiple workspaces simultaneously (Crang, 2010), something that has significant implications for concentration, focus and attention (Leroy, 2009).

While these dimensions were useful in shaping a broad understanding of time, a significant question remained outstanding for me. I wondered how these times exhibited a hold over our working lives, and especially our capacity to act and change? Anecdotally, I started to ask participants on my programmes about the obstacles they encountered implementing their commitments - time, in its multiple forms, always seemed to be a part of the responses. In 2011, I decided to test this hunch more systematically. To do this I ran a short, simple experiment on the final afternoon of programmes I was facilitating. I gave each participant a small cardboard box and asked them to answer one question. 'What normally gets in the way of practising your change commitments after a programme?' I then asked them to write their immediate thoughts on each side of the box (8 responses). Across 45 separate exercises in different organisations, time made up over 40% of the responses, the largest single category recorded. This exercise was repeated in a variety of settings over the next 7 years.

One final question remained. How did these times manifest themselves in everyday life? A route to answering this appeared to lie in the role of practices. Moran (2015) suggests that temporal experiences are more than abstract phenomena; they represent enacted, material practices that organise the social functions of temporality (Moran, p. 289). This way of thinking was a breakthrough for me. *Seeing* time as social practices made it accessible and relatively easy to comprehend. This addressed a recurring challenge faced when researching time - how can a respondent talk about something so rich and deeply experienced but simultaneously abstract and invisible? (Levine, 2006). The five temporal dimensions, linked to social practices, became a way for me to think and talk about time in a tangible manner.

So, where did this leave me? As I stepped beyond the shadow of transfer, recontextualisation became the central theoretical frame for the next stage of the study. This approach was supplemented by an understanding of time - linear and non-linear - based on five temporal dimensions. These dimensions came together to portray the post-programme context as an active *timescape*, a context where learning commitments competed to take hold on a canvas already defined by embodied temporal practices. This felt like progress.

But now I had a niggle that would not go away. How could I practically do something with this novel conceptualisation? Sitting in front of people and lecturing them about the role of times, no matter how interesting or insightful, did not feel as if it would make a lasting difference. I started to think about a central conceptual thread of the research -

ways of seeing. If the underlying problem was in some way related to visibility, then maybe this also provided a solution route? I wondered how I could make the idea of multiple 'times', literally, visible? Alongside this, how could I shape something that generated understanding but was simultaneously practical and usable? By late 2012, my thoughts started to turn to the role of visualisation, and particularly as a temporal tool.

2013-2018: Evolution of a visualisation tool - making visible *temporal-shock* and the topography of time

The years 2013 to 2018 represented the formal phase of the study and the period over which the visualisation tool took shape. The tool was based around a ubiquitous feature of contemporary organisational life, an online calendar (Feddern-Bekcan, 2008), the go-to place in terms of time use and availability within organisations (Porter & Nohria, 2018). The development of a working tool was categorised into six distinct stages. Each stage signalled, a) an evolution in the specificity of the visual representation and b), an advance in the tools' operational form. These periods can be summarised as follows:

1. 'Exploration' (2013 - June 2016)

Period one was defined by attempts to think creatively about how post-programme practising might be supported by some form of process or artefact (e.g. a mobile app). Alongside this, an understanding of the multifaceted nature of time, and particularly its visual representation, became a driving feature of the emerging design.

2. 'Sense-making' (July 2016)

The second period saw the initial attempts at representing linear and non-linear time in visual form. The output from this phase took the shape of 6 physical storyboards, each presenting a different temporal dimension within a generic 'calendar' backdrop.

3. 'Credibility' (August 2016 - March 2017)

Period three was driven by the need to establish a non-working prototype. Throughout 2016/17, I produced an online presentation that displayed the key elements of the

storyboards. This presentation was then used at Forum to build credibility for the tool and its methodology.

4. 'Construction' (April 2017- December 2017)

The fourth period saw the first attempt at producing detailed plans for an interactive working tool. This involved 2 phases of in-depth 'tool-design' interviews (a total of 21 individual interviews), multiple hand-drawn visuals and ultimately a design brief.

5. 'Operational simplicity' (January 2018 - August 2018)

An initial working model of the tool was finalised in February 2018. This was tested with potential users ($n = 8$) during two sets of Pilot Interviews and resulted in four beta versions of the tool over the following five months.

6. 'Use' (September 2018 - March 2019)

By July 2018, the tool was ready for use. The application and evaluation phase took place in the wake of an *Impact* programme in September 2018.

The visual representations of each of the above stages appear in the Appendix.

To navigate the iterative process of tool design, I required a rigorous and credible approach to evidence. Ultimately, this involved intermingled processes of data representation, data capture and data analysis. The requirements of understanding and use dictated that my eventual output had to make a contribution both within the Academy and in the world of Practice (Astley & Zammuto, 1992; Banks et al., 2016; Ghoshal, 2005). With this in mind, the study aimed to connect with a growing debate around re-imagining quality research (Degama et al., 2019). Recognising the challenges of neutrality and objectivity (Cunliffe & Alcadipani, 2016; Donnelly et al., 2013; Hatch & Cunliffe, 2012; Koning & Ooi, 2013; Peticca-Harris et al., 2016), and that 'good' accounts are rarely clean and tidy (Vickers, 2019), I actively sought to embrace the disorder and messiness of the practice setting at Forum - the 'swamp' (Hurd et al., 2019). This had fundamental implications for how I approached data e.g. I needed to represent, capture, analyse data both 'in-flight' and after-the-fact. It also required me to relax the taboo of the first person, 'share tales from the field' (Cunliffe & Alcadipani, 2016, p.2) and underscore the performativity of the research process (Ashcraft, 2017). Most of all, generating credible evidence required a detailed focus on methodology - the intermingled processes of data representation, capture, and analysis came together to underpin this need.

Data Representation

The representation of a temporal tool demanded much more than an aesthetic activity. To achieve this, I employed Blackwell's *Pattern Languages* (2020), a modified form of Green's *Cognitive Dimensions of Notation* (Green, 1989). This approach seeks to capture three activities typically engaged in when someone uses a diagram - activities involving interpretation (e.g. reading information), construction (e.g. building information) and cooperation (e.g. sharing information). These activities are further divided into a variety of sub-activities (e.g. different ways of modifying, exploring, or transcribing) and are ultimately linked to a range of user experiences. Overall, the approach sought to underscore the belief that visual representation often holds 'active' potential (Pauwels, 2005) and, quite literally, can be *seen* as more than passive additions to verbal texts (Miko, 2011). Employing a dialogic orientation (Meyer et al., 2013), this positioned visuals as a means of triggering rich responses to hard-to-talk-about experiences (e.g. time) with the follow-on potential to make tangible links between these experiences and underlying practices.

Data Capture

Constructing a working tool involved different relationships with data - it both required and produced data. A range of interview types, qualitative and quantitative, made up the core of formal data capture. In total, 157 interviews, over 4 phases, with 90 different respondents, took place between June 2017 and December 2018.

Each of the interview phases was guided by a specific purpose. In the first phase, Tool Design interviews supported the initial development of a visualisation tool. After this, a second set of interviews ['Tool Pilot'] explored how respondents reacted to the tool and how they made sense, if at all, of the various visual dimensions. In the third phase, a series of mini-interviews explored the temporal experience of participants in the immediate wake of three *Impact* programs (October & November 2017, March 2018). This phase sought to understand what respondents did with their change commitments in the absence of the tool. Finally, the 'PPP' (Post-Programme Process) was employed to evaluate the working tool in a real-world setting, with interviews taking place over a 2-month period after an *Impact* programme (September 2018). All interviews were carried out after 'successful' programmes that achieved satisfaction and commitment score > 4.7/5. The

logic for this was to establish the best possible circumstances for the practising of change commitments.

Formal interview data was supplemented by ongoing participant observation. My longstanding relationship with Forum gave me the opportunity to observe the company and its employees in intimate detail. Between late 2007 and September 2018 (the release of a final working tool), I led 49 learning programmes, all located within Forum's global headquarters. Over this period, I spent close to a year of my life (355 days) at Forum; each of these days represented a 24-hour experience. The office where I worked was part of an interconnected city complex, which included a dedicated company hotel where I stayed on each visit. This meant that I literally 'lived' at Forum - I slept within the complex, had breakfast at the restaurant, shopped at their convenience store, exercised in the company gym and had dinner in-house. The nature of my day-to-day working arrangement meant that I was situated amid the office environment where I could see first-hand how employees engaged, interacted and operated. In total, over 5000 written artefacts, in various forms, were generated between 2007 and 2024. Notes were used primarily to capture information 'in-flight' (Pettigrew, 1990) as well as to facilitate reflection (Maharaj, 2016) and reflexivity (Thompson, 2014) after-the-fact. Many of the notes had the key ingredients of a learning cycle (Dewey, 1910; Kolb & Fry, 1974; Lewin, 1946) but also, vitally, acted as a pressure valve for feelings and emotions at multiple moments across the study. As a practising researcher, I was located in the unfolding flow of activity (Hussenot & Missonier, 2016) capturing 'reality in flight' (Pettigrew, 1990). My role as a semi-insider, often wearing different 'hats' at the same time, meant that complex issues of ethics and risk were often woven into the fabric of daily engagements. Note-taking became central to making sense of these unfolding situations and gave solidity to the relational backstory of the research.

The study also offered opportunities to collect a range of natural artefacts as part of my day-to-day activity at Forum. These were used to triangulate the results from formal capture methods (e.g. electronic diary screenshots, e-mail communication, photos).

Data Analysis

The study's analytical framework involved a modified form of Process Tracing (Hall, 2013; Ricks & Liu, 2018) that operated in-the-flow, over time and after-the-fact. In its purest form, Process Tracing is built around two key features (Collier, 2011): 'static'

descriptions of an event/situation at a particular point in time, alongside unfolding understandings of how these static moments develop over time.

Static and sequential analysis were interlinked over the course of the study. As static analysis occurred, a picture emerged of the level of understanding at a particular point in time. This understanding was recycled via the use of 'learning moments' into the next stage of the study (e.g. a new understanding about a process would lead to a potential change in the process and hopefully increased understanding and better use). *Tracing* was employed as the cumulative process of vertical and horizontal analysis. Vertical analysis involved static thematic analysis, while horizontal analysis captured the growth of understanding and use over time.

The research design, by necessity, sought to incorporate differing ontological and epistemological perspectives. My worldview might best be described as a tension between Constructionist, Critical and Interpretivist strands (Norwich, 2020). Despite a strong professional background in quantitative design, I have migrated in later life to a more qualitative disposition. This methodological character, however, was not the only lens relevant to the study. The pursuit of use-inspired research meant the worldview of *others* was also crucial to mutual sense-making (Tickle et al., 2013). The respondents at Forum were steeped in a technical culture that valued perceived objectivity, certainty and hard 'facts'. Quantitative data and modes of understanding sat credibly within this technical/rational lens (Kinsella, 2007). In this sense, they *warmed* to the use of a quantitative tool, something that simultaneously respected but also challenged, through its output, their worldview (Udwadia, 1986) [e.g. 'I like that you are using hard data...but this (image) is really strange'].

Initially (2013-2017), the study was positioned as Mixed Methods Action Research (Ivankova, 2014) with simultaneous quantitative-QUALITATIVE strands (Teddle & Tashakkori, 2008). By early 2017, I had become uncomfortable with this description. The approach felt overly formulaic. In practice, I was spending a disproportionate amount of time fitting my research experiences into, what seemed like, an unrealistic design framework. Most of all, the design appeared unduly rigid to do justice to the flowing, unfolding nature of the underlying processes. As a process design emerged, I recognised that a combination of Action Research and Process was a more viable option (Luscher et al., 2006). This led to the 'final' description as a 'Process study *with an action orientation*'.

The base case profile: what participants *normally* do after a programme

Before the tool could be employed, it was necessary to establish the base-case profile, e.g. how successful were participants at currently applying their commitments without the tool? Under the existing system, three external coaches, each with a strong professional reputation, provided up to three sessions per person to support the implementation of post-programmed commitments. The take-up on this offering - despite strong endorsement from Forum Management - was consistently low. On average, 25% of participants participated in Session 1, declining to 0% in Session 3. Different coaches and approaches were employed, but there was no meaningful change in the results, e.g. low take-up on support seemed to indicate that strong intentionality to practice died off after the return to the workplace. To test this belief, it was first necessary to establish a base-case profile of the satisfaction with practising - this could then be compared to a similar score after the use of the tool to see if there was any meaningful difference.

For the base-case profile, I undertook three sets of 1-2-1 'mini-interviews' - 63 in total - after the 'October' (2017), 'November' (2017) and 'May' (2018) *Impact* programs. These were short (5 minutes) informal interactions that sought to capture reactions from participants while they were in the *flow of work*. The interviews took place on average 20 (calendar) days after the end of the programme. Participants were asked two questions. First, a request to describe, in their own words, the experience of returning to work after the programme. Second, a quantitative estimate of their satisfaction with the practising of their commitment. The latter was then compared with the *commitment-to-practise* score captured at the end of the programme. On a sliding scale of 1-5 (1 = very unsatisfied and 5, very satisfied), the average satisfaction score was 2.77 (October), 2.95 (November) and 2.83 (March). This was compared to *commitment-to-practice* scores of 4.87, 4.7 and 4.82, respectively, recorded at the end of each programme. In just over 20 days, the difference between commitment and satisfaction (to practice) for a highly successful programme had dropped by around 2 points.

As well as the initial picture of practising, I was eager to get a sense of practising behaviour beyond the 20-day point. The November programme (2017) provided an opportunity to do this with three data points that measured satisfaction over a six-month period. This involved the mini-interviews (after 23 days), 'Design' interviews (91 days) and the 'Pilot' interviews after 164 days.

The mini-interviews in November captured satisfaction scores from 22 respondents - 96% of the participants. At the first reading (23 days), all but one of the interviewees expressed a willingness to continue their participation in the study at the next data point (e.g. 91 days). Despite this, at the second data point, 8 out of the 22 respondents did not reply to three requests for a further interview. Of the 14 respondents who did take part, 4 provided a formal satisfaction score, while the remainder were estimated based on their interview feedback. Of these, nine respondents were judged to have declined by one point, while one stayed the same. Secondary coding suggested lower scores for 4 out of the 9 estimates, but a decision was made to remain with the initial, more conservative scores. This generated a practising satisfaction score after 91 days of 2.5.

For the third reading (164 days), an estimate was made of the satisfaction scores for four interviewees. One respondent, overtaken by concerns about a new job, freely admitted that he had put his commitment on 'permanent hold' - this person was rated zero. Two of the respondents had made 'firm' promises to focus on their commitments at 91 days and had done very little; each was given a score of one. The final respondent continued to make progress but noted significant challenges in maintaining her momentum; she was rated 3.5 (down from 4 at 91 days). Once again, secondary coding suggested lower scores for 2 participants, but the original estimates were maintained. This generated a score of 1.375 at the 164-day point.

The three data points provide a stark assessment of practising behaviour. They allow for the construction of a crude, yet compelling, representation of what happens to well-meaning commitments after a highly 'successful' programme - this portrayed a steep initial fall-off in practising, something that bears a striking resemblance to the trajectory of Ebbinghaus's forgetting curve (Murre & Dros, 2015). This representation implied that the period immediately after a programme is a moment of extreme vulnerability for participants' commitments. This sentiment rang out loudly in the associated comments. In the responses to the question about the return-to-work, over 70% of interviewees employed emotive terminology about their experience, many using words and phrases that appeared to tap into deep, visceral feelings.

I am swamped by all the stuff I have had to fight through

*I came back to the office and the s**t storm started. It was terrible*

Very hectic...crazy...manic...madness...an onslaught

The mini-interviews suggested that previously motivated participants experienced some form of 'shock' involving temporality once they returned to the workplace. I came to define this shock as an outcome state that appears to be associated with the relative experience of two different types of temporalities. This experience generates a dissonance that often undermines the validity of prior, well-intentioned commitments (themselves, a legitimate function of the prior context). On their return to the workplace, these participants were a long way from the static, disembodied vessels implied by substance ontology (Seibt, 2020). Highly sensitised to their temporal surroundings, the immediate post-programme context seems to be an active ingredient in their relationship with their change commitment, with well-intentioned commitments getting crowded out by a range of temporal pressures. Over and over, this theme of crowding out emerged in the data.

This time was going to be different...I was so committed over the weekend but it (my commitment) did not survive beyond early afternoon (Monday)

But this was not all. Whilst most respondents (89%) could recall their commitment, this memory was usually coupled with detailed descriptions of the deluge of 'stuff' surrounding the commitment, eventually leading to inactivity. Far from the cool, rational individual imposing strict discipline on their practising behaviour, this supported an image of fuzzy determinism (Ragin, 2008), with context and agency being somehow intermingled in the appreciation and experience of time (Flaherty & Fine, 2001). It also suggested a distinction between the type of knowledge produced on a programme and the subsequent perception of the validity of that knowledge back in the workplace (Cascio, 2007). This finding underpinned my belief that if knowledge was to be fit-for-purpose in the workplace, it not only needed to be actively recontextualised **on** the program but also needed to be recontextualised **within** the post-programme setting (Evans et al., 2010b). Central to this belief was a deliberate process of temporal embedding.

I am the first to highlight that there are clear limitations associated with the data points underpinning this 'practising' curve. Many of the scores were estimates, and the number of

respondents, especially at the two later points, was relatively low. That said, all the estimates were based on in-depth interviews, each of which contained specific references to the activity as described by the respondent. At the same time, no scores were attributed to those who chose not to take place in the interviews. Arguably, the lack of responses from eight respondents at 91 days, and 15 at 164 days, might suggest avoidance behaviour due to misgivings with their practising satisfaction. If so, the inclusion of these would have led to significantly lower scores. It is also worth noting that all scores were based on self-reports and, therefore, open to upward bias. All in all, I believe a strong case can be made to suggest that the scores generated as part of the exercise overestimate the degree of satisfaction with actual practising behaviour.

Figure 1: Satisfaction 'curve' after November Impact programme

The mini-interviews appeared to confirm my long-held hunch that something happens to the *well-meaning* commitments of participants after a *successful* learning programme. They also suggested that the visceral experience of time(s) was in some way central to this phenomenon. The next stage of the study was crucial therefore - could the tool make a meaningful difference to these experiences in a way that maintained the integrity of learning commitments when they encountered the ontological terrain of the *flow of work*.

September 2018: So what? The story of tool success and the sub-plot of interruptions

By August 2018, the working tool was ready for use. At this point, the logic for data capture and data analysis changed. Previously, capture and analysis were concerned primarily with tool construction; now, the rationale shifted to achieving a greater understanding of what the post programme setting (the 'timescape') looked and felt like. The upcoming *Impact* programme (September 2018) was lined up to test and evaluate the tool.

The application of the tool was known as the 'PPP' - the post-programme process. This involved three 1-2-1 interview sessions with each participant after the programme. 23 out of the 24 participants in the September programme chose to take part in the interviews lasting approximately 30-45 minutes. The group was split 78% male/22% female, with

22% of respondents based in Europe, 22% in Asia, 39% in North America, 9% in South America and 8% from the rest of the world. All respondents could be categorised as 'mid-career' professional knowledge workers engaged in a mix of front-line business and functional support roles. The age range was 35 to 45 with, on average, 10+ years of service at the company. This profile was broadly similar to previous interviews.

All 23 participants completed an online evaluation form at the end of the face-to-face programme (and before the commencing of the PPP). The mean average score for *Overall Programme Satisfaction* and *Individual Commitment to Apply Learning* was 4.8/5 (for both), scoring in line with the levels achieved in previous phases. The logic for establishing these measures was to ensure that the programme had 'delivered' on participants' expectations and that participants were indicating a state of readiness for post-programme application (e.g. they could not say they did not apply their commitment because the programme had not been successful, or that they were not intending to apply their learning).

The Post Programme Process (PPP) in action

The tool was employed as the initial activity during the first interview of the PPP. This activity occurred 3-5 minutes into the session and lasted roughly 4 minutes. To set up the activity, I shared my computer screen with the respondent and then asked 8 questions to elicit their temporal profile. These questions included:

- When does your working day start and end?
- What percentage of meetings do you have in a working day?
- Can other people at work put a meeting in your diary?
- What is the first time (and last time) you check your mobile devices for work?
- How many emails do you receive in a working day?
- How many do you send?
- Excluding emails, how many times might you be interrupted, physically or virtually, in an hour of the working day? [e.g. you are *pinged* by someone, you check a device on an unsolicited basis, a tap on the shoulder, or someone pops by your desk]

- Do you check emails/phones at night, or over the weekend?

Five evaluation criteria

Tool evaluation took place after Session III of the PPP. The evaluation was based on 5 criteria - satisfaction with the tool, engagement with the tool, reported change in behaviour, change stories and directly attributable revenue contribution. In addition, Forum leadership were keen to pursue some form of third-party validation from industry peers to gauge the wider effectiveness and novelty of the PPP. Evidence for the five evaluation criteria was gathered from a range of sources. Data on satisfaction and behaviour change was provided by a short self-report questionnaire at the end of the PPP. Engagement data was calculated based on voluntary attendance at each of the three PPP sessions. Change stories and revenue contributions were generated from the PPP interview data and triangulated by follow-up contact with the relevant manager or supervisor. Third-party validation was sought through a peer-evaluated global industry award.

The PPP experience was rated 4.7/5, with all respondents reporting some form of commitment-led behaviour change. Alongside this, and with the express permission of respondents, three detailed change stories were captured and shared with Forum management. Early in the PPP (after Session I), one of the stories indicated that the process was radically changing the way the respondent approached his external client relationships, something that had significant implications for a current business opportunity. Ultimately, this led to a transaction that represented a substantial value saving to Forum's (>\$20MM). Given the size of this contribution, the information was verified with and validated by the respondents' line manager (and their manager).

Arguably, the most important of the evaluation criteria for Forum were the engagement levels. The current coaching methodology achieved less than 25% engagement (in the first session) falling to 0% in the third session. The PPP achieved 92% 'voluntary' engagement (e.g. no external pressure to attend or reminders sent) over the three Sessions. This broke down as: 96% (1st Session), 92% (2nd Session), and 88% (3rd Session). This level of engagement, in Forum's eyes, gave respondents a significantly better chance of developing new habits and routines around their chosen commitments. No other methodology or approach at Forum yielded similar results.

In March 2019, I submitted the study for a Brandon Hall Global Excellence Award. Attracting submissions from 25 industries and 30 countries around the world, the aim of the Excellence Awards is to recognise the creativity and results of learning in practice - this is summed up in the award's mission statement as '*recognition that validates*

transformation'. The study was submitted under the elite category of 'Best Results from a Learning Program'. Here, all proposals are evaluated by a panel of senior learning experts, analysts and executives. The evaluation is based on five criteria: fit-for-need, design, functionality, innovation, and overall measurable benefits. Each proposal also required an executive-level sponsor at the submitting organisation - this was provided by the Global Director of Strategy at Forum. The results were announced on August 23rd, 2019. The study won a gold award, achieving the perfect score in all categories.

Illuminating the post-programme *timescape*

The PPP interviews provided a wealth of data that illuminated the respondent's relationship with time in the post-programme setting. This data is grouped into four temporal themes**,** each contributing to the picture of a complex *timescape*. These themes highlighted distinct temporal stages, the role of norma-temporal practices, the dilemmas and contradictions of liminality and the interactional 'crowding out' of practising commitments. Detailed description and discussion of these themes appear elsewhere (Rogers, 2020) - a short summary of each is outlined below.

Theme 1: 'Five stages of engagement...and quick disengagement'

The passage of time after the Impact programme appeared to be distinguished by distinct temporal stages. Over the course of the testing, five stages were identified - these were labelled as 'The Glow', 'The After-Glow', 'Injection of Realism', 'Normality' and 'The Diminishing Glow'. For most respondents, this immediate period after the programme represented a short 'glow' period of engagement. After this, the rapid-fire experience of a range of temporal pressures led to a sharp process of disengagement from commitments. In many cases, this unwinding started the moment the participant left the plenary room at the end of the *Impact* face-to-face session - the process of leaving and re-engaging with 'real life', became intermingled with the visceral, felt experience of a range of non-linear (temporal) dimensions, e.g. emails, instant messaging etc. These experiences challenged the portrayal of the post-programmed context as a passive, undifferentiated, linear timeline.

Theme 2: 'Moment of temporal contradiction'

As the respondents reengaged with 'real-life', temporal contradictions quickly emerged. These unfolded between what the respondent would normally do during their day and what they had committed to do. These contradictions represented multiple, sometimes simultaneous dilemmas, yet they always had strong temporal roots, representing a visceral moment of choice for the respondent about how they spent their time, e.g. do I have the energy to practice something new, or simply revert to what is most comfortable and familiar for me?

Theme 3: 'Temporal Practices as (deep) vessels of Identity'

The findings suggested that the link between temporality and practices (Moran, 2015) was powerfully engrained within a respondent's sense of identity and self. Respondents did not practise their commitments on a blank sheet - they already had an existing 'timescape' of practices developed over the years that said something about who they were and what they valued (in their current, pre-commitment, roles). In essence, the biography of the respondent, both personal and professional, was carved into a range of pre-existing chrono-normative routines and practices (Reynolds & Erikson, 2017).

Theme 4: 'The temporal shadow of others'

Respondents did not practise their commitments in isolation - 'others', at various levels, played a key, often hidden role in a respondent's *individual* change commitment. This *presence* had a significant impact on constraining commitments as the role of significant 'others' cast a temporal shadow over the act of practising. This shadow operated most visibly at the intra and inter-individual level. That said, wider temporal norms at an organisational and societal level also seemed to be operating. These broader forces appeared to play a major role in underpinning and legitimising intra and inter-individual practices, e.g. it was acceptable to 'ping' someone via SMS or come by their desk at any time because that was the way things got done at Forum.

Overall, the four themes supported a *timescape* model of the post-programme setting. This rich and varied topography seemed a long way from the blank sheet, linear model implied by Transfer. The dynamics of this *timescape* severely challenged the image of a rational,

autonomous individual in full control of the application of their commitments. Temporal context appeared to be deeply implicated in the perceived validity of an individual's commitments, and its topography was dominated by a range of features not captured by everyday clock time. Chief among these was the role of interruptions.

Interruptions: the 'shock troops' of non-linear time.

If the study's central storyline was the role of time, then a major subplot involved the nuanced power of interruptions. This was a plot, however, that had its own dynamics. In particular, the nature of a process methodology meant that my understanding of interruptions grew over the course of the study. It is worth exploring briefly how this comingling of understanding and use evolved.

The initial Tool Design and Mini-Interviews provided the first evidence that interruptions resonated strongly with respondents and were a potent *individual* force. At this stage, I saw interruptions as a singular, largely undifferentiated dimension. That said, they differed in type and character. What was described as a longer-term 'disruption' (e.g. a holiday, business trip or training programme) sat alongside both virtual (e.g. email) and physical interruptions (e.g. an unannounced visit to a workstation).

Interruptions did not act alone. They interacted with one another, and in doing so, their potency increased, particularly in terms of their effect on practising. This could be seen in the way a disruption (e.g. a business trip) increased the cumulative backlog of emails or how instant messaging was frequently used as a precursor to a physical visit to a respondent's desk. This 'combination effect' gained momentum by connecting with other aspects of the respondent's profile. Given their mid-career roles, many respondents tended to travel frequently, yet this was combined with increased management responsibilities. This resulted in multiple interruptions from direct reports on their return, something unavoidable given the physical (and virtual) 'layout' of the office space. The clarity of this *uninterrupted* gaze had Foucauldian overtones (Foucault, 1991; McMullan, 2015) - the associated *transparency* becoming more penetrating in the wake of COVID-19 as sophisticated forms of surveillance monitored workers' online presence (Blackman, 2020) and managers increasingly operated in blurred, hybrid worlds.

By the end of the Tool Pilot interviews, my understanding of interruptions might best be described as multiple and material. An appreciation of these dimensions displayed how the

presence of these interruptions could *crowd-out* well-intentioned commitments to practice. Yet this understanding was primarily related to the physical volume of interruptions - all with diverse temporal consequences - that distracted the respondent in some way. In one sense, this evidence supported my original hunch about the hidden role of time(s) so, in effect, the research could have ended at this point. That said, there were threads in the analysis that suggested that the role of interruptions might be more complex. Most of all, there were intriguing references to what was considered 'normal', 'proper' or 'legitimate' uses of time throughout the interviews. What was driving this, and what was the significance in terms of practising? These two questions bugged me. The answer seemed to lie in the topography of the timescape.

As noted, four themes emerged during the PPP interviews that painted a somewhat normative picture of the post-programme context. Each of these themes 'said' something deeper about the role of interruptions. As an example, when a person returns to work after a learning programme, arguably, many of the interruptions that dominate their daily working life stay the same. These interruptions not only break up the capacity to practice, but they also act as constant reminders of an individual's previous self. In so doing, they provide ongoing sources of contradictions, contradictions that are hard to offset because they are endorsed by those that initiate them: e.g. a notification, email, ping or a simple tap on the shoulder. Most of all, these interruptions matter beyond their material presence, their power is greatly enhanced by their symbolic and normative character.

Failure to *see* the symbolic and normative qualities of interruptions (and temporality in general) meant that a respondent could very easily make a change commitment without *seeing* its dislocation from the so-called 'proper' organisation and structure of their day. This dislocation was most evident in how temporal practices were framed during the study (Lakoff & Johnson, 2003; Oswick et al., 2002). Respondents would often say they needed to 'make time' to practise their commitment but then struggle to keep to that commitment. The ability, or lack of ability, to practise was not just a matter of temporal access. Even if the time was available, it seemed to be trumped by what was deemed to be a proper or more meaningful use of that time. This suggested that *making* time for practising was not enough. Recognising the deeply shaded quality of times meant that new temporal practices needed to move beyond availability *and into* the realm of *experimentation* and *play*. This metaphorical shift appeared to go some way in explaining why formal reflection (at work) was so difficult for many respondents. In essence, it was seen as an illegitimate act when compared to the proper use of everyday time, e.g. delivering on tasks that reinforce their pre-program identity.

What did this mean for the use of the tool? It suggested that broad, abstract commitments, no matter how worthy or well-meaning, were not the answer to post-programme application. There was a need to drill deeper to penetrate the taken-for-granted (normative and symbolic) *shading* associated with key temporal practices. These powerful practices occurred *in time*, not just *over time*. Employing a strategy of small wins (Termeer & Dewulf, 2019) allowed respondents to experiment *within* these practices while building a sense of legitimacy associated with a limited selection of 'key' moments. This process of temporal drilling did not occur at the flick of a switch. New temporal practices were usually associated with challenging 'threshold' activities (Meyer & Land, 2005) - this meant that practising unfolded iteratively, in a liminal, intermediate fashion (Allan et al., 2015b). Drilling down to cornerstone practices, no matter how messy the interruptive context, appeared within the scope of the cognitive and emotional capability of most respondents. In general, the process of limited, deep, drilling stood a better chance of *maintaining the test of time* when compared to broad, surface-level commitments to change.

Overall, the findings from the research at this stage seemed highly promising, but they were still just 'research' findings. The tool, if it was to be credible, now needed to transition from the peak of clear understanding to the messy swamp of real-life application. It needed to be implemented *in the wild*.

2019 - 2024: Implementation *in the wild* - no plan survives first contact with *temporality*

The final stage of the study involved implementing the tool within the structure of the Impact programme - this occurred on an ongoing basis between January 2021 and April 2024.

The logic of understanding and use made implementation a crucial stage of the study. Arguably, much valuable scientific knowledge struggles to move beyond a relatively small, closed loop of scholarship and into the real world (Vermeulen, 2007). My approach, as a working scholar, had been chosen specifically to avoid this. As I neared the end of the formal study, however, I felt a strong temptation to draw a line under everything. I was overwhelmed by what I had done - the research had felt like a significant 'mountain-top' experience, and the last thing I wanted was now to muddy my finely polished

findings in the tangled complexity of the swamp. I could feel myself falling into the *Transfer trap* - why don't I just publish my findings and assume that this 'insight' is good enough.

In a fortuitous way, the outbreak of COVID-19 channelled the next stage of the study. Overnight, the traditional in-person, face-to-face approach to formal learning ended. This forced the Impact design team to rethink the programme, which now, most likely, needed to be online and virtual. To do this, it was necessary to challenge some of the core assumptions about what was possible and credible in a post-COVID learning environment. This opened a crucial route for enhancing the role of implementation and, in doing so, integrating the key findings and approach of the study.

Phases of implementation

There were three phases of real-life implementation between 2020 and 2024. The tool was piloted in 12 demonstration sessions with a range of 'elite' stakeholders (academic and practitioner) through 2020 and 2021. Sessions were 1-2-1, took place online (Microsoft Teams) and lasted approximately 45 minutes. As part of the second phase (2022), a total of 352 individual (1-2-1) sessions involving 141 respondents were held around (e.g. before and after) 6 Impact programmes. The third stage (2023- 2024) involved a shift from 1-2-1 to group sessions. Across 64 group sessions, a temporal-based methodology, refined from the previous 1-2-1 sessions, was employed. All sessions, individual and group, were led by me and were documented as part of the ongoing process of reflection, reflexivity and action. Throughout, I had sole responsibility for the write-up, as well as the confidentiality and privacy of materials. Like prior stages, a process mindset/methodology was key to ongoing development. My activities were dominated by a burgeoning collection of notes. Once again, the co-mingling of representation, capture and analysis 'in-flight' and 'after the fact' became the approach that allowed the tool, the methodology and the programme to evolve through the ongoing navigation of understanding and use.

The tool was initially employed in a similar fashion to the research stage of the PPP, e.g. three121 sessions with individual participants after each programme. The plan was for the tool to be used primarily as a means of stimulating and eliciting temporal data at the start of the first post-programme session. More broadly, the research findings were also engrained into the redesign of the core programme. Themes around recontextualisation, the role of time, process, habit and scaffolding changed the nature and orientation of the

design. Overall, the ontological and epistemological practicalities of implementation became the driving force behind what I came to call an 'outside in' approach to programme design, e.g. the swamp defined the nature of the formal programme as opposed to the other way around.

A sting in the tail!

The use of the tool was short-lived - its use had to be reconsidered during the first phase of programme implementation. This came as something of a shock to me. By pursuing the goal of temporal visibility, I had thought that the knowledge provided by the visualisation would be used by participants to empower action and enable change. For many, it appeared to achieve something close to the opposite. As the session progressed, a pattern emerged whereby the energy and mood levels in the interactions seemed to decrease as the full extent of temporal context became visible. In quite a detailed response, one respondent expressed this sentiment very eloquently:

Thank you for showing me this (the output from the tool) -- it is very impressive...I never really thought of all of that 'stuff'.

But I am not sure how it makes me feel.

I might as well give up. There is nothing I can do about this (pointing to the screen) ...great....yeah.....it's my life! You have done very well at presenting it (my life) back to me but I don't think I want to know this. What can I do?

This reaction felt like the equivalent of a post-research 'cold shower'. Despite the integrity of the results from the formal findings, the tool appeared to struggle to pass the ontological test of real-life practice dynamics. On reflection, this should not have been a huge surprise - the warning signs, if I am honest, were evident all the way back to 2016. Reviewing my notes, I can now see that the reaction to the tool seemed to follow a pattern: initial excitement, a willingness to engage, a sense of intrigue and then signs of resignation. In the 12 demonstration meetings (2022), the sentiments followed a similar trajectory, culminating in a feeling of overload by the end of the call. Looking back now,

I can see that I missed this 'signal' each time. The most common word used as a reaction to the output was 'overwhelming'. In effect, the tool had presented a respondent's working life back to them in an impactful, accurate and highly visceral manner, but the impact of this, in some way, did not feel appropriate. I discontinued the use of the tool after 11 sessions. My concerns were included in a note from March 2022.

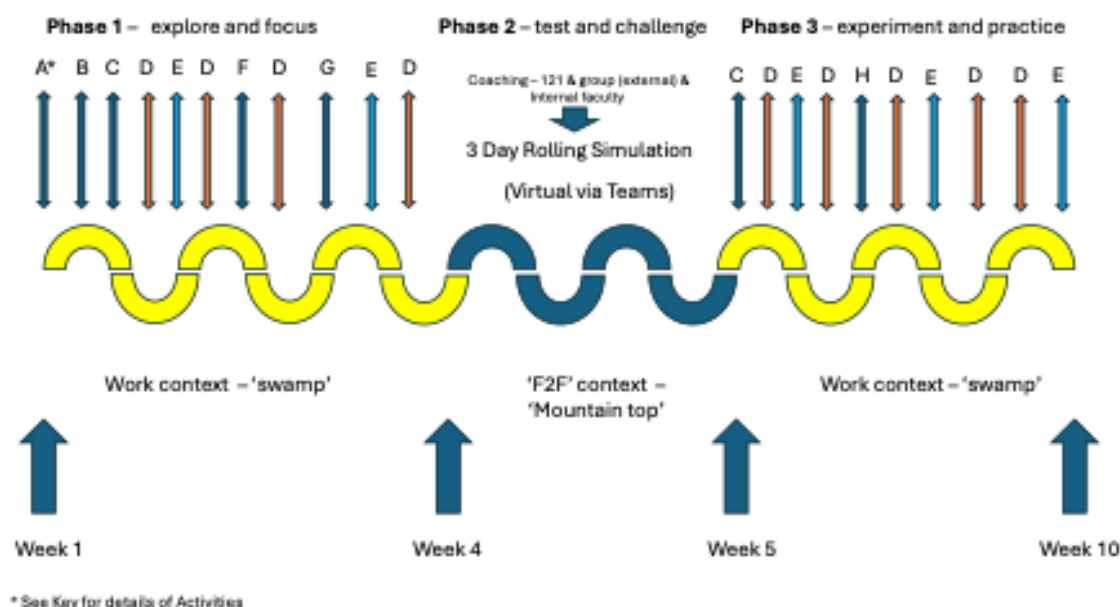
*'Am I giving (people) too much to handle with not enough time to unpack/
make sense of the data?*

*Is there potential harm here? Are there ethical issues by not devoting the time
to drill (much) deeper? This feels more like therapy'.*

New approach: a group-based temporal methodology

Something needed to take the place of the tool; the answer to this lay in what became known as an integrated temporal methodology. In its final form (April 2024), the Impact programme transitioned into a 10-week experience, unfolding over three phases, each with its own logic and purpose. Phase 1 provided an opportunity for participants to explore core programme content and determine their specific areas of focus and development. Phase 2 tested and challenged these focus areas over the course of a three-day 'live' simulation - this process occurred with the assistance of a canopy of coaching support, both individual and group. Finally, Phase 3 provided a platform for the supported practising of change commitments, each of which had been specified and refined during the previous phase (2).

Figure 3: The Impact Programme as a rolling 'temporal' wave



The final version of the Impact programme (2024) is represented in the diagram above as a rolling wave (see Figure 3). This representation emphasises a break with the linear aspects of traditional programme design where a stark temporal distinction routinely exists between the face-to-face programme (the 'Mountain-top') and preceding/subsequent activity in the work setting (the 'Swamp'). The primary aim was now to put temporality at the intersection of learning and implementation by constantly connecting with the flow of work via ongoing processes of recontextualisation. Building on the research findings, the design rationale stressed a sense of temporal congruence/connection between these settings. Most of all, the act of practising was now recognised as a liminal process of experimentation within the day-to-day realities of the swamp, something that unfolded both over and, crucially, in time.

The overall programme experience (10 weeks) was dotted with a range of temporal activities that aimed to offset the challenges associated with the 'test of time(s)'. These activities are captured as two-way arrows [A] to [H] in the diagram above. They can be summarised as follows:

[A] Nomination. Confirmation with the participant of their selection for Impact. This communication underscores the nature/extent of the temporal commitment involved over the 10-week period.

[B] Kick-off. An interactive session with the Impact cohort (circa 24 in total) explaining the logic of the programme as well as its approach. This session is delivered in a pacey,

engaging fashion involving prior participants, coaching team members and selected external faculty. This moment provides an opportunity to reinforce the temporal discipline and commitment surrounding each element of the process over the 10 weeks.

[C] Manager meeting: Each participant meets with their manager to agree on a specific area of focus/development. This meeting includes a discussion of how the manager will support the process of learning and implementation over the 10 weeks and beyond.

[D] Weekly 'content' Video. Key aspects of programme content are delivered each Monday morning over the 10-week period. Videos are recorded on the previous day (Sunday) to reflect the customised needs of each cohort and to connect with the authentic flow of the emerging news cycle. The nature of these videos (3-4 minutes max) changes over the course of the 10 weeks - videos in phase 3 (as described below) become the means for delivering the unfolding temporal methodology for practising.

[E] Group sessions. The programme cohort is split into four teams. During Phase 2, teams are paired (2*2) to work in cooperation across time zones. During Phase 3, each team has a separate 1-hour check-in every two weeks. These facilitated sessions aim to explore emerging content themes, as well as the issues associated with the flow of disciplined temporal practising.

[F] WhatsApp connection. Each participant is encouraged to explore their pre-existing temporal context by sharing a personal introduction with the Lead Faculty (e.g. me) via WhatsApp. These communications are private and, as with all aspects of Impact, shared only with non-Forum programme faculty. The logic of employing WhatsApp is to engage participants in a way that integrates more authentically with the flow of their work (and life).

[G] Customized Focus Area. Participants share their initial focus area with Impact faculty and coaches. Crucially, this area of focus is not cast in stone - in line with the iterative nature of liminal experimentation, it is refined and developed over the course of the 10 weeks.

[H] Group sessions (self-organised). Participants are encouraged to meet separately and in groups over the course of the 10 weeks. The aim of these meetings is for participants to support and challenge one another in a meaningful and authentic fashion and in ways that connect with the flow of their regular work schedule.

The removal of the tool and the transition to a group format involved the gradual release of a time-based practising methodology. This methodology aimed to support the active temporal recontextualisation of liminal practising over the five weeks after Phase 2 (e.g. Phase 3). The support revolved around 5 key themes, which, in practice, were often co-mingled to suit the specific needs of each cohort.

Between the 'Mountaintop' and the 'Swamp'. Week 1 highlights the liminal period after Phase 2, explicitly recognising the qualitatively different experience of time between Phase 2 and the return to work. Presented as a 'natural' phenomenon, this is positioned as something that needs active navigation if participants are not to (quickly) revert to prior habits and modes of operating.

Experimentation and practising. Week 2 explores habit formation. New habits are messy and need time to take hold - for many, this tends to be a challenging process of habit substitution as well as disciplined experimentation. Participants are encouraged to ringfence opportunities to practise in their diary (e.g. 'determine 5 'slots' for practising in your calendar this week') and enlist the ongoing support of others in this endeavour.

Focusing on one corner-stone habit. With packed schedules and limited (cognitive) bandwidth, participants are encouraged to determine one corner-stone habit that acts as a platform for change. The popular concept of 'Atomic Habits' is used as a template for this approach (Clear, 2018).

Identifying temporal triggers. *During week 4, participants are encouraged to operate not only 'over' but also 'in' time. The concept of Atomic Habits is extended into the role of Sub-Atomic Habits, e.g. those practices existing around a chosen activity, usually before it, that effectively trigger the need to practise.*

Becoming a reflective practitioner. Two dimensions of time are central to the messaging in Week Five. Building on Schön's concept of the reflective practitioner, participants are encouraged to frame practising by reflecting in and on action as they operated in and over time.

Following the new structure, *Impact* 'satisfaction' scores for 2023-2024 were maintained at 4.7/5. As with 2022, these scores were captured at the end of the year and related to both changes in behaviour and activity (Kirkpatrick Level III as opposed to Level I). In addition, it has become commonplace in recent years to apply an adjustment to *virtual* face-to-face programme scores to be comparable with physical face-to-face

equivalents. The level of adjustment commonly employed is .35, bringing the score for the experience to 5.05/5. The programme also achieved over 80% voluntary engagement by participants to the end of the 10-week process. Maintaining this level of engagement was judged by Forum management to be a significant success in terms of the continued profile and long-term sustainability of the programme.

Time and the individual: expanding the lens

I have reflected extensively on my actions around this period and sought to understand how I was complicit in misunderstanding the positioning of the tool? Why did the tool 'work' during formal research implementation yet struggle 'in the wild'? These questions lingered with me.

Looking back over the formal study, I suspect that I focused, almost exclusively, on the core research objective - making temporal context visible. In so doing, I became blind to the wider significance of temporality and stayed firmly, almost technically, rooted at an individual level of analysis. It is clear from the pattern of reactions across the interviews that there were limits to the control that respondents felt over their use and experience of time. While the addition of a 'coach' (e.g. me) was helpful in providing a degree of scaffolding and support, it appeared to do little, for many, in overcoming the systemic nature of the temporal issues they were facing. That said, and this is a significant caveat, a sizable minority of respondents displayed meaningful examples of change using the tool. This was evidenced by three respondents whose efforts generated significant revenue contributions over the course of the process. On further analysis, it would seem that a common denominator among the 'successful' respondents was their ability to expand their temporal thinking and dialogue to a wider audience (e.g. their managers and work colleagues). The attributed revenue contribution from these three participants alone allowed the operation of the tool to be considered a significant success by Forum management in 2022 (e.g. 100-time ROI). In the background, however, I was not so comfortable.

I have been struck by my ongoing, almost magnetic tendency to get pulled back to the individual level of analysis and intervention. As I reflect, I can clearly see that the formal research findings had emphasised the impact of a wider social setting (e.g. the temporal shadow of others), but while this made complete sense on paper, it was challenging to operationalise in real life. Part of this is related to the practicalities of execution. I

recognised early on that if I was to deliver my research findings, then I had to take the lead and largely carry them out myself. This was far from ideal, but it highlights the messy dilemmas facing many academics in real-world settings. While the approach went against my core research instincts, anything else would have tested the workable limits of stakeholder management at Forum, especially in relation to risk tolerance (surrounding the tool) and the bandwidth for decision-making.

Finally, I am also conscious that much of the description of this phase (and the study in general) focuses on 'my' role. This does little to capture the ongoing relational backstory behind the research. As an example, the nature of the changes during the implementation period would not have been possible without the nuanced involvement and ongoing sponsorship of a new programme manager for Impact. Her arrival brought a significant change to the tone of engagements, while her belief in and openness to new ideas gave collective license to engage in creative experimentation. This acts as a cautionary tale in terms of the generic profiling of colleagues, respondents and stakeholders.

Making sense of 18 years: seeing *success and failure* through a temporal lens

As I seek to make sense of the last 18 years, the process of sense-making falls into two distinct categories. First, there are three themes that emerge as headlines from the original problem I sought to interrogate - the invisibility of the post-programme context. These themes are the multidimensional power of time, a temporal lens on learning and the complicated role of the tool. There is, however, another theme, one that only became visible during my time at the Institute. This plays to a wider lens on time, something that increasingly dimmed my ability to connect with the changing nature of the problem, especially in recent years. I address each of these themes below.

The multidimensional power of times

I had a hunch about the role of time in formal moments of change. This was something I could see in my practice, but for many reasons, it appeared to be *invisible* within my wider field. To move forward, I needed to illuminate both the presence and the power of time in a rigorous and credible fashion.

The study confirmed my hunch that temporality is far from an un-differentiated linear concept. It has nuanced, non-linear dimensions that enable and, in many cases, constrain the capacity to act. Making linear and non-linear dimensions visible contributes to a rich and complex *timescape* - in the immediate wake of a 'successful' formal programme, the contours and topography of this *timescape* operate as an active ingredient in producing an experience of *Temporal Shock*.

Time, as the central storyline of the study, was deeply implicated with the sub-plot of interruptions. Interruptions were multiple in form, acting on, and interacting with one another. Their combined potency *crowded-out* commitments, but this crowding was itself a complex phenomenon. Far from being neutral or value-free, existing practices acted like vessels of identity shaded with engrained norma-temporal characteristics (Wanka & Prescher, 2022). Times incorporated identity markers that signalled their 'normal' and 'proper' usage. Practising something new, especially something that required a threshold shift (Meyer et al., 2010), often conflicted with the symbolic and normative features underpinning normal or proper time. This was most evident in the metaphors that framed the act of practising (Lakoff & Johnson, 2003; Oswick et al., 2002). 'Making time' to practise was rarely enough to commit to change. Even if the requisite time was available, it was often trumped by what was deemed a proper, powerful and more legitimate use of that time (e.g. what I normally do). To respect this potency, effective practicing needed to be recast as a liminal process of *experimentation and play*, something that drilled deep into normative temporal practices.

Overall, the findings challenged the limits of temporal autonomy and sovereignty. This was a complicated realisation for me, especially in my prior, strongly held belief in the agentic power of the individual. Throughout the study, intentionality and agency were severely tested for many respondents, particularly as they struggled to inhabit the ever-diminishing interruptive space between stimulus and response. To add to this, it was clear that a norma-temporal understanding of practices had a shared social dimension. The temporal expectations of others constantly reinforced and reproduced the existing role of individual participants, often leading to extreme contradictions for, and pressure on, those seeking to practice new commitments. It also raised a significant, recurring issue over the appropriate level of analysis to employ when seeking to enable change. This was a recurring, deeply pervasive feature that I will return to below.

Intervention or interruption: a reframing of formal learning

At the heart (and start) of this research lay an issue over the usefulness and worth of formal learning in the workplace. This is a complex topic. It is easy to become locked in highly contested debates surrounding the issue - depending on your perspective; formal learning is either acontextual and unproblematic or hyper-contextual and irrelevant. This study suggests that neither of these positionings is helpful. Ultimately, I come to rest in a mediating space that actively navigates these polarities. Meaningful formal learning recognises both the potential and the limitations of its context. In a way, it acts like a spark. It can inspire, create illumination, make things clearer and challenge deeply held assumptions. Most of all, it is a testing ground and launch pad for new ideas that have the potential to shape and reshape people's lives and experiences. This is often difficult, if not impossible, to achieve in a non-formal setting. Under the right conditions, *the spark* from the formal setting can become a flame, but this requires *seeing* the temporal constraints of the post-programme setting. The inability to 'see' contextual impact, especially from a temporal perspective, can mean that the spark created by a formal setting is extinguished. This, as the thrust of the study suggests, is frequently the case.

This realisation has significant implications. Formal programmes need to extend into the workplace and do so in a way that authentically connects with the temporal flow of work. Doing this, however, requires a very different way of thinking. Metaphors abound, seeking to capture the essence of learning (Hager & Hodgkinson, 2009). In practice, it is common to refer to a formal learning programme as an intervention (Whitehouse, 2023), a metaphorical concept that is laden with temporal significance. It portrays an activity that is finite, discrete, and one-off. Most of all, it frames the way we think about the experience of this *experience*. It is something acontextual, something that can be engaged in unproblematically as a participant or a faculty member. Employing a temporal lens radically changes this. Ultimately, this work suggests that it is better to think of a formal learning experience as an *interruption* rather than an intervention. A learning programme is always part of a temporal process, a process where what went before and what happened afterwards are hugely relevant and intimately connected. A process that unfolds both over time and in time at multiple simultaneous levels. Designing and delivering programme learning from an 'outside-in' perspective (e.g. starting with the flow of work) reduces the impact of temporal shocks and facilitates a more effective route to understanding and use.

Broadening the lens, this research has significance beyond the field of post-programme application. It supports a temporal perspective on contextual change, which allows us to think and talk about the process of change in more nuanced and generative ways. It provides a language and a set of conceptual tools that make everyday contexts tangible and visible, all the while hinting at routes of explanation that help to make sense of the stickiness of change.

The study had a range of limitations that have been detailed elsewhere. That said, I am conscious that a process methodology meant that I had no choice but to address these limitations on a continuous basis over the life of the study. While it is impossible to put an exact number on the 'limitation-learning-change' cycles, I conservatively estimate that over 1,100 learning moments occurred over the course of 18 years. These were re-cycled 'in-the-flow' and 'after-the-fact' into both the design of the study as well as the underlying programme. While this literally limits the limitations of the study, it does nothing to offset what I missed or simply chose not to see as the study progressed. With visibility as a central thread of the research, it is ironic that a lack of visibility operated at a more meta level over the course of the study - this was particularly the case in relation to the role of the tool.

The tool: a visible success, and the 'failure' of invisibility!

With hindsight, the story of the tool was less straightforward than that of time. At one level, the tool was a noteworthy success. It worked effectively from an operational perspective, had definite novelty and challenged basic understandings of temporality. The process of visualising appeared to resonate with respondents, provoked meaningful reactions and fostered generative conversations. The tool also provided a platform for a wider understanding of the post-programme setting and was successful in meeting its evaluation requirements. The latter feature should not be underestimated. As noted above, there are significant limitations in measuring and assessing the effectiveness of formal learning across both the theoretical and practice realms. The tool, in illuminating the post-programme setting, brought visibility to a range of measurements that were broad-based, effective and triangulated for validity. Most of all, the process of illumination drew a direct line of sight between programme learning and post-programme application and use. This, as documented, generated significant returns.

There were challenges, however, from the outset relating to the appropriate level of analysis and intervention underpinning the study. On the one hand, the tool worked well in making visible the reality of the participant as an embodied, contextually embedded actor. The limitations of this portrayal were vividly exposed when it came to the *application* of the tool *in the wild* (e.g. post formal research, 2020-2024). In simple terms, a one-to-one approach (between myself and the participant) continued to privilege an image of the participant as autonomous, sovereign and self-reliant. This approach placed an undue burden on individual participants to remain the sole authors of their change. On reflection, I consider it possible that, despite my theoretical protestations, I simply extended the *logic of Transfer* into the participants' workplace setting (e.g. 'this is your responsibility to change, and let me show you how difficult this is going to be'). Ultimately, the design of the tool did little to accommodate the support and scaffolding role of others - and, with this, incorporate the shared sense of norma-temporality present in these moments. This, I suspect, led to a level of dissonance for many respondents with key aspects of their commitment (Cooper, 2019; Festinger, 1957; Hinojosa et al., 2016), especially during the 1-2-1 version of the implementation, and undermined their ability to act.

Many of the challenges facing respondents related to the type of change they sought to undertake, in particular, its *threshold* nature (Donovan, 2017; Meyer et al., 2010). This immediately threw up complex issues of identity (Ibarra, 2004, 2015b), however, this conception of the self, given the dynamics of norma temporality, was always broader than I seem to imagine. At one level, interruptive temporality was not just an individual concept it was always tied to the respondent's wider social identity (Crane & Ruebottom, 2011; Hogg, 2016; Hogg & Terry, 2000). This identity was shared. Consequently, any sustainable 'solution' to the times 'legitimately' associated with an individual's change commitment had to be addressed at a broader level. This route always involved an enhanced group of 'significant others' beyond me and the respondent. In practice, the eventual reshaping of the tool process and the adoption of a wider temporal methodology provided a route forward. This was achieved by the shift from an individual to a group approach in the second phase of implementation (2022-2024).

Expanding my thinking made visible a wider set of dynamics but also challenged my own temporal assumptions. I started to ask myself some simple but fundamental questions about the framing of the overall study. What times were I choosing to, or complicit in, seeing and what times was I avoiding? Had I, in the development of the tool, and its subsequent methodology, framed the problem in such a way that made heroic assumptions

about the equality of time? This worried me over the latter parts of the formal research. To test my potential biases, I attempted to challenge my own temporal assumptions.

To do this I designed a brief thought experiment to test my perspective on temporal equality. Social Reproduction Theory [SRT] (Bhattacharya, 2017; Ferguson, 2019) is a framework that seeks to outline a basis for the existence and continuation of inequality. Time is a core feature of social reproduction, especially in how it is experienced and valued in the *hidden* aspects of everyday life, e.g. the role of care-giving (Griffiths, 2020). Through the lens of SRT, it is possible to see how certain times, though central to the operation of society, are often rendered invisible and unseen. More broadly, this invisibility is often experienced quite differently across different sections of society (Featherstone, 2020). The COVID experience provided an interesting example of this. As working from home became the norm for 'equal status' female and male knowledge workers, in many cases, this arrangement only intensified the differential childcare burden on women compared to men (Ascher, 2020). These dynamics seemed to say something deeper about the relative worth of time.

This observation raised a worrying question for me. What were the times I was seeing and what were the times I was, in effect, rendering invisible? In the design and delivery of the study, had I concentrated on those times that I considered to be valued or that contributed to what was commonly understood as value to the detriment of others? One example of this stood out in a stark fashion. During the early Tool Design interviews, I listened attentively to a 'successful' female respondent talk animatedly, just like her male colleagues, about the impact of meetings and interruptions on her working day. With some passion, she also told me about the nuanced balancing act in her temporal management driven by her ultimate responsibility for childcare. For some reason, however, while this theme got captured in the coding, it did not appear as a final construct in my findings. This prompted me to revisit all the interview transcripts, paying particular attention to female respondents. Had I been blind to other such instances? Surprisingly, there were only two other cases with similar references to care responsibilities. This seemed low. Was this a function of the lived experience of the participants or, as I feared, the overall framing of the enquiry? While neither of these explanations can be ruled out, it might also be the case that, in some way, both sides of the interaction (myself and the participant) did not consider these times as legitimate or within the scope of the conversation. In SRT terms, I, and possibly the respondents, had made a significant assumption about temporal equivalence where none existed. The implications of this were

stark. Did the tool and its subsequent methodology, in representing a certain set of times

to the exclusion of others, also play a part in producing and reproducing those times? To address this, the second phase of the methodology (2023- 2024) sought to actively capture *less visible* times. The concept of subjective time (Shipp & Jansen, 2021) proved the most useful way of achieving this (e.g. 'Thinking about your life as a whole what times really matter to you?'). This question was effective in starting to address the broader issues of equality that underpin an unproblematic approach to time.

Expanding the temporal lens: the final frontier

Before finishing, there is a final theme that acts as a postscript to the entire research process. Its articulation became clearer during my time at the Institute (April 2024) and was due in large part to the productive conversations I had with colleagues over the course of my fellowship. This, I believe, adds another, wider dimension to the role of temporal perspective and how what we see enables, constrains and legitimises the ability to act.

This section requires a shift in tone from the rest of the article. I return to what originally drove me to commence this work and what provided the motivation to navigate the complexity of understanding and use for close to 18 years. Alongside the detailed methodological story of visibility, time, and practices has been the belief that my work and research were driven by a strong sense of purpose.

Back in 2006, I started my relationship with Forum because I believed that I could make a difference to the future of the planet. The prime driver behind the eventual research was directly related to this belief. In equipping key actors at Forum for the transformative aspects of energy transition, I wanted to see how I could creatively address the seemingly intractable issue of application and use after formal programme learning. Without this focus, there was little point or purpose to my actions as an educator.

For most of this study, my plan seemed to work. The story, as told in this article, highlights the operation of temporal dynamics at individual, team and organisational levels (Chaturvedi, 2021) as practices sought to be reconstructed and renegotiated in pursuit of a very different future. The research sought to address these challenges in a direct, creative and impactful manner.

In recent years, however, an additional strand of thinking came into play. This represented an increasingly ideological level of thought that infused the temporal perspectives at

Forum. Three factors played into this emerging ideological strand.

First, the Russian invasion of Ukraine catalysed a renewed focus on fossil fuels (Al-Saidi, 2023). Beyond the obvious, practical implications for oil and gas supply, this moment acted as a significant boost to many within the fossil fuel industry (Sweney, 2024). In addition to the narrative of the energy transition, a new, offsetting narrative of energy security appeared on the scene, and almost overnight, the concerns of the planet seemed to be relegated.

With the focus on energy supply came price pressures (Blot et al., 2023). As inflation took hold globally, interest rates rose, and suddenly, swathes of the renewables businesses, with little tolerance for higher rates, became uneconomical (Millard, 2023). Another nail in the coffin of a different future.

Critically, both of the above tensions played to something more fundamental - the increasing colonisation of fossil fuels as a new and expansive front in the culture wars (Krugman, 2023). Here, the pursuit of renewables and those that supported them were increasingly seen as part of a wider 'woke' project (Shellenberger, 2022). As a counterbalance to this so-called liberal 'wokism', access to cheap fossil fuels has been positioned as a God-given force for good (Milman, 2024). This dynamic, infused with a strong sense of remedial immediacy, was a major driver in the 2024 Republican presidential campaign (G. Smith, 2024).

Forum and its management were not immune to these tendencies. This new-found ideology prompted a widespread reappraisal of much of what had happened over the previous 18 years (Berg Johansen & De Cock, 2018). Forum's top management started to employ a very different type of strategic, temporal narrative (Bansal et al., 2022). A form and style of leadership emerged across the company that lost its sense of pioneering, forward-looking optimism (Agnew et al., 2024). This was led by a new Chief Executive. Almost overnight, he outlined a renewed commitment to the provision of fossil fuels (McCormick, 2024), positioning Forum as custodians of the *public good* (Chu & McCormick, 2024). The blowback from this shift, I suspect, will have considerable consequences for the momentum and speed of the energy transition (Gabbatiss, 2024).

More immediately, this shift had significant implications for me and the study. I have always believed that the managed decline of fossil fuels is crucial to a sustainable, fair energy transition. This required those, inside and outside the industry, to be brave and creative about shaping very different energy solutions. That was the logic behind the

Impact programme and the reason I pursued this research - to make sure that shaping was more than an abstract pursuit and was reflected in granular day-to-day practices. In recent years, however, I have consistently underestimated how those at the most senior levels of organisations and governments can play with time to suit a particular worldview (Berg Johansen & De Cock, 2018). This play, as the planet burned, was not something that sat comfortably with me and my values. I started this project wanting to make time visible for key actors in moments of change - I never imagined however how rich, complex and strategically manipulative these temporal processes could be. They played out simultaneously over multiple levels, penetrating deeply into our personal, social and, ultimately, our societal selves. Addressing this, in extremis, is often portrayed as a binary distinction between either an individual or systemic lens (Chater & Loewenstein, 2022). This feels far too crude. The study suggests that organisational actors, at all levels, engage in an active, reciprocal relationship with time. Through these processes, each of us *play with* and are *played by* temporality, something that shapes the legitimacy and sustainability of our actions. Recognising this dynamic leads to an inevitable conclusion. Making the richness of temporality visible, at all levels, is crucial if we are to avoid the illusion of change.

In May 2024, after 18 years and at the height of its 'success', I left my role on Impact and brought the study to an end. My work needed a more purposeful focus.

Postscript

Since finishing the first draft of this article...

On 6th November 2024, Donald Trump was re-elected president of the United States with a commitment to 'Drill Baby Drill'.

On 11th November, COP 29 host President Ilham Aliyev branded oil and gas a 'gift from God'.

On 12th November 2024, Shell won an appeal in the Dutch courts against a landmark ruling to drastically cut its emissions.

On 24th December the UK Financial Times reported that the majority of top CEOs in America are 'bending their knee' to the policies of the President-elect.

Barry Rogers 01/01/2025

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2025/3 - paris-ias-ideas - Article No.1. Freely available at <https://paris.pias.science/article/beyond-the-illusion-of-change-bridging-the-classroom-and-the-workplace-via-processes-of-temporal-re-contextualisation> - ISSN 2826-2832/© 2025 Rogers B.
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This research occurred alongside a parallel commercial relationship with Forum (e.g. design and delivery of customised education). The study was conducted without any financial support from any commercial entity, institution, or individual who could benefit from its results. During this research, the author, Barry Rogers, covered all expenses and outgoings relating to the study (e.g. legal fees, travel, education) and received no financial contributions, in any form, from any source, towards the study. No influence was exerted on the study design, data collection, data interpretation, or publication decisions at any stage. Barry Rogers has no ongoing commercial relationship with Forum.

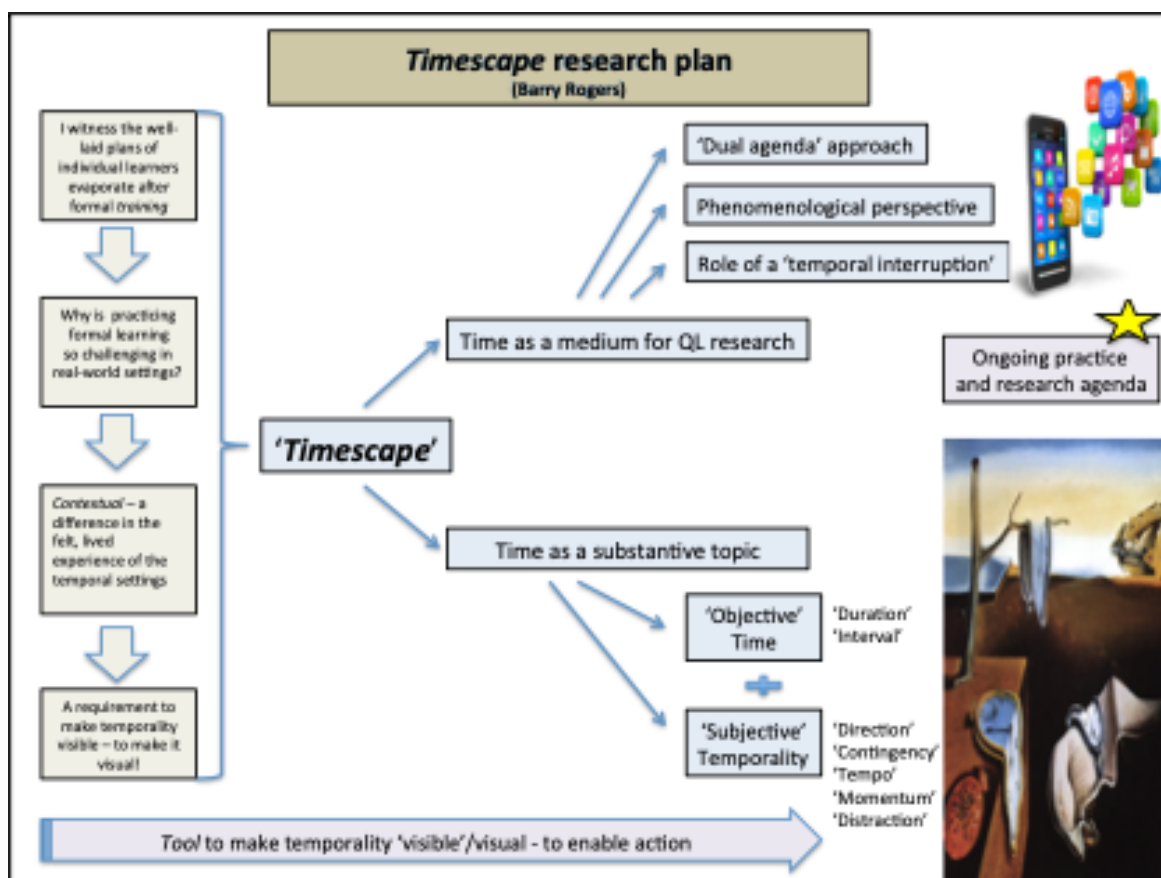
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Appendix

Period 1: 'Exploration' (2013 - June 2016)

In the first period, my thoughts around the use of a tool focused mostly on mobile applications. Increasingly, however, I became convinced of the need to 'decentre' the individual user and explicitly address contextual blockages to practising. So-called 'objective' and 'subjective' time were a defining feature of this context.

Figure 1.1: Early research plan showing the development stages of an App



One of the key sounding-boards at this time was Professor Alan Blackwell at the University of Cambridge Computer Lab; Alan has a speciality and expertise in visualisation. In our first meeting, I needed to introduce my topic to him in an understandable fashion; to do this, I used Dali's 'melting clocks' to capture the visual and conceptual potential of 'time'.

Period 2: 'Sense-making' (July 2016)

Period 2 set the foundations for a visualisation approach to tool design, including the first attempts at representing linear and non-linear time in visual form. This visualisation took the form of 6 physical storyboards, each presenting a different temporal dimension within a generic electronic calendar backdrop. An example of two of the boards appears in Figures 2.1 & 2.2 below - these display the representation of 'interruptions' and 'control'.

Figure 2.1: Storyboard for temporal 'connections' and 'interruptions'

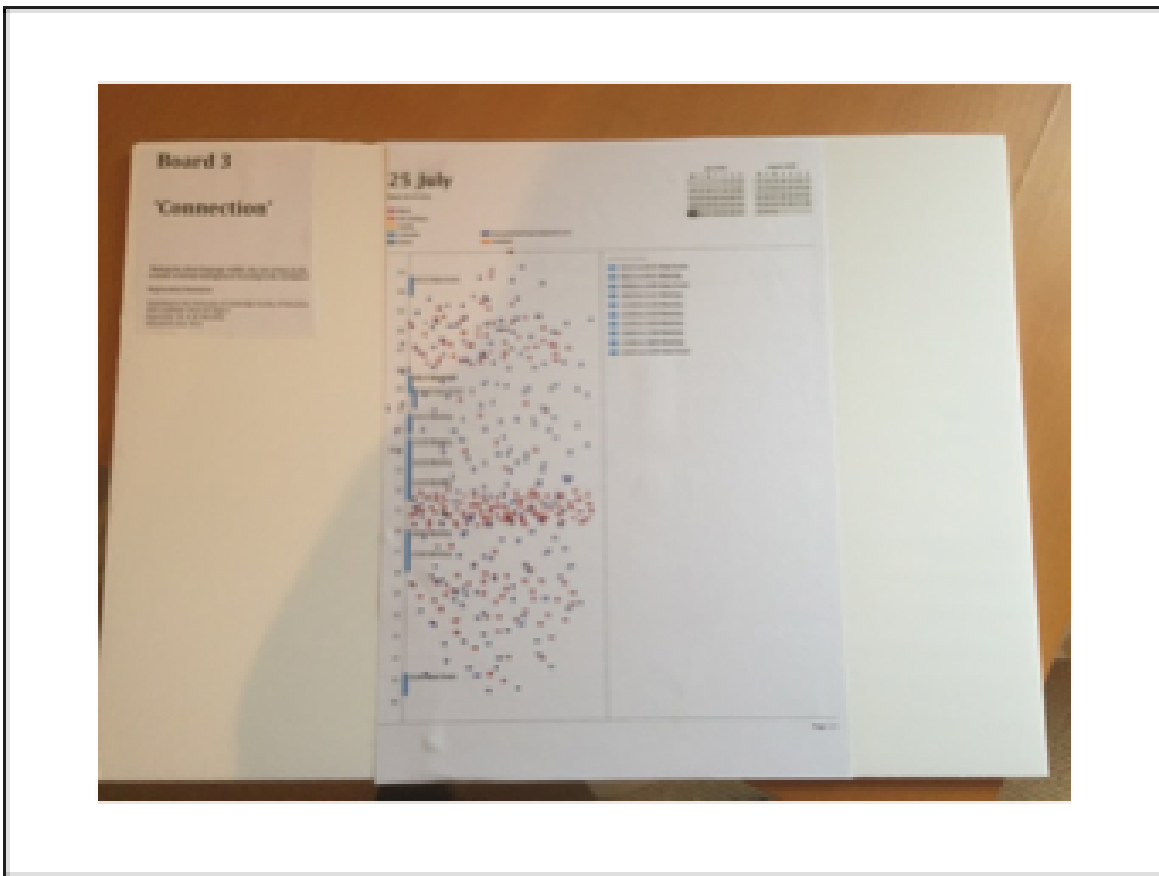
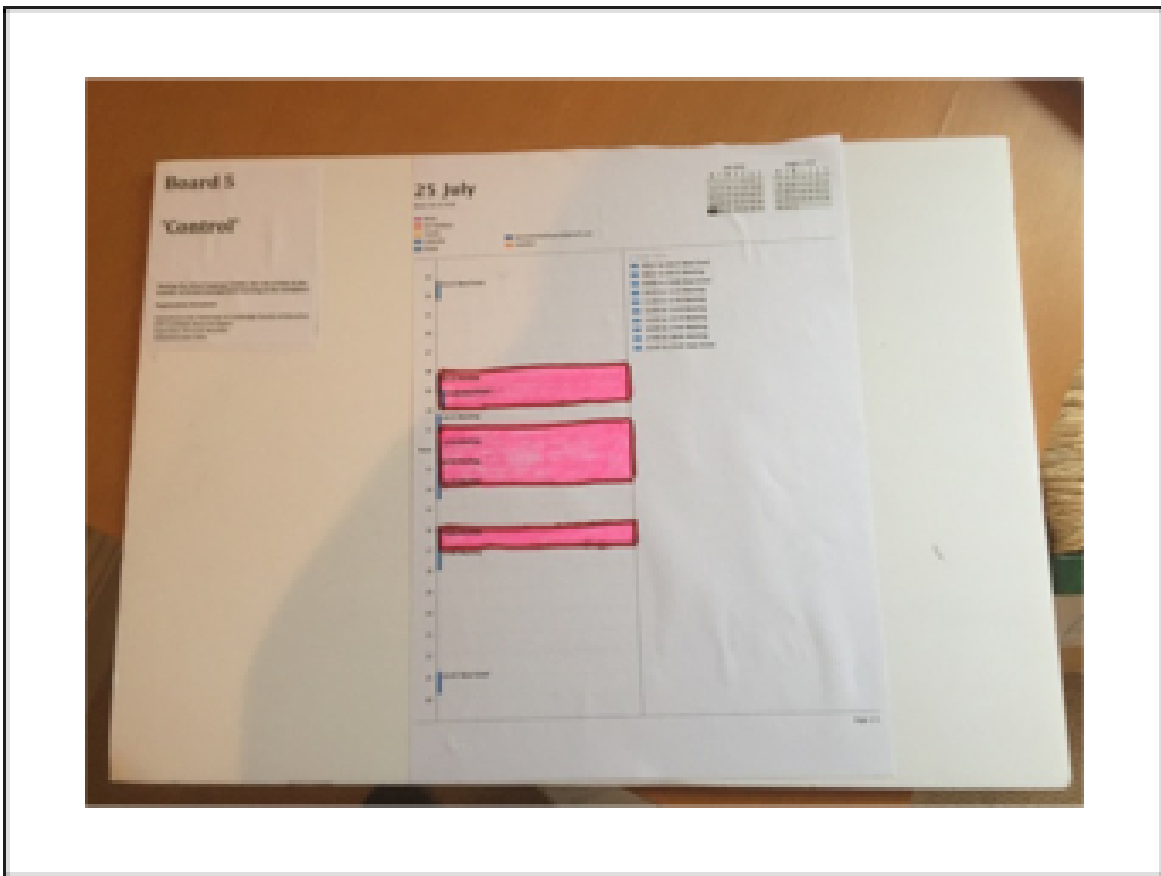


Figure 2.2: Storyboard for temporal 'control' (e.g. blocked off time in the calendar)



Figures 2.3 and 2.4 represent examples of the transition in the Pattern Language profile between Period 1 and Period 2. This displays the evolution of focus as the representation matures (e.g. towards increasing emphasis on the shared social activities of story-telling, persuasion and discussion).

Figure 2.3: Classification of 'Pattern Language' in Period 1

Active:

ACTORS OF ACTIVITIES describes the different types of activities that users are engaged in when they use Diagrams			AUTORS OF EXPERIENCES is used (that make up the preceding 3 profiles)			
[1] Interpretation activities: reading information structures			[2] Experiences of visibility			
This group of patterns describes the activities of diagram readers			[3] Experiences of intention			
IC	Search	IC2, IC4, IC5, IC6	IC2	The information you need is visible	IC2	Intention opportunities are evident
IC	Comparison	IC3, IC4, IC5, IC6	IC3	The overall story is clear	IC3	Actions are fluid, not awkward
IC	Sense-Making	IC2, IC3, IC4, IC5, IC6, IC7, IC8	IC4	Important parts draw your attention	IC4	Things stay where you put them
			IC5	The visual layout is concise	IC5	Accidental mistakes are unlikely
			IC6	You can see detail in context	IC6	Relevant actions clear what you do
					IC7	It is easy to refer to specific parts
[2] Constructive activities: building information structure			[3] Experiences of structure			
This group of patterns describes the different ways of manipulating diagrams			[3] Experiences of thinking			
IC	Incrementation	IC1, IC6	IC1	You can see relationships between parts	IC1	You don't need to think too hard
IC	Transcription	IC2, IC3, IC4, IC5, IC6, IC7	IC2	You can change your mind easily	IC2	You can read off new information
IC	Modification	IC3, IC4, IC5, IC6, IC7, IC8, IC9	IC3	There are cues from a thing you know to something you don't	IC3	It makes you stop and think
IC	Exploratory design	IC1, IC2, IC3, IC4, IC5, IC6, IC7, IC8	IC4	You can compare and contrast different parts	IC4	Elements mean only one thing
					IC5	You can draw it in play around
[3] Social activities: sharing information structure			[3] Experiences of meaning			
This group of patterns describes the activities of people who use diagrams in collaborative contexts			[3] Experiences of process			
IC	Illustrate a story	IC2, IC4, IC5, IC6, IC7, IC8	IC1	It looks like it describes	IC1	The order of tasks is natural
IC	Organise a discussion	IC3, IC4, IC5, IC6, IC7, IC8, IC9	IC2	The purpose of each part is clear	IC2	The steps you take match your goals
IC	Persuade an audience	IC3, IC4, IC5, IC6, IC7, IC8, IC9	IC3	Similar things look similar	IC3	You can try out a partial product
			IC4	You can tell the difference between things	IC4	You can be non-committal
			IC5	You can add comments	IC5	Repetition can be automated
			IC6	The visual connections are appropriate	IC6	The content can be preserved
					[7] Experiences of usability	
					IC1	You can extend the language
					IC2	You can resolve how it is interpreted
					IC3	You can see different things when you look back
					IC4	Anything not forbidden is allowed

Figure 2.4: Transition to classification of pattern language in Period 2

Period 1:								
PATTERN-1 (ACTIVITY) describe the different types of activities that users are engaged in when they use diagrams			PATTERN-2 (EXPERIENCE) is used (for making the preceding 1 profiles)					
(1) Interpretation activities: reading information structure This group of patterns describe the activities of diagram readers			(1) Experience of visibility M2 The information you need is visible M2 The overall story is clear M3 Important parts draw your attention M4 The visual layout is consistent M5 You can see detail in context			(2) Experience of interaction M2 Interaction opportunities are evident M3 Actions are (not) not advised M3 Things stay where you put them M4 Accidental mistakes are unlikely M5 Learn to understand what you do M6 It is easy to refer to specific parts		
(2) Constructive activities: building information structure This group of patterns describe the different ways of manipulating diagrams			(3) Experience of structure O2 You can see relationships between parts O2 You can change your mind easily O3 There are rules from a thing you know to something you don't O4 You can compare and contrast different parts			(4) Experience of thinking O2 You don't need to think too hard O3 You can read off new information O3 It makes you stop and think O4 Elements mean only one thing O5 You are clear if it plays around		
(3) Social activities: sharing information structure This group of patterns describe the activities of people who use diagrams in collaborative contexts			(5) Experience of meaning M2 It looks like it describes M2 The purpose of each part is clear M3 Similar things look similar M4 You can tell the difference between things M5 You can add comments M6 The visual annotations are appropriate			(6) Experience of process M2 The order of tasks is natural M3 The steps you take match your goals M3 You can't find a better product M4 You can be non-committal M5 Agreement can be automated M6 The content can be preserved		
S1 Illustrate a story M2, M4, M4, M3, M3 S2 Organise a discussion M3, M3, M3, M3, M3, M3 S3 Persuade an audience M3, M4, M3, M3, M3, M3						(7) Experience of usability O1 You can extend the language O2 You can realise how it is interpreted O3 You can see different things when you look back O4 Anything not/known is allowed		

Period 3: 'Credibility' (August 2016 - March 2017)

Period 3 sought to reproduce the storyboards in a professional format. This was driven by the need to display what a 'temporal tool' might look like in practice. My repeated references to 'non-linear time' were confusing to many at Forum, and this confusion prompted diverse and multiple interpretations of the study. Over a series of meetings in 2016/17, I worked with a colleague at Cambridge University to produce an online presentation tool that displayed the key elements of the storyboards. This model was employed over the coming months at a range of meetings at Forum to illustrate the potential for a credible (working) tool.

Figure 3.1: Tool presentation: linear time

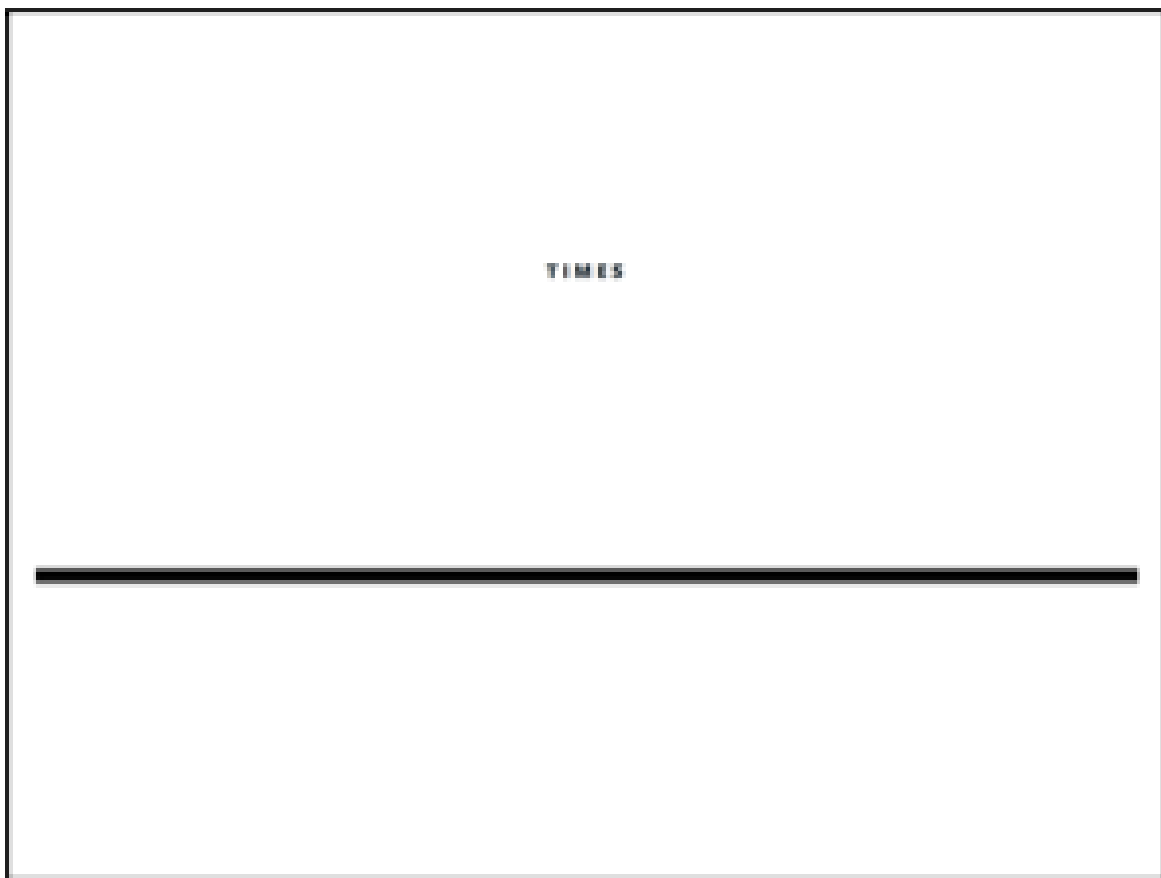


Figure 3.2: Tool presentation: linear time represented by the e-diary



Figure 3.3: Tool presentation: role of back-to-back meetings

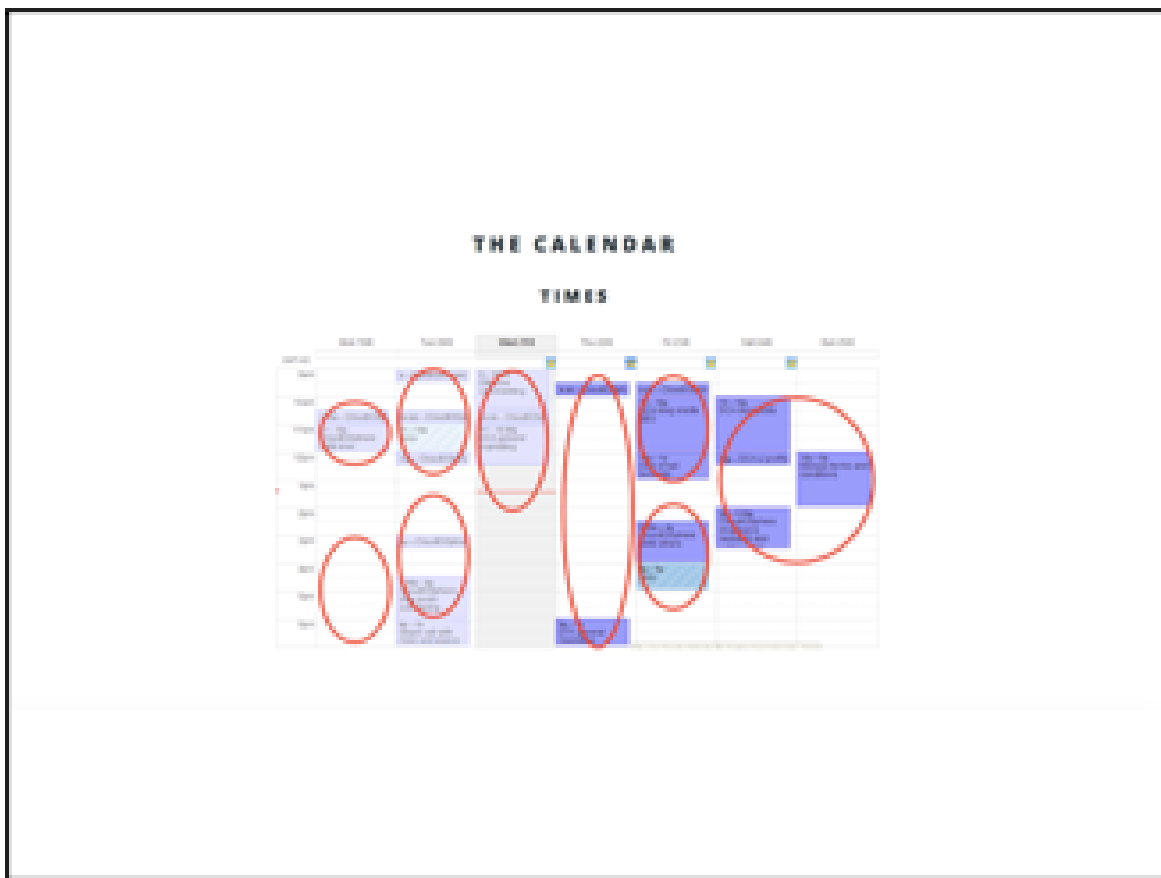
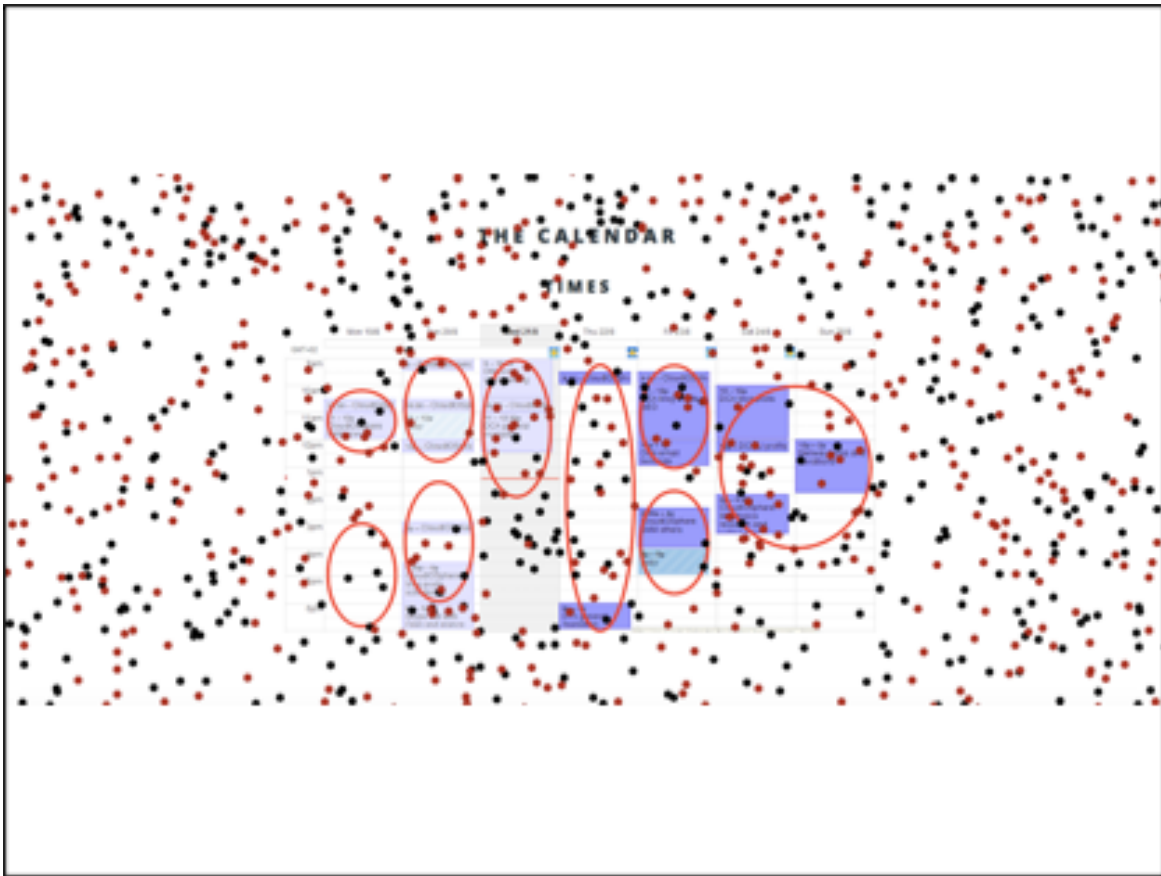


Figure 3.4: Tool presentation: time as interruptions



****Period 4: '**Construction' (April 2017- December 2017)**

The fourth period saw the first attempt at drawing up detailed plans for an interactive working tool. During this period, it was possible to triangulate the development of the tool with images of e-calendars provided by respondents at Forum. A redacted version of one of these images appears in Figure 4.1 below.

Figure 4.1: Image of e-diary provided by a respondent at Forum (redacted)

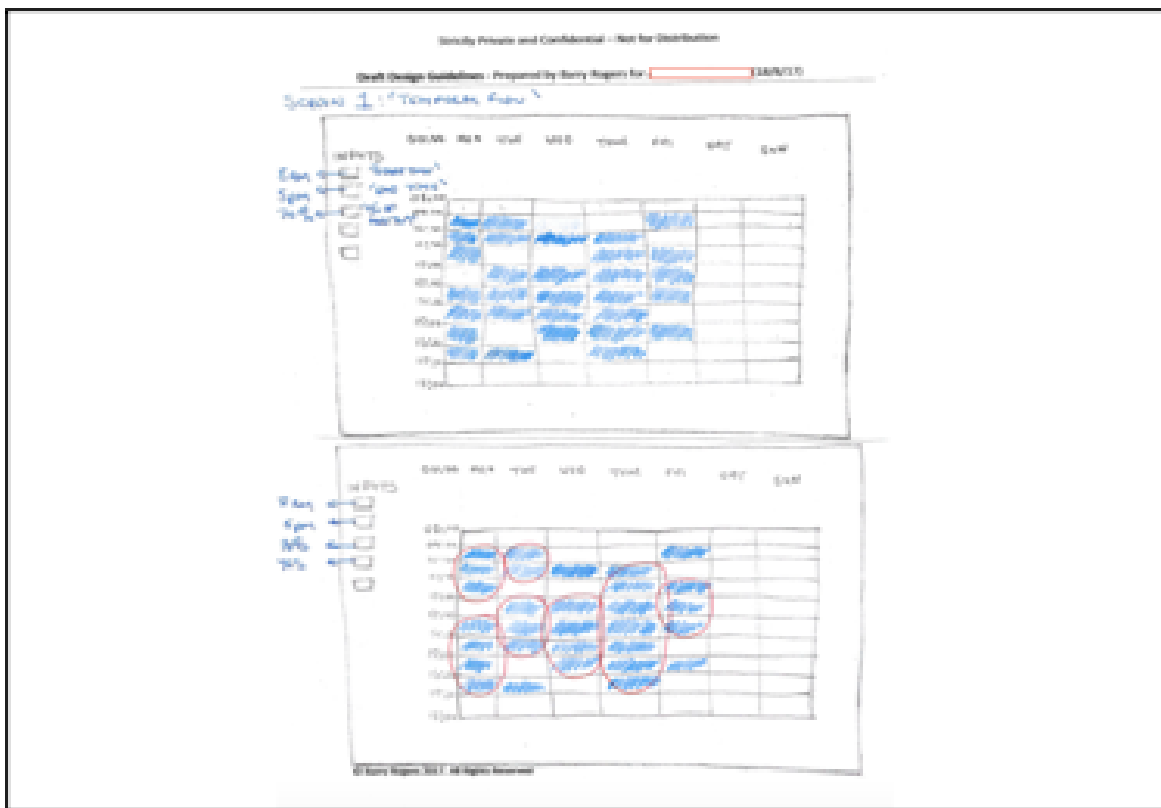


Figure 4.3: Hand-drawn visual - nature of interruptions

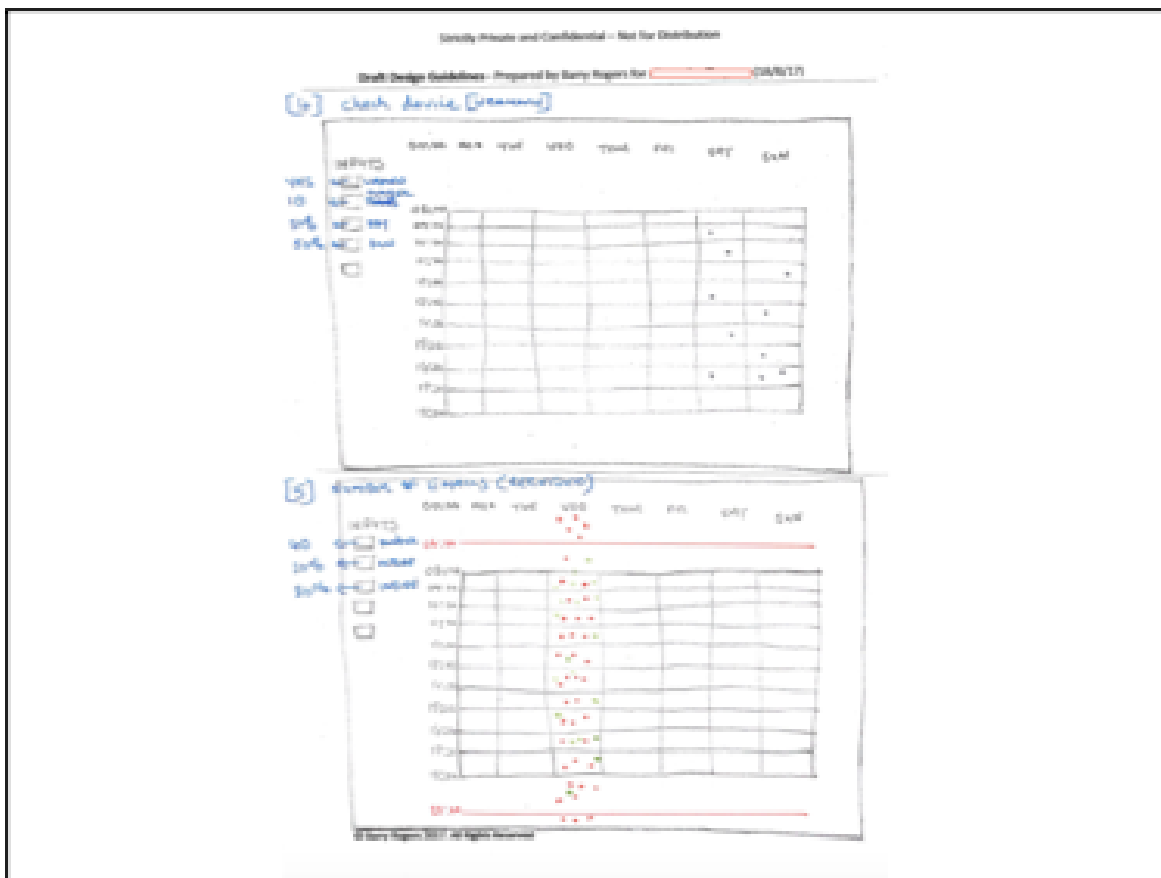


Figure 4.4: Hand drawn visual - temporal orientation

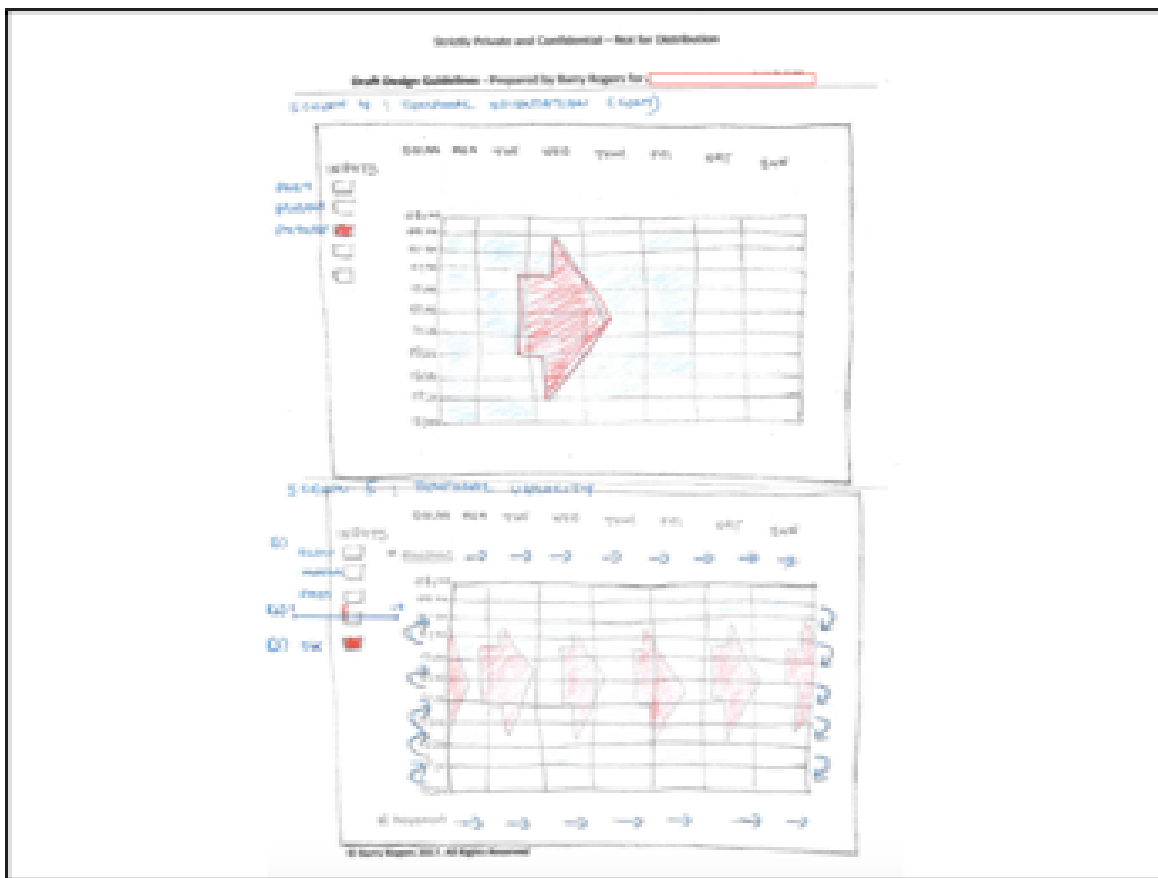
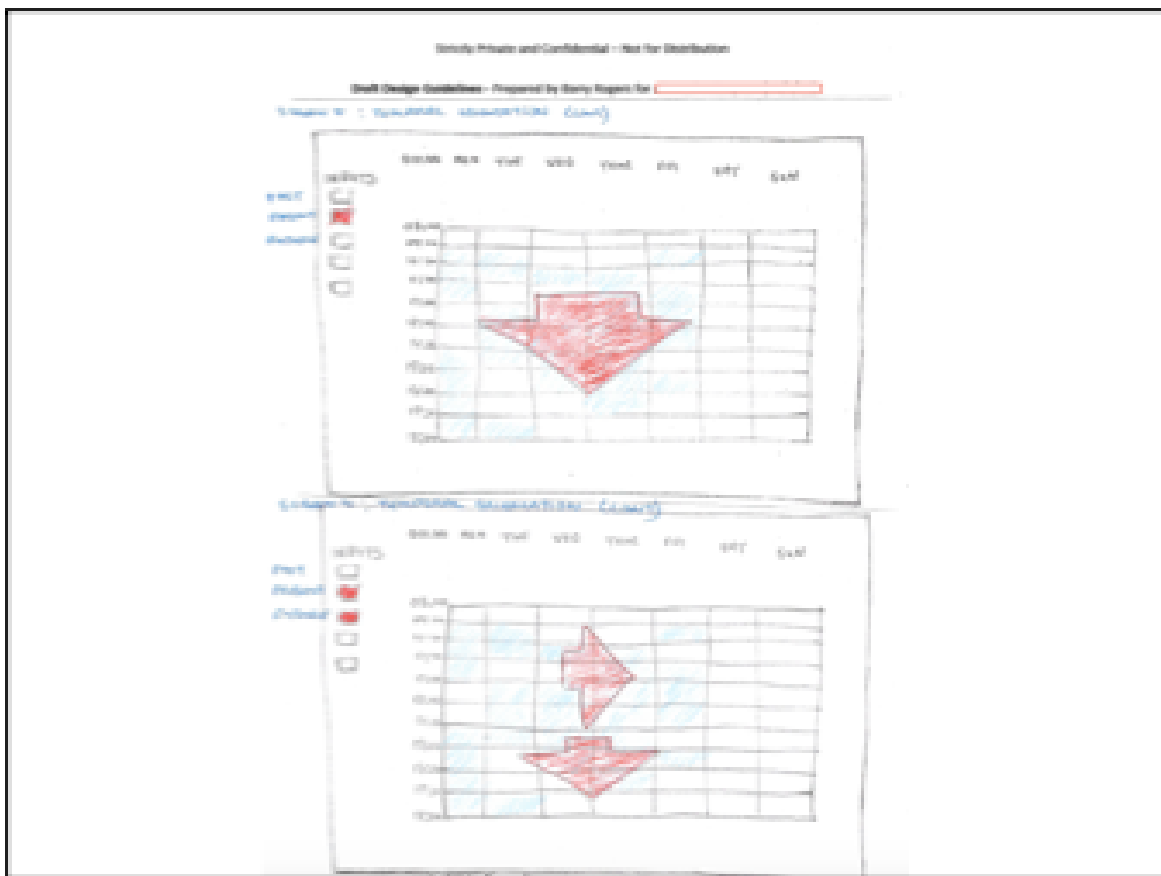


Figure 4.5: Hand drawn visual - temporal orientation (cont.)



Period 5: 'Operational simplicity' (January 2018 - August 2018)

An initial working model of the visualisation tool was completed in February 2018. Four updated versions of the tool were refined over the next five months following feedback from potential users. Example of the working model

The importance of visual impact became evident during this period. It was clear from early in the interview process that some temporal dimensions had more 'energy' than others, e.g. meetings and interruptions. This highlighted how certain diagrams seemed to attract the attention of users, drawing them in [VE3], making them think differently about their relationship with time [TE3], and most of all, starting the process of *play* with the dimensions [TE5]. This sparked a realisation that the sense-making of users [IA3] was tied to the *partial* use of the tool [PE3] (e.g. the user did not need to experience the whole process of visualisations and would most likely disengage after a relatively short period).

Figure 5.1: % of weekly meetings with contingent meetings (striped)

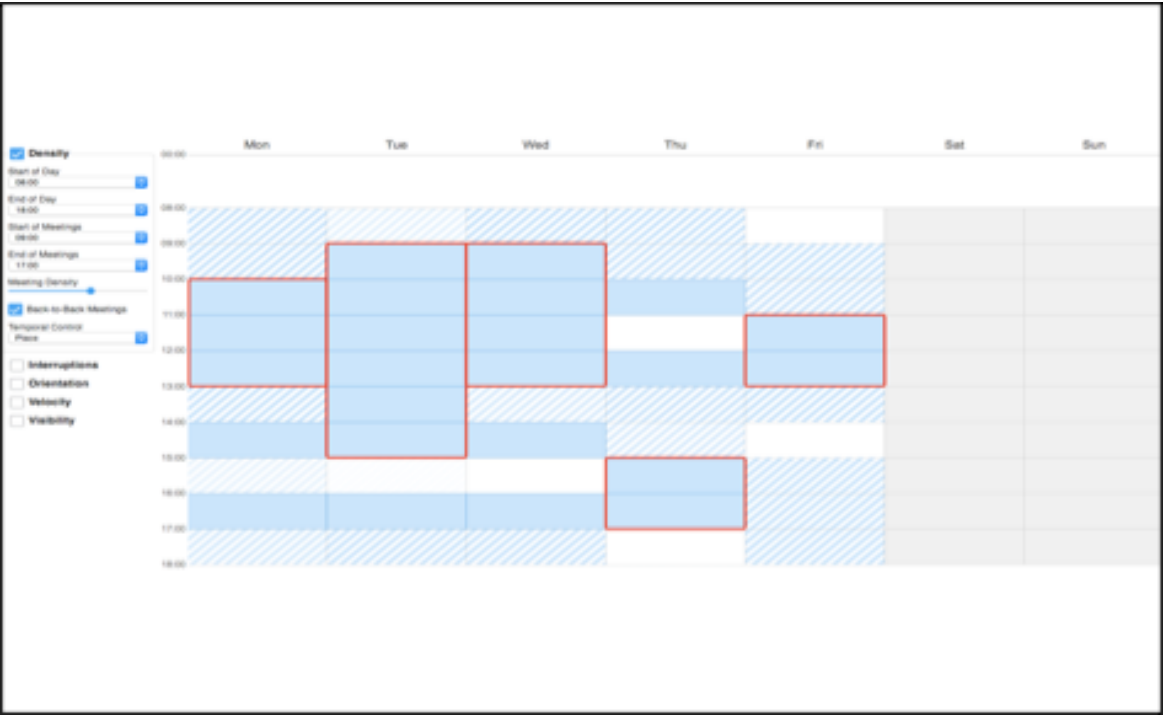


Figure 5.2: Number of e-mails received in a day

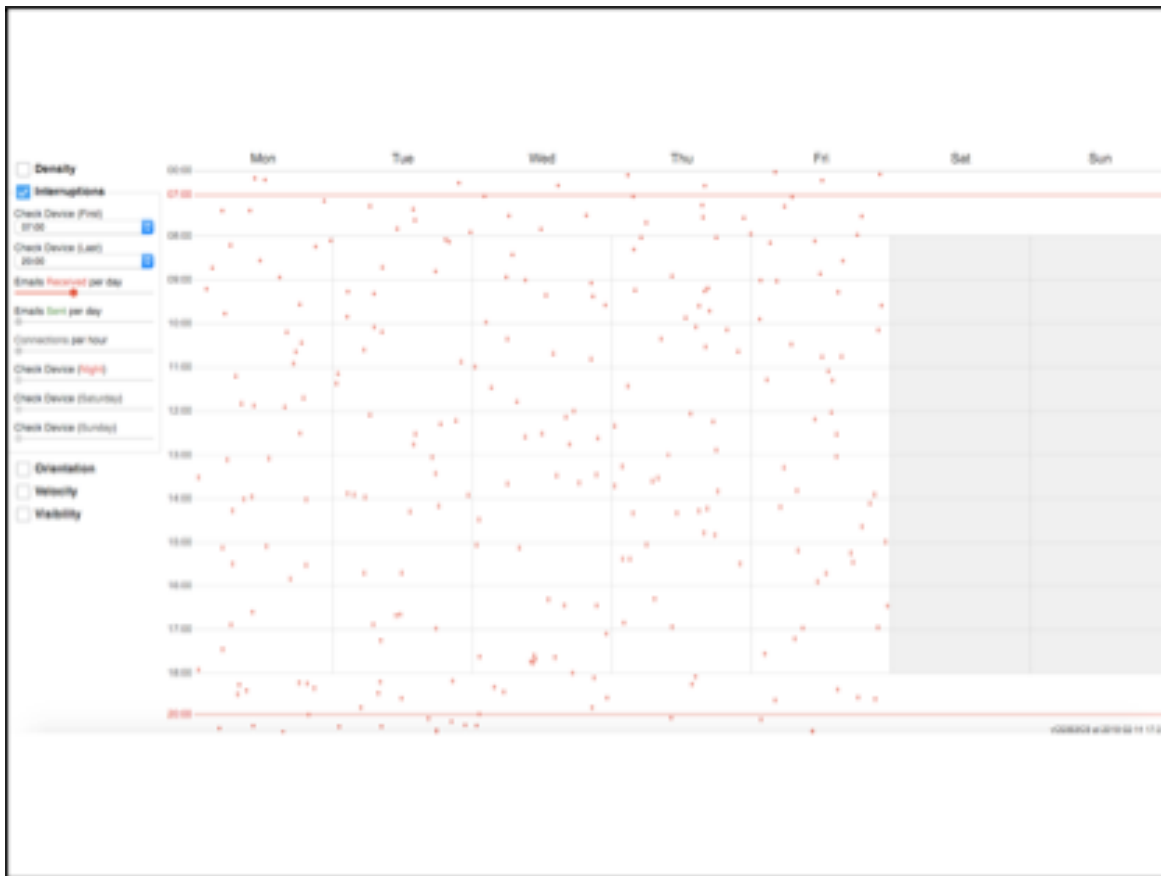


Figure 5.3: Number of e-mails sent in a day

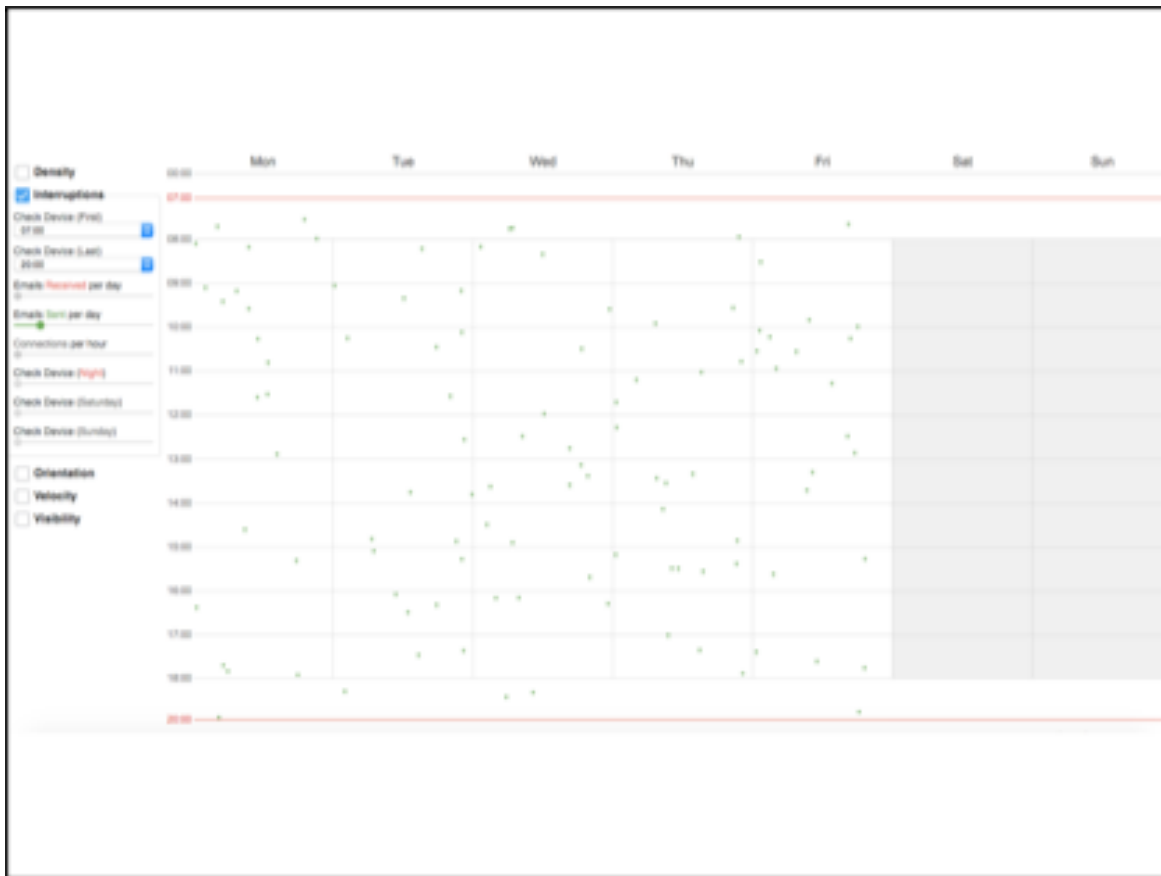


Figure 5.4: Number of interruptions in a day

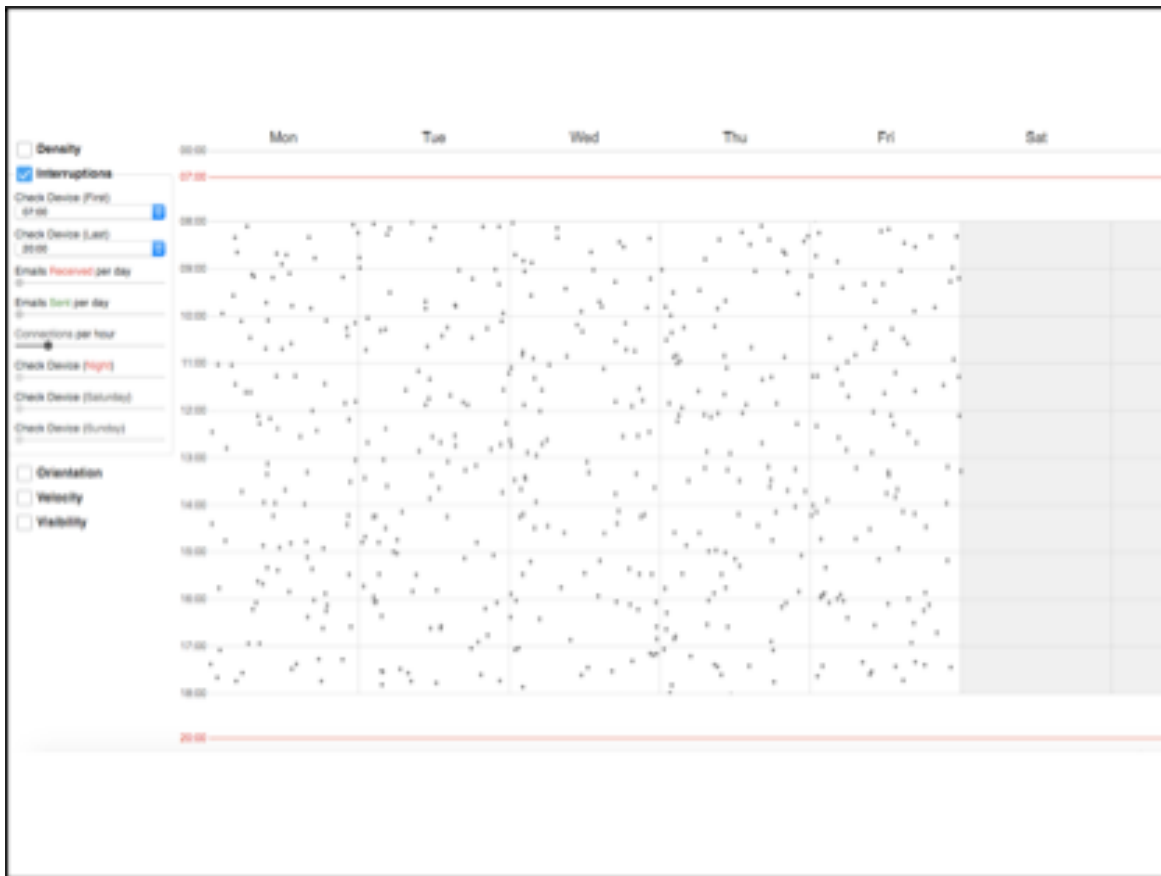


Figure 5.5: Start and end of the working day

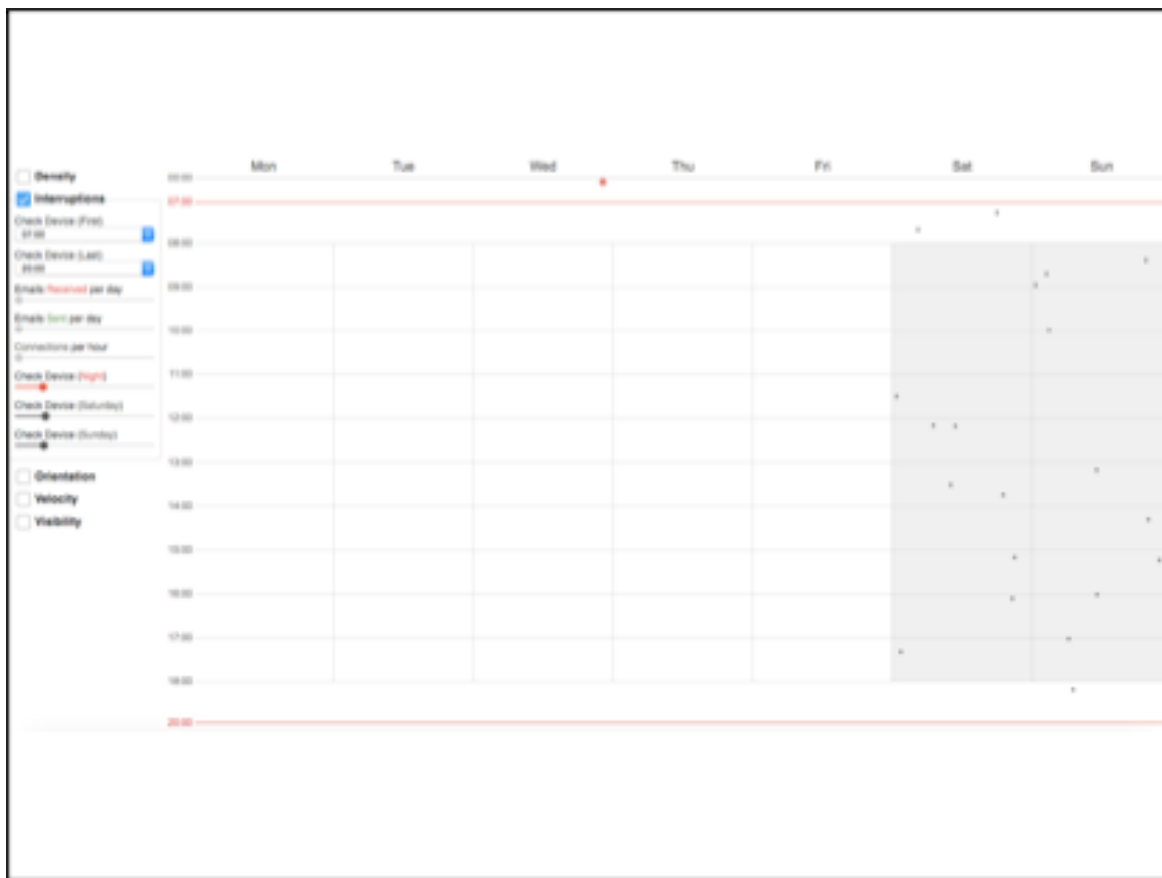


Figure 5.6: Combination of dimensions

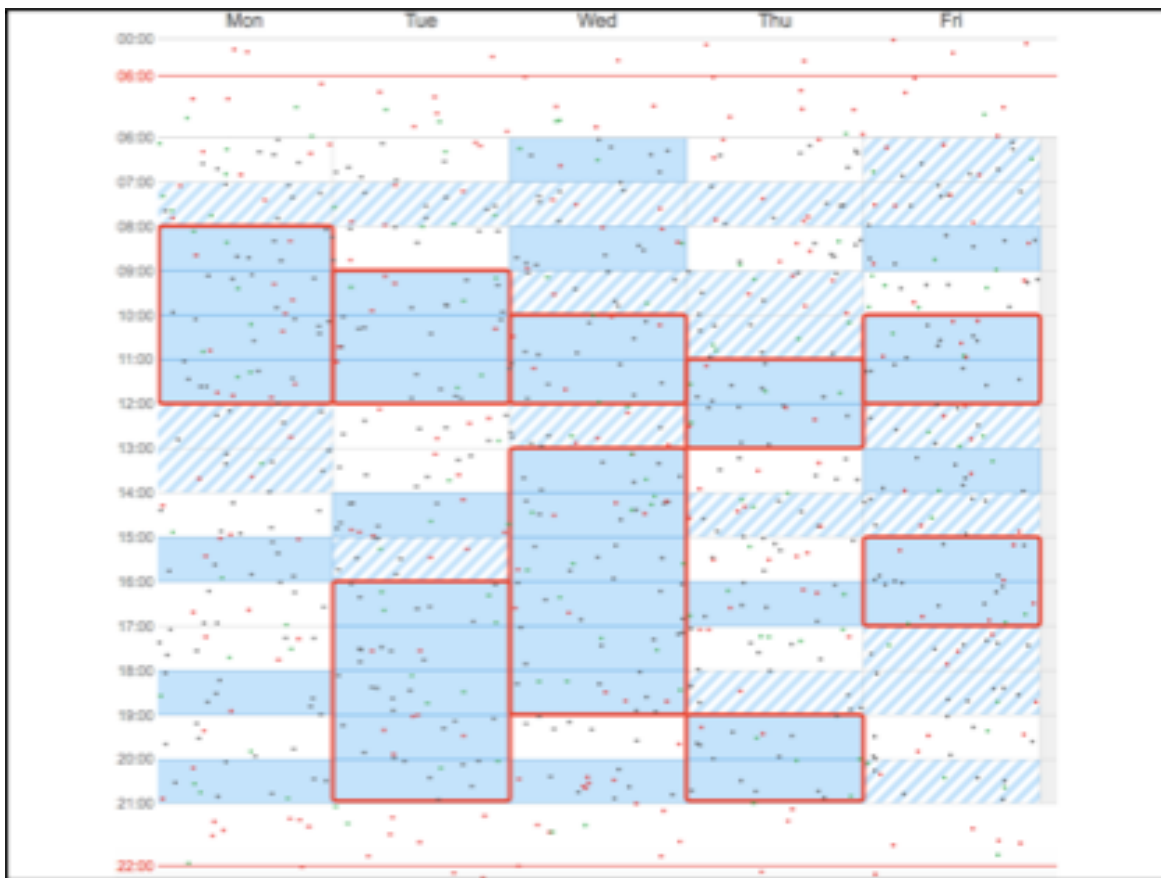


Figure 5.7: Pattern language characteristics during period 4

Period 4:					
PATTERNS OF ACTIVITIES describe the different types of activities that users are engaged in when they use diagrams			PATTERNS OF EXPERIENCE in use (that make up the preceding 3 profiles)		
(1) Interpretation activities: reading information structure			(1) Experiences of visibility		(4) Experiences of interaction
This group of patterns describes the activities of diagram readers			VE1 The information you need is visible		IE1 Interaction opportunities are evident
IC Search	VE1, VE4, SE1, TE4		VE2 The overall story is clear	IE2 Actions are fluid, not awkward	
IC Comparison	VE1, SE4, ME4, TE1		VE3 Important parts draw your attention	IE3 Things stay where you put them	
IC Sense-making	VE1, VE1, SE1, ME1, ME1, TE1, TE1		VE4 The visual layout is concise	IE4 Accidental mistakes are unlikely	
			VE5 You can see detail in context	IE5 Easier actions stem what you do	
				IE6 It is easy to refer to specific parts	
(2) Construction activities: building information structure			(2) Experiences of structure		(3) Experiences of thinking
This group of patterns describes the different ways of manipulating diagrams			SE1 You can see relationships between parts		TE1 You don't need to think too hard
OC Transcription	ME1, IE1, IE1, PE1, PE5		SE2 You can change your mind easily	TE2 You can read off new information	
OC Modification	SE1, ME5, ME4, TE1, ME1, OE1		SE3 There are routes from a thing you know to something you don't	TE3 It makes you stop and think	
OC Exploratory design	TE1, ME1, ME4, OE1, OE1, OE4		SE4 You can compare and contrast different parts	TE4 Elements mean only one thing	
				TE5 You are drawn in to play around	
(3) Social activities: sharing information structure			(3) Experiences of meaning		(4) Experiences of process
This group of patterns describes the activities of people who use diagrams in collaborative contexts			ME1 It looks like it describes		PE1 The order of tasks is natural
SC Illustrate a story	VE1, VE4, OE1, TE1, OE1		ME2 The purpose of each part is clear	PE2 The steps you take match your goals	
SC Organise a discussion	ME1, OE1, TE1, PE1, PE4, OE4		ME3 Similar things look similar	PE3 You can try out a partial product	
SC Persuade an audience	VE1, SE4, ME2, ME5, ME1, TE1, TE1		ME4 You can tell the difference between things	PE4 You can be non-committal	
			ME5 You can add comments	PE5 Negotiation can be automated	
			ME6 The visual connections are appropriate	PE6 The content can be preserved	
				(7) Experiences of creativity	
				CE1 You can extend the language	
				CE2 You can redefine how it is interpreted	
				CE3 You can use different things when you look back	
				CE4 Anything not forbidden is allowed	

Figure 5.8: Transition to Pattern Language characteristics in Period 5

Period 5:						
PATTERNS OF ACTIVITIES describe the different types of activities that users are engaged in when they use diagrams			PATTERNS OF EXPERIENCE in use (that make up the preceding 3 profiles)			
[1] Interpretation activities: reading information structures			[1] Experiences of visibility			
This group of patterns describes the activities of diagram readers			[4] Experiences of interaction			
IA1	Search	VE1, VE4, SE1, TE4	VE1	The information you need is visible	IE1	Interaction opportunities are evident
IA2	Comparison	VE3, SE4, ME4, TE3	VE2	The overall story is clear	IE2	Actions are fluid, not awkward
IA3	Sense-making	VE2, VE3, SE2, ME1, ME3, TE3, TE5	VE3	Important parts draw your attention	IE3	Things stay where you put them
			VE4	The visual layout is concise	IE4	Accidental mistakes are unlikely
			VE5	You can see detail in context	IE5	Easier actions steer what you do
					IE6	It is easy to refer to specific parts
[2] Construction activities: building information structure			[2] Experiences of structure			
This group of patterns describes the different ways of manipulating diagrams			[3] Experiences of thinking			
CA1	Incrementation	IE1, PE6	SE1	You can see relationships between parts	TE1	You don't need to think too hard
CA2	Transcription	ME2, IE3, IE5, PE2, PE5	SE2	You can change your mind easily	TE2	You can read off new information
CA3	Modification	SE1, ME3, IE4, TE1, PE1, CE1	SE3	There are routes from a thing you know to something you don't	TE3	It makes you stop and think
CA4	Exploratory design	TE1, PE1, PE4, CE2, CE3, CE4	SE4	You can compare and contrast different parts	TE4	Elements mean only one thing
					TE5	You are drawn in to play around
[3] Social activities: sharing information structure			[3] Experiences of meaning			
This group of patterns describes the activities of people who use diagrams in collaborative contexts			[4] Experiences of process			
SA1	Illustrate a story	VE2, VE4, IE6, TE1, CE3	ME1	It looks like it describes	PE1	The order of tasks is natural
SA2	Organise a discussion	ME3, IE2, TE2, PE1, PE4, CE4	ME2	The purpose of each part is clear	PE2	The steps you take match your goals
SA3	Persuade an audience	VE3, SE4, ME2, ME6, IE3, TE3, TE5	ME3	Similar things look similar	PE3	You can try out a partial product
			ME4	You can tell the difference between things	PE4	You can be non-committal
			ME5	You can add comments	PE5	Aspiration can be automated
			ME6	The visual connotations are appropriate	PE6	The content can be preserved
					[5] Experience of creativity	
					CE1	You can extend the language
					CE2	You can redefine how it is interpreted
					CE3	You can see different things when you look back
					CE4	Anything not forbidden is allowed

****Period 6: '**Use' (September 2018 - March 2019)**

The evaluation phase of the tool (the PPP) took place after the September 2018 *Impact* programme.

During this period, I employed the version of the working tool seen in Period 5. I also used a range of materials (e.g. articles and visuals) that aimed to help respondents make sense of the visuals.

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