DESIGNING THE FUTURE PERFECT: DEVELOPING A TEMPORAL UNDERSTANDING OF THE INTENTIONALITY AND GENERATIVITY OF ORGANISATIONAL PRACTICES

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Abstract

According to Barbara Adam, "time is such an obvious factor in social science that it is almost invisible". Indeed, organisational researchers have relied upon taken-for-granted assumptions about the nature of time and have built theories that are frequently silent about the temporal nature of our being in the world. This paper addresses two key questions about time: (i) which formulation(s) of time are most useful in our research, and (ii) how might we use such formulations to build better theory? In addressing the first question, two main formulations of time are examined. The first is frequently associated with research in the natural sciences and relates time to the sense of passing time expressed in successive readings of the clock. The second is typically associated with research in the social sciences and relates time to the experience of purposive, intentional, goal-directed behaviour. In order to build better theory, organisational scholars are encouraged to identify and classify the formulations of time that underpin their research, to evaluate the fit between those temporal assumptions and the goals of their research, and to investigate the extent to theories that are based on different assumptions about time can be combined or integrated.

Keywords: Temporality, Materiality, Theorising, Organisational Studies

1   Introduction

And the end and the beginning were always there
Before the beginning and after the end.
And all is always now

-      T.S. Eliot

In the realm of human existence, there can be few things as profound and significant as time. Time is an inherent quality of human life (Hassard, 1999); our lives unfold in time and all human activity has a temporal dimension (McGrath,1988, p. 7). In this sense, the temporal nature of our being in this world fundamentally shapes our experience and knowledge of it (Heidegger, 1927). Indeed the temporality of human life differs from the temporality of other beings or objects in that we direct ourselves toward intended futures according to our perception of things of the present moment and yet are bound by the past and our recollection of it (Bluedorn, 2002). In this sense, the things which make for life, which make life different from physics, require for their description a sense of time which encompasses memories in the present of the past as well as expectations and desires in the present of the future (Jaques, 1988, p. 4). Fundamentally, then, we can recognise in the human mind, a "marvellous capacity" to make sense of a lifetime's collection of experience and to connect patterns from the past to the present and future (Leonard-Barton and Sensiper, 1998, p. 112) and we can say that human temporality has more to do with intention (the temporality of Becoming) than succession (the temporality of Being). However, our capacity to unravel the enigma of time remains limited because our consciousness moves along it (Wells, 1895, p. 6): its greatest paradox is that even as the past is gone and the future yet to come, they both exist in the present moment for us.

Notwithstanding this *every*-day understanding and experience of time, conceptualisations of time in organisational studies, and in the natural/social sciences more generally, have long been dominated by a narrower view of time, commonly described as objective time, external time, linear time or clock time. Nevertheless, it is clear that organisational researchers in general are fundamentally interested in better understanding the intentful interactions of organisational actors and that information systems scholars in particular are specifically interested in better understanding the relationship between time and technology at work (cf. Barley, 1986; Lee, 1999; Nandhukumar, 2002; Shen *et al.*, 2014). From a more practical perspective, organisations operating in today's high velocity business environment (Eisenhardt, 1989) are under increased pressure to work at speed and for many. In many cases, competitive survival has become a question of delivering projects on time (Staats *et al.*, 2012) and so time itself has become a fundamental business performance indicator (Ciborra, 1999). For these reasons, organisational scholars have long lamented the paucity of research on time and technology in the field (Shen et al., 2014; Nan and Harter, 2009; Saunders, 2007; Lee and Liebenau, 2000). In turn, organisational theory remains largely silent about the temporal nature of our being in the world and its impact on organisational phenomena. Indeed, organisational scholars rarely articulate or question the assumptions they make about time in their research. For example, organisational theorists rarely question or make explicit the casual logics used to build theories which frequently assume that for A to have caused B, A must have occurred prior to B. Similarly, theories remain largely silent about the temporal nature of our being in the world and its impact on phenomena.

This paper therefore addresses two key questions about time and theory in research: (i) which formulation(s) of time are most useful for the discipline as a whole, and (ii) how might we use such formulations to build better theory in IS?

2   Background

The nature of time has been a central and continuous subject of controversy for thousands of years (Jaques, 1982, p. xi) with philosophers and scientists alike debating the nature of time, our experience of time and its association with causality (Hassard, 1999, p. 327). Today, the concept of time spans all disciplines and is intimately connected to a variety of other fundamental concepts including form, motion, being, and causality. Yet many paradoxes remain unresolved. At an ontological level, we may ask if time exists or if it is simply the perception of motion? Does time flow, and if it does, can it flow in more than one direction? At an epistemological level, we may ask: what can we know of time and what impact does our understanding of time have on our efforts to build theories to better explain and predict empirical phenomena? At a methodological level, we may ask: is it possible or useful to try to measure equal spans of time?

Several formal definitions of time have also been proposed. Time has been defined as 'a non-spatial continuum in which events occur in apparently irreversible succession from the past through the present to the future' (Ancona *et al*, 2001, p. 513). Similarly, Jaques (1988) defines time as the "continuity of existence of things" (p. xii). His argument is that the assumption of the continuity of things is necessary to describe events, process, or change. In this sense, in order to define an event or a process or a change requires the conception of the same things continuing to exist but continuously modifying their position, or condition, or both (ibid). In addition, scholars have also distinguished between numerous different types of time: subjective time, real time, objective time, linear time, cyclical time, proper time, absolute time, relative time, external time, internal time, biological time, psychological time, anthropological time, clock time, intuitive time etc. (Jacques, 1988, p. 31; cf. Fraser, 1966). Various classifications of time have been proposed. The majority of these are dichotomous. Absolute time is contrasted with relative or relational time. Linear time is contrasted with cyclical time. Objective time is contrasted with subjective time. Fungible time is contrasted with epochal time. Several tripartite classifications have also been proposed. Looking just to temporality research conducted in organisational settings, Schriber and Gutek (1987) describe organisational temporality using 13 dimensions, Lee and Liebenau (2000) use 6 dimensions, Ballard and Seibold (2003) develop a 10 factor model of organisational temporal experience and Ancona *et al.* (2001) identify three distinct variable categories.

In research, time is generally treated as a given and is conceptualised as a linear continuum of infinitely divisible, quantifiable units that are homogeneous, uniform, regular, precise, deterministic, and measurable (Saunders, 2007). Clearly, there are cases where such a conceptualisation of time is appropriate and useful. However there are many areas of research where time is either a key motivating factor or a key dependent variable. For example, in analytics the primary measure of emerging systems is their ability to search a monumental amount of data in fractions of a second (Barlow, 2013). Similarly, in systems development the key tenet underpinning the emergence of contemporary methods such as agile and lean is a need to deliver working software fast and to respond to change almost immediately (Nandhakumar, 2002; O Riordan *et al.*, 2012). However, there is a dearth of research in these areas that addresses the underlying complexities and nuances of temporality (Nandhakumar, 2002; O Riordan *et al.*, 2012). In fact there are actually very few studies that validate the temporal aspects of these claims at all (Shen *et al.*, 2014).
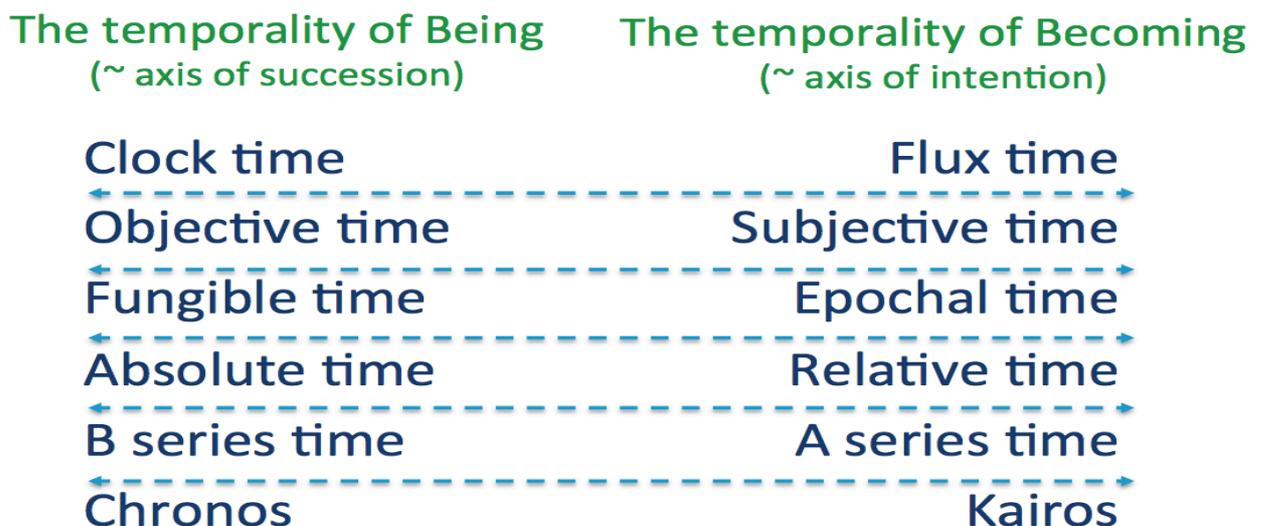
Where alternate conceptualisations of time are used, it is not clear how results might be integrated to facilitate a more cumulative approach to theory building. As a result, studies frequently rely upon myopic and unnecessarily narrow measures of time such as time-on-task or elapsed time (Shen *et al.*, 2014; Saunders, 2007). In so doing, researchers are at risk of losing out on significant opportunities to enrich our understanding of the empirical world. Indeed, if one of the ultimate goals of research is to support the efforts of intentional and goal-oriented agents in their efforts to act upon the world, then researchers are clearly in danger of conceptualising time in a manner that is actually inappropriate for the field.

In order to address these issues, the remainder of this paper focuses on two key questions: (i) which formulation of time, and more specifically, which approach to classifying time is most useful for the discipline as a whole, and (ii) how might we use such a classification to build better theories in IS?

3   Conceptualising time in Organisational Studies

In order to study the temporal aspect of nature effectively, scholars have long "strained their ingenuity to devise means whereby the peculiar characteristics of time are either ignored or distorted" (Whitrow, 1980, p. 2). Though we may lament this tendency to either ignore time or to subordinate the temporal to the spatial (i.e. to try to 'map' or otherwise 'spatialise' time), the truth is that "great successes were achieved when things were made to stand still long enough to be counted and measured" (Jaques, 1988, pp. 8-9). Therefore, our argument is not a supremacist one: it is not that there is a particular conceptualisation of time that is 'best' for research as a whole. Indeed, at the level of individual studies and at the level of individual streams of research, there may be sound reasons for adopting one conceptualisation of time over another or for overlooking time entirely. However, our concern is to ensure that researchers' conceptualisations of and assumptions about time are based on more than disciplinary convention. In particular, our goal is to ensure that researchers' conceptualisations of, and assumptions about, time are driven by the goals of their research and are also based upon a consideration of the inherent properties of time.

To that end, we feel that researchers may find it useful to distinguish between the *temporality of Being* and the *temporality of Becoming* (see Figure 1).

The temporality of Being (~ axis of succession)	The temporality of Becoming (~ axis of intention)
Clock time	Flux time
Objective time	Subjective time
Fungible time	Epochal time
Absolute time	Relative time
B series time	A series time
Chronos	Kairos

Figure 1 *Aligning the temporality of Being and the temporality of Becoming with alternate conceptualisations of time*

This distinction is most clearly articulated by Jaques (1988) but can actually be traced back to the Ancient Greeks:

i)   The *temporality of being*, which Jacques (1988) describes as the temporal axis of succession, relates time to the sense of passing time expressed in successive readings of the clock. This aspect of time is inherited from Parmenides, who held that things *are;* Being *is* and will remain so; all can be known and all is certain. It has an affinity with the natural sciences and is

exclusively associated with our ideas of earlier and later, before and after, temporal disconti-nuity and atomism, constancy and permanence (Jaques, 1988, p. xii).

ii) The *temporality of Becoming*, which Jaques (1988) describes as the temporal axis of intention, relates time to the experience of purposive, intentional, goal-directed behaviour and is con-cerned with the flux time in which future, present and past do seem to flow from one to the other (Jaques, 1988, p. 13). This aspect of time is inherited from Heraclitus, who held that all is flowing, changing, transforming, never still, opposite becoming opposite, the only reality being the reality of Becoming itself. It has an affinity with the social sciences and is exclu-sively associated with our ideas of past, preesnt and future, passage and direction, flux and change, durée and continuity (Jaques, 1988, p. xii)

4   Building better theory in Organisational Studies

Using this distinction between the temporality of Being and the temporality of Becoming, researchers can start to examine the conceptualisations of time that underpin their work in general and their theo-rising in particular. More specifically, researchers can distinguish between:

- Theories based on the elimination of time
- Theories based on the temporality of being
- Theories based on the temporality of intention

Having done so, researchers can map the goals of theories to the conceptualisations of time underpin-ning them. Table 1 provides a brief illustration of how Gregor's (2006) classification of theoretical goals might be leveraged to facilitate this kind of analysis. This kind of analysis can help researchers to develop richer conceptualisations of temporality within each column and to build theories cumula-tively across each row using either an integrationist or pluralist approach. It may also help researchers to identify instances where the goals of a given theory are at odds with the temporal assumptions upon which it is based and may also serve as the basis upon which to resolve any apparent contradictions that appear in individual studies within and across cells.

	Analysis	Explanation	Prediction/prescription
… based upon the eliminate time	Descriptive theoretical statements that neither relate to temporal phenomena nor are bounded by them	Explanatory theoretical statements about how and why things happen that neither relate to temporal phenomena nor are bounded by them	--
… based upon the *temporality of being*	Descriptive theoretical statements that relate to the sense of passing time	Explanatory theoretical statements about how and why things happen that relate to the sense of passing time	Predictive theoretical statements about what will happen in the future if certain preconditions hold that inherently relate to the sense of passing time
… based upon the *temporality of becoming*	Descriptive theoretical statements that relate to the experience of purposive, intentional, goal-directed behaviour	Explanatory theoretical statements about how and why things happen that relate to the experience of purposive, intentional, goal-directed behaviour	--

Table 1 Mapping the goals of theories to the conceptualisations of time underpinning them

5   Conclusion

Despite its importance, researchers have traditionally relied upon taken-for-granted assumptions about the nature of time that originate in the natural sciences, have utilised narrow conceptualisations of time in their research and have built theories that are frequently silent about the temporal nature of our being in the world. Yet even in the natural sciences, an exclusively atomic view of a world of constant things in space is now considered untenable as a dominant philosophical view of the world and actually harmful (Jaques, 1988). To address this issue, this paper presents our initial efforts to identify the formulation(s) of time that are most useful for the discipline as a whole and to specify how we might use such formulations to build better theory in IS. Specifically, our proposal is that researchers should be encouraged to identify the formulations of time that underpin their research, to evaluate the fit between those temporal assumptions and the goals of their research, and to investigate the extent to theories that are based on different assumptions about time can be combined or integrated. Our hope is that this work can contribute to ongoing discussions about the future of theory by highlighting the existence of multiple views of time, challenging researchers to explore the latent assumption about the nature of time that underpin their work, and demonstrating the need to build theories based on multiple views of time.

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