



Re-creating organisational routines through a project life cycle transition: An empirical case of an infrastructure project

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Abstract

While existing approaches to understanding the project life cycle have focused on wider conceptualisations of its representation, this article identifies how project organisations recreate patterns of action - organisational routines - as they transition across predefined life cycle stage boundaries. We present the findings of an autoethnographic empirical study and through the lens of 'routine dynamics' contribute to the project management literature by identifying of a five stage '*process model of transitioning*' and the generative mechanisms involved in re-creating patterns of action.

Keywords: Transition, organisational routines, project organising, project life cycle, information.

Introduction

The life cycle model has become a ubiquitous feature in the organisation, governance and management of projects and seeks to represent the predefined 'actions' necessary to process information and transition a project organisation through controlled stage gates that measure the performance of the organisation in achieving its predefined goals (Söderlund, 2012; Morris, 2013; Winch, 2010; Cooper, 2008). In the United Kingdom's Rethinking Project Management research Network, practitioners identified the growing complexity in all aspects of projects. Set against this backdrop, the Network questioned the conceptual 'representation' of the project life cycle model as one that is only a partial view of reality. In doing so they opened a call for further theorising on the patterns of action among project participants as they move through the project life cycle (Winter, et. al., 2006).

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3 A number of organisational scholars within project management have identified
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5 ‘organisational routines’ (Nelson and Winter, 1982; Feldman and Pentland, 2003; Parmigiani
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7 and Howard-Grenville, 2011) as being a useful theoretical construct to explore patterns of
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9 action in project organisations (Davies et. al., 2017; Samset and Volden, 2016; Eriksson, 2015;
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11 Bresnan et al., 2005; Bygballe and Swärd, 2019). As highlighted in the call for papers for this
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13 edition, ‘transition-related project phenomena remain remarkably under-investigated’ and that
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15 despite recent efforts to understand the transition through the life cycle, such as decisions
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17 between the temporary and the permanent organisation (Jacobsson et al., 2013), transitional
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19 rituals at stage boundaries (van den Ende and van Marrewijk, 2014), and handover to
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21 operations (Zerjav, et. al., 2018), what is lacking is empirical evidence of ‘how’ project
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23 organisations accomplish the re-creation of these patterns of action as they transition across an
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25 ex-ante defined life cycle stage boundary. The research question then becomes “How are
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27 routines re-created through life cycle stage transitions in a project organisation?”
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34 This paper responds to this call and answers the research question by empirically examining
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36 the case study of a public infrastructure transport project, the Bank Station Capacity Upgrade
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38 (BSCU) project, as the senior management team transitioned from the front-end definition
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40 stage, to the execution stage. The first author of this paper was the clients project manager for
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42 this project, which afforded the opportunity to undertake an autoethnographic study of
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44 transition. Infrastructure projects are large, uncertain and complex endeavours involving the
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46 exchange of large amounts of information between multiple participants from both public and
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48 private organisations. Participants, such as designers and contractors, come together and
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50 disband at different stages of the project life cycle, and where their activities at the end of one
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52 stage often overlap with that of the next (Söderlund et. al., 2017). Such projects therefore offer
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54 an interesting research site for exploring how patterns of action are re-created at life cycle stage
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56 transitions. We contribute to the project management literature by exploring life cycle
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3 transitions through the ‘practice’ perspective of organisational routines, more recently termed
4 as ‘routine dynamics’ (Feldman and Pentland, 2003; Feldman et. al., 2016), showing how the
5 dynamic nature of transitioning is accomplished. We do this by identifying the generative
6 mechanisms involved in the recreation of patterns of action, which we suggest are formed from
7 temporary breakdowns in performance and participants perceptions of information availability
8 to meet the predefined time constraints of the project life cycle.
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11 The paper is structured as follows: the first part of the paper sets out the theoretical framework
12 by looking at the project life cycle model and the concept of transition before reviewing the
13 practice perspective of organisational routines and the centrality of action. The methodology
14 and methods are then explained before describing the case study. The findings are then
15 presented through a composite narrative followed by a discussion on how the generative
16 mechanisms contribute to the development of a five stage ‘*process model of transitioning*’. The
17 paper closes with the limitations and opportunity for further research.
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20 21 22 **The life cycle model, transitions and organisational routines**

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24 The following sections present the project life cycle as a predefined time bound model, the
25 concept of transition within this time bound model and organisational routines, recently termed
26 routine dynamics, as a theoretical lens for exploring how patterns of action are re-created.
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29 30 31 ***The life cycle model***

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33 It is the life cycle that differentiates the project organisational form over other forms of
34 organisation. Yet as Winter, et al., (2006:641) and Pollack (2007:271) highlight, such a
35 representation has been recognised as not taking sufficient cognisance of the dynamic and
36 emergent nature of action in projects. The literature on projects as temporary organisations
37 offers a framework for exploring patterns of action. Bakker, et. al., (2016) present three
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3 approaches to understanding project organisations as temporary, namely process, form and
4 perspective. As an organisational form project organisations are understood as being bound by
5 timescales that are predefined and thus influence the nature of the patterns of action within the
6 project life cycle (Lundin and Söderholm, 1995).
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13 While a project's life cycle can take on a number of forms (e.g. Lindkvist et al., 1998), a
14 governance structure that follows the traditional project life cycle model is expected to be able
15 to process information to reduce uncertainty (Winch, 2015) and to monitor the progression of
16 work through what are termed stage gates, which have become a common feature in the project
17 management systems of large infrastructure clients. It is at these stage gates where progress
18 against predefined project or individual stage goals can be assessed before gaining approval
19 (i.e. financial, technical, contractual) to proceed to the next stage (Cooper, 2008; Winch, 2010).
20 This movement is often represented as sequential, yet Cooper is keen to emphasise that they
21 are designed to support an iterative, dynamic and often non-sequential process (2008:216), and
22 so drawing attention to the concept of transition.
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37 Recognising the different forms that temporary organisations may take, Bakker, et al., (2016)
38 propose an integrative view, focusing on 'temporary organising' and the dynamic and emergent
39 nature of projects. Such a view focuses on practices in temporary organising and hence the
40 resulting patterns and outcomes, which they suggest are relative to the ability of project actors
41 to reflect on and adapt organisational routines (2016:3). Before looking at 'routine dynamics'
42 as a lens for exploring patterns of action, we first look at the concept of transition within the
43 temporary organisational form.
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53 *Transitions in temporary organisations*

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57 In this paper we conceptualise the stage gate boundary between project life cycle stages as a
58 'transition', with a particular focus on moving from the front-end definition stage into delivery.
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3 Transition itself is not a new concept having been used in understanding societal changes more
4 generally (Abbott, 2003), the dynamics of group development (Gersick, 1988), their role in
5 mega projects (van den Ende and van Marrewijk, 2014), from projects to operations (Zerjav et
6 al, 2018) and as work and society becomes more transient in nature (Lundin et, al., 2015) there
7 has been a reawakening of the concept of ‘liminality’ (Söderlund and Borg, 2017).
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12 Transition is a basic concept in Lundin and Söderholm’s’ (1995) ‘a theory of the temporary
13 organisation’ and centred on action. “Established as the driver for the transition (or change)
14 achieved before the organization is terminated, action is arguably, in an inseparable way,
15 intertwined with transition in the temporary organization. Whenever there is a transition, there
16 is action involved (Jacobsson, et. al., 2013:577). Lundin and Söderholm (1995) offered two
17 definitions of transition: (1) the distinctive 'before' and 'after' change related to the task at hand,
18 and (2) perceptions of causal relationships between multiple participants. A review of recent
19 studies on temporary organisations show that the concept of transition has been neglected in
20 the literature (Bakker, 2010), although Jacobsson, et. al., (2013) have challenged this omission
21 to rethink the centrality of action and choice in transitioning, proposing that ‘action’ is a natural
22 outcome of the ‘choices’ made when transitioning through the life cycle.
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42 In relation to stages within large engineering or infrastructure projects, which is the focus of
43 this paper, the literature has highlighted how the project organisation develops organisational
44 routines in their front end development stage (Morris and Hough, 1987; Edkins et, al., 2013;
45 Samset and Volden, 2016; Eriksson, 2015) and that these routines create project capabilities
46 (Davies and Brady, 2016) and inform organisational design (Eriksson and Kadefors, 2017).
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48 The work by Miller and Hobbs (2005) highlighted the importance of the transition from this
49 front end into execution: “In most major projects, a time can be identified when most of, if not
50 all, the pieces come into place, and when significant and irreversible commitments are made.
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3 This is typically the time when major contracts are signed and financing is secured. This point
4 marks the end of the strategic structuring phase and the beginning of the design and execution
5 phase” (2005:45). Jones and Lichtenstein (2008) reference similar literature, discussing the
6 lack of success in achieving temporal and social embeddedness at this point in the life cycle,
7 suggesting it is the transition from the front end into the delivery stage that can cause the most
8 disruption. We therefore suggest in this paper that this transition in the life cycle warrants
9 further empirical study.
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20 Returning to the work of Bakker et. al., (2016) and the need to understand the practices
21 involved in temporary organising, the following section draws on ‘routine dynamics’
22 (Feldman, et. al., 2016) as a theoretical lens to further understand how patterns of action are
23 re-created during life cycle transitions.
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30 *A practice perspective on organisational routines*

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33 Organisational routines have become a common theme in organisational theory over the last
34 50 years and more (Cyert and March, 1963; Nelson and Winter, 1982; Cohen et al, 1996;
35 Becker 2004, Parmigiani and Howard-Grenville, 2011) and have been applied in the project
36 management literature to understanding the management and complexity of large projects
37 (Stinchcombe and Heimer, 1985; Eriksson, 2015), learning across and between permanent and
38 temporary organisations (Bresnan et al., 2005; Jacobsson et. al., 2013), organisational
39 capability in project-based organisations (Davies and Brady, 2016) and collaborative delivery
40 models (Bygballe and Swärd, 2019). Their application to the life cycle model, and more
41 specifically transitions between stages, is limited.
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55 The understanding of routines has moved from being stable and programmable (Cyert and
56 March, 1963), to evolutionary in their nature (Nelson and Winter, 1982) and then more recently
57 to one that involves the generation of both stability and change in organisations (Feldman and
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3 Pentland, 2003). This change has led routines scholars to identify what has been termed the
4
5 ‘capability’ and ‘practice’ perspectives (Parmigiani and Howard-Grenville, 2011).
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7 “Organisational economists [capability] tend to treat routines as a “black box”, mainly
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9 interested in the purpose or motivation for routines and their impact on firm performance.
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11 Those trained in organisation theory [practice] are more interested in the practice of routines:
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13 how they operate and how they are produced or changed as people enact them” (2011:414).
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18 The understanding of their role in both stability and change is founded on Feldman’s’ (2000)
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20 notable work that changed the view that it was solely exogenous change that caused routines
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22 (and therefore organisations) to adapt. Feldman and Pentland (2003) then develop the
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24 understanding the duality of the ‘ostensive’ (abstract) and ‘performative’ (performance)
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26 aspects of the routine and the generative mechanisms that influence stability and change, and
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28 so the (re)creation of organisational routines over time. They arrived at a definition of routines
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30 as “...repetitive, recognisable patterns of interdependent actions, carried out by multiple
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32 actors” (Feldman and Pentland, 2003:95). The practice perspective has been recently termed
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34 ‘routine dynamics’ and builds on the contribution of the ostensive and performative aspects in
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36 acknowledging the processual nature of routines, in that action in routines is situated and occurs
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38 over time, that actors are knowledgeable and reflective and that stability in routine performance
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40 is something that must be accomplished (Feldman, et. al., 2016:506). In this regard, routines
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42 can be understood as both effortful and emergent accomplishments, in that it takes effort to
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44 enact the same pattern in different places at different times and that “each time a routine is
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46 enacted is an occasion for variation...” (Feldman, et. al., 2016:508).
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53 Howard-Grenville (2005) built on the work of Feldman and Pentland (2003) with a sharper
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55 focus on human agency and the temporal relationship between agents’ actions and routine
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57 performances, a phenomena prevalent in many project organisations with multiple participants
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3 joining and leaving projects at different times and their need to process and exchange
4 information to achieve goals. As Feldman and Pentland (2003) observe “The involvement of
5 multiple individuals inevitably introduces diversity in the information, interpretive schemes,
6 and goals of the participants. The individuals performing the routine do not all have access to
7 the same information, and even if they did, they might not interpret the information in the same
8 way” (2003:104).
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11 More recent studies in routine dynamics have emphasised the influence artefacts play in the
12 performance of the routine itself or the organisation as a whole (D’Adderio, 2010; Pentland
13 and Feldman, 2008a) and how this reliance on static and deterministic artefacts to deliver the
14 desired outputs from the routine can have both desired and undesired consequences (Pentland
15 and Feldman, 2008a). Within temporary organisations artefacts have been shown to play a key
16 role through routines in the transformation of knowledge and learning (Cacciatori, 2008)
17 “...product representations may be the key to explaining how routines can be sustained even
18 in discontinuous project environments. In particular, objects holding memory of the product
19 that also act as boundary objects across occupational or organizational groups, appear a critical
20 point of junction between business and project processes, as they help firms carrying over both
21 product and behaviour across projects” (2008:1599).
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44 In positioning situated action as central to understanding the generative mechanisms which
45 influence routine recreation, Feldman (2016) describes three key features of action in routines.
46 The first is that action is constitutive, where what we do in organisations is as a result of the
47 context of the organisation and how it operates. The second feature is that of dualisms,
48 specifically the ability of routines to transcend dualisms, such as stability and change and the
49 third and final feature being action as relational. By positioning action as relational, Feldman
50 is making the point that action is not the foundation of routines, nor the fundamental point from
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3 which all other understanding or attributes of routines can be built. But action as relational sees
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5 actions as connectors, connecting agents and artefacts in the exchange of information, and the
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7 recreation of patterns of action as being both effortful and emergent accomplishments
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10 (2016:37).

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13 This understanding of action affords a theoretical lens through which to explore how patterns
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15 of action are recreated as participants and artefacts transition through the project cycle. This
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17 perspective of action in routine dynamics is drawn primarily from an interpretivist
18
19 epistemology and in the following section we present the methodology for our study.
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22 23 **Methods and data**

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26 Following the practice perspective of routines, the research design is positioned within the
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28 interpretive paradigm (Burrell and Morgan, 1979). It broadly followed the guidance provided
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30 by Van de Ven (2007:195) and drew on the practice turn in organisational theory (Schatzki et.
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32 al., 2001; Schatzki, 2005), which has been more recently applied to understanding projects
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34 (Blomquist et al., 2010), and so adopted a ‘practice epistemology’ (Sandberg and Tsoukas,
35
36 2011) for the collection and analysis of data.
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42 The study was a longitudinal autoethnographic inquiry (Hayano, 1979; Anderson, 2006)
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44 undertaken by the first author, as the client project manager. Ethnography has been identified
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46 as a method to explore both routine dynamics (Pentland and Feldman, 2008b) and construction
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48 project organisations (Pink et al., 2013). Autoethnography ranges across a spectrum from
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50 biographical stories (Ellis, 2004) to what Anderson terms ‘analytic’ autoethnography.
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52 Anderson (2006) explains that analytic autoethnography “...refers to ethnographic work in
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54 which the researcher is (1) a full member in the research group or setting, (2) visible as such a
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56 member in the researcher’s published texts, and (3) committed to an analytic research agenda
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58 focused on improving theoretical understandings of broader social phenomena.
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3 Following Söderlund's (2012) typologies of projects, the BSCU project case study can be
4 identified as a large, inter-organisational construction project (Miller and Lessard, 2001;
5 Flyvbjerg, 2014; Davies et, al., 2017) between public client infrastructure owners and private
6 construction contractors. The case meets the criteria for the 'how' and 'why' question and
7 single case study research (Yin, 2014; Eisenhardt and Graebner, 2007).
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12 As an autoethnography, it was important to manage potential negative issues of power
13 influence on study participants, particularly on participant behaviour from observation. For this
14 reason, the organisational boundary of the study was limited to the senior management team
15 and their management meetings, which were led, or reported into, by the project
16 manager/researcher. These meetings were constituted by both the client and the contractor,
17 which further limited the power influence through the allocation of risk, and thus decision
18 making, between the parties.
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33 This senior management team were well known to the first author, had been clearly informed
34 of the planned research in advance and understood the dual role of project manager/researcher
35 in undertaking the autoethnography. All research participants were provided with information
36 sheets on the research and co-signed confidentiality forms. Data collection was over a 53-week
37 period between July 2015 and June 2016. One hundred and twenty-seven (127) senior
38 management meetings were recorded, totalling over 175 hours of audio recording. It was the
39 data from these meetings that was used as the source for identifying incidents. In addition to
40 this core data, seventy-five (75) interviews were held at three separate intervals during the
41 study: Phase 1 - pre-transition; Phase 2 – in transition; Phase 3 - post transition.
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55 The phase 1 interviews were used to identify the routines to achieve transition goals and were
56 semi-structured, while the phase 2 and 3 interviews were unstructured and used to help identify
57 the ongoing practices of the participants and supported the primary incident data from the
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3 management meetings. These interviews afforded the opportunity for the project
4 manager/researcher and study participants to reflect on work practices and their outcomes in
5 the process of transitioning. This data was also supported by an organisational-auto-
6 ethnographic diary, which was written up within twenty fours of observation, thus avoiding
7 writing observations during the meetings. The diary produced over 175,000 words, averaging
8 over 3,000 words a week.
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11 For identifying routines, the study followed the work of Pentland and Feldman (2008b) in using
12 an ‘emic’, as opposed to an ‘etic’ perspective, for the identification of the ostensive aspect of
13 the routine. An etic perspective allows the researcher to make assessments independent of the
14 participants, while “the emic perspective focuses on ways in which routines are defined and
15 energized by the subjective understanding of the participants” (Pentland and Feldman,
16 2008b:293). In seeking to identify the process of change across the stage boundary, the study
17 used the work of Van de Ven (2007) who sets out a process for the measurement and analysis
18 of qualitative process data. The first step is developing a set of categories or concepts and for
19 this study it is the concept of ‘transition’, as defined by Lundin and Söderholm (1995).
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40 Van de Ven (2007) explains that it is then the identification of incidents and events, which are
41 important to differentiate, in the same way that van Maanen (1979) differentiates between first-
42 and second-order concepts. Firstly, Van de Ven (2007:218) notes that the way to define an
43 incident is through what he calls a qualitative datum, which requires a set of decision rules.
44 The decision rules used in this study are presented later in this section. Due to the dispersed
45 nature of action within routines and construction projects (Howard-Grenville and Rerup, 2017;
46 Marshall and Bresnen, 2013) and the difficulties of identifying the boundaries of any one
47 identified routine (Pentland and Feldman, 2008b), an additional stage was added to aid moving
48 from first order incidents to second order ‘abstract’ events. This was the identification of what
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3 we have termed in this paper a ‘practical event’. Practical events were identified through the
4 understanding that both projects and routines must have a purposeful goal, this is the ‘task’
5 concept within a temporary organisation (Lundin and Söderholm, 1995) and the ‘normative
6 goal’ in the ‘guiding’ element of the ostensive aspect of the routine (Feldman and Pentland,
7 2003). The phase 1 interviews were used to identify the routines and their purposeful goal in
8 relation to the transition. The empirical data was then used to identify one particular practical
9 event within each routine that had to be completed to achieve a successful transition. Adding
10 this stage into the measurement and analysis process helps to ‘tighten’ the boundaries of the
11 empirical study of routines within such a large and dynamic case study.
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25 To achieve the identification of this practical event and associated incidents, the study followed
26 the work of Sandberg and Tsoukas (2011) by searching for what they term as entwinement and
27 temporary breakdowns in performance. They define entwinement as the logic of practice,
28 “...the primary mode of existence means that for something to be, it needs to show up as
29 something—namely, as part of a meaningful relational totality with other beings” (2011:343)
30 and such an understanding is relevant to patterns of action being defined within the routines
31 literature as being interdependent. In respect of breakdowns, they suggest that they “...are
32 treated as openings for accessing the *significance* of the internal workings of a practice”
33 (2011:347-348). A decision rule to search for routines, incidents, practical events, entwinement
34 and temporary breakdowns was therefore developed by blending together the work of Van de
35 Ven (2007), Pentland and Feldman (2008b) and Sandberg and Tsoukas (2011), as follows:
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- 51 ➤ Identify from an ‘emic perspective’ the routines associated with achieving the formal
52 approval of the project to ‘transition’ through the stage gate;
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57 ➤ Identify the ‘goal or purpose’ of the organisational routine in ‘transition’;
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- Identify a ‘practical event’ associated with the routine i.e. activities to be completed by or in advance of the predefined transition date;
- The ‘practical event’ should exhibit a breakdown, either planned or unplanned, in routine performance that had to be resolved in advance of the formal transition;
- Represented ‘entwinement’ through a series of interdependent actions, by multiple participants;
- Identify incidents within practical events and over time;
- Bracket incidents by their topic into specific groups, at specific times of the transition.

The process of analysis undertaken by the first author drew inspiration from the work of Locke et al. (2008), and entered into a recursive process of ‘doubt’ and ‘belief’ in reading and listening to the collected data, identifying the practical events and tracing the associated incident data through the senior management meetings. Following the identification of incidents and practical events, the analysis followed Langley (1999) and used both ‘visual mapping’ and ‘temporal bracketing’ to construct ‘abstract’ events to identify the process model of change. This mapping was set against the predefined time boundary of the case studies’ life cycle stages. These objective, clock time markers acted as the base framework for this exercise, but this was also supported by the identification of ‘transition rituals’ in line with the work of van den Ende and van Marrewijk (2014) who suggest that “transition rituals *do* things. They establish beginning and ending points, exhibit progress, mark and enable transitions, celebrate milestones and accomplishments, help legitimize a project, and communicate important messages to outsiders. In this sense, the ascribed meaning of a transition ritual signifies what needs to be changed, decided, established or communicated at a particular time and place within the construction process” (2014:1141).

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3 In parallel with developing the abstract event sequence it is necessary to move beyond simple
4 surface descriptions to highlight specific situated actions and their influence on patterning of
5 actions through the transition. So to support developing the abstract event sequence the study
6 followed the work of Pentland (1999) and Jarzabkowski and Bednarek (2014) to help build a
7 case study narrative that helps to “merge the characters and events from multiple ethnographic
8 observations into a single composite narrative” (2014:281), which we present in the following
9 section.

20 **Case Study**

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23 Transport Infrastructure projects play a critical role in the development of the UK economy,
24 with a planned investment of £78.5bn in the years 2017/18 to 2020/21 (IPA, 2017). The BSCU
25 project, a major underground station capacity project for Transport for London (TfL), fell
26 within this investment pipeline. TfL is the statutory public transport body within Greater
27 London in the United Kingdom. The project was managed by the Capital Projects Directorate
28 of London Underground (LU), a wholly owned subsidiary of TfL. From October 2011 to
29 September 2016 the first author was the client’s project manager accountable for the delivery
30 of this project.

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33 The project commenced in 2003, going through a number of transformations, before gaining
34 authority for contract award and the design and statutory planning of the project (Stage 1) by
35 the TfL Board in July 2013. Full authority for the construction (Stage 2) was to be granted in
36 April 2016, subject to the completion of detailed design and granting of statutory planning
37 through a Transport and Works Act Order (TWAO) application by the Minister for the
38 Department for Transport (DfT). The public inquiry for the TWAO was successfully completed
39 in May 2015, and approval granted in December 2016. It is this transition from Stage 1 to Stage
40 2 that was the subject of this study.

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3 The project was situated in the City of London, densely populated with offices and cultural
4 buildings and within a Conservation Area. It interfaced with over sixty properties (containing
5 over six hundred parties) that ranged from commercial office developments to 17th Century
6 churches. The Bank underground station, first built in the 1890's, was a critical piece of
7 infrastructure but due to population growth, had become heavily congested and under capacity.
8 The primary purpose of the project was to relieve congestion within the station by creating
9 additional capacity.
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20 The scope of work included the purchase and demolition of property, the construction of 600m
21 of new rail tunnel, extensive reconfiguration of existing, and construction of new, underground
22 passages, twelve new escalators, two new lifts, additional power supply with associated cabling
23 and mechanical equipment, new communications equipment and a new station entrance.
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30 The works were to be undertaken on two worksites above ground, and within the confines of
31 the station below ground. There were extensive construction logistics on an already congested
32 inner city road network. At worksite 1, the project purchased six properties that were to be
33 demolished and replaced by a new building, incorporating the new station entrance. In Stage
34 1, the project office was accommodated in one of these properties. In Stage 2, five of the six
35 properties were to be demolished with one retained as a project office, to be demolished at the
36 end of the project. Worksite 2 occupied a road which was subject to full closure, the removal
37 of public utilities and the construction of a shaft from which all the tunnelling and excavation
38 of material would take place. It incurred significant objection by surrounding stakeholders and
39 originally planned to accommodate construction and design support staff.
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54 In late 2010, the DfT wrote to TfL stating that the capital investment funding settlement for the
55 project was subject to a completion no later than 2021. The emerging 'concept design' in 2011,
56 while having an acceptable business case of approximately 2:1 (the government threshold
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3 being 1.5:1), exceeded TfL's business plan budget, and the planned completion was projected
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5 to be late 2023.
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9 This led LU to explore opportunities to innovate in the way it procured design and construction
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11 services. It developed a novel procurement methodology that was entitled 'Innovative
12
13 Contractor Engagement' (ICE). A key feature of this procurement model was to support supply
14
15 chain innovation through confidentiality agreements and the sharing of all available project
16
17 information, thus reducing issues of information asymmetry. The resulting contract was
18
19 structured in two stages (design – Stage 1, and build – Stage 2) and included a bespoke contract
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21 break clause, entitled the Stage Two Works Commencement Notice (STWCN), that gave the
22
23 client discretionary authority to instruct Stage 2, or not.
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29 The project was led and managed by LU (the client), supported by external consultants, and
30
31 responsible for managing stakeholders and gaining the TWAO. LU had a single contract with
32
33 a Main Works Contractor (contractor), accountable for both the design and construction of the
34
35 works and who would be in contract with a supply chain of designers and works sub-
36
37 contractors. All parties were contracted in separate dyadic relationships, however the project
38
39 tasks to be achieved led to high degrees of interdependency between project participants. It
40
41 should be noted that this was the first time for the client and contractor to work together.
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46 The procurement model generated two key documents (artefacts) that governed the
47
48 client/contractor relationship. The first was a 'relational' based contract, structured on the basis
49
50 of completing the works within a target cost arrangement, where the client and the contractor
51
52 would share the budgetary pain or gain. The contract shared the risk between the client and the
53
54 contractor, where the client primarily took statutory planning, stakeholder and financing risk,
55
56 and the contractor took design liability and construction productivity risk. UK Law, client
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58 corporate governance and project governance were stipulated within this contract. It was within
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3 this contract that the bespoke STWCN break clause at the end of Stage 1 was included. The
4
5 second document was a non-contractual ‘alliance protocol’ or what later became termed a
6
7 ‘management protocol’. It established the shared values that the client and contractor team
8
9 would follow in light of the uncertainties and interdependencies inherent in these types of
10
11 projects.
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15 By June of 2015 the project had been granted planning for the commercial development on
16
17 worksite 1 and the utility diversions, while challenging, were progressing on worksite 2. It had
18
19 gained approval for ‘concept design’ and progressed into detailed design. It had successfully
20
21 avoided a protracted public inquiry for the TWAO and in June 2015 it formally submitted the
22
23 application. It had purchased four of the six properties on worksite 1 through negotiation, and
24
25 served a year’s notice for all tenants to leave by January 2016. The compulsory purchase of the
26
27 final two properties would be subject to the granting of the TWAO. It had reached agreement
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29 with the stakeholders surrounding worksite 2 but this had resulted in constraining the size of
30
31 the site and this impacted on the plans for the operation and logistics of the construction works
32
33 and the planned accommodation in Stage 2.
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40 The relationships that had developed between the client and contractor had worked well for the
41
42 management team. It was not without its challenges like other projects of this type, but the
43
44 project continued to win industry awards for its relational approach to managing the project. It
45
46 had become a strong team, working collaboratively both horizontally and vertically across all
47
48 contracted organisations.
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51 52 **Findings** 53

54
55 In this section I (first author as project manager/researcher) describe how we as a senior
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57 management team managed the dynamic and changing environment as we sought to complete
58
59 the pre-planned activities in Stage 1 and gain TfL Board approval to transition into Stage 2. It
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1
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3 had become a feature since contract award (July 2013) for us to hold workshops to reflect and
4 plan for the near future. Having submitted the TWAO and now well into detailed design, on
5
6 the 29th June 2015, I led a workshop with the senior management team to reflect on what we
7
8 had achieved in Stage 1 and plan for the impending transition, specifically looking at our ability
9
10 to achieve all the planned outputs by April 2016. At this workshop we experienced a realisation
11
12 that all was not well in the performance of the team. The focus of the team on the public inquiry
13
14 and submission of the TWAO had masked an underlying inertia and lack of communication
15
16 between project participants that had perhaps been an undesired result of the protocol. It was
17
18 apparent that we were a long way from being ready for the transition into Stage 2. This
19
20 realisation signalled a breakdown in the performance of the team and initiated a change in the
21
22 project, specifically focusing on restructuring the organisation and its planned actions to
23
24 achieve approval for Stage 2, without disrupting the relationship built over the previous two
25
26 years:
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34 . “...I’ve noticed that, regardless of kind of moving apart a little bit, we’ve got some
35
36 serious work to do within our own organisations as we transition through to
37
38 construction. The need to remain extremely cohesive and collaborative through
39
40 that is just critical, and the stability and capability of us as a senior management
41
42 team to hold all that together is absolutely critical as we go through this” (Incident
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44 6, WK 6, SMT, pp 1-4)
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49 Five predefined dates formed the time boundary for ‘transitioning’ from Stage 1 to Stage 2.
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51 Two of these were ex-ante and defined within the contract, the most critical being the 21st April
52
53 2016, the date set out in the contract for issuing the STWCN that defined the project’s time
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55 boundary between Stage 1 and Stage 2. Two were explicit in terms of planned tasks on the
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57 critical path, but their dates were not predefined prior to contract award. The fifth date was
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created during the Stage 1 as a result of legal agreements with stakeholders. The five dates are presented graphically in Figure 1:

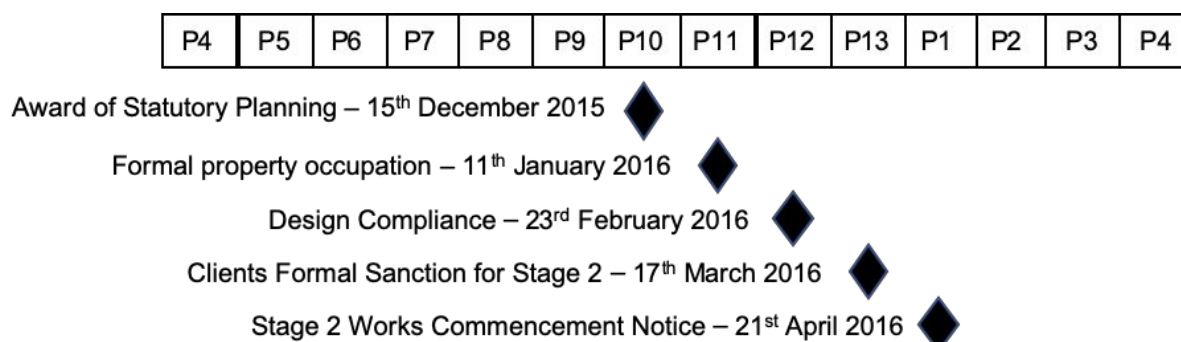


Figure 1 - Transition milestones

I undertook the phase one interviews following this workshop and along with data from the workshop, were coded to identify the organisational routines, their goals and the practical events where breakdowns had occurred. I then traced the incidents associated with the breakdowns in the practical events through the collected data to build the transition narrative and the process model of change. Table 1 presents a summary of the six routines, their practical events and associated breakdown/entwinement, their timing relative to the project's critical path (created by the milestone dates) and the number of incidents identified within each routine.

Organisational Routine	Transition Goal	Practical Event and Incidents	Breakdown and Social entwinement	Time and timing	Incidents
1. Organising routine	Reorganising teams from design to construction	Revising the Management Protocol	Unplanned – Negotiating non-contractual change - Fear that stage 1 values would not transfer to stage 2	Not on critical path	53
2. Governing routine	Gaining formal approval to proceed from stage one to stage two	Gaining Formal client approval	No breakdown - Aligning contractor forecasts with client funding submission	On the critical path	41

3. Contracting routine	Obtaining the contractual instruction to proceed into stage two	Issuing Stage 2 Works Commencement Notice	Planned – Instructing contract change - Fear that traditional industry behaviours would disrupt values.	On the critical path	33
4. Designing routine	Achieving 'design compliance' prior to the start of stage 2	Design compliance re-packaging	Unplanned – Negotiating contract change - Commercial challenges could lead to organisational conflict.	On the critical path	51
5. Constructing routine	Procuring the work packages for the establishment of the two main work sites	Preparing new Accommodation strategy	Unplanned – Instructing contract change - Fear of loss of co-located workforce and schedule gains	On the critical path	31
6. Consenting routine	Obtaining statutory planning approval.	Discharging statutory planning conditions	Unplanned – transferring knowledge - Construction team integrating with consenting team	On the critical path	69

Table 1 – Routines and their practical events

The progress of activities were the subject of a 'Period Progress Review' meeting (every 4 weeks) where progress and breakdowns in performance were discussed. I led this period progress meeting, a central feature of the project 'business rhythm', embedding it into the corporate governance structures of both client and contractor organisations. This business rhythm remained stable during the transition, although the structure and attendees of the meetings changed, in recognition of the departure of designers and arrival of the construction team.

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3 The interpretation of the meaning of these milestones related to activities and information
4 search had a strong influence on the participants as they were seen as part of the ongoing
5 progression of the project, not simply as a fixed boundary delineating one stage from the next:
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11 *[I007]: "... because I think projects, you know, they don't suddenly go, 'Boom,'*
12 *from design to build. What happens is ... especially if you look at this job, it*
13 *happens quite progressively. So, even though we're designing, we've got people*
14 *working in the station, and doing surveys, and we're doing some remedial works*
15 *... So, naturally, what happens is that people start getting ingrained in those*
16 *working routines and processes as they go along, so to me, it doesn't become a*
17 *big step change..." (I007, Interview 1, 28/07/2015, page 5)*
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28 The two worksites were a critical spatial requirement for achieving the end date of July 2021.
29 The completion of utility works, site establishment, the compulsory removal of tenants and
30 building surveys prior to demolition were critical in meeting the 21st April start date for Stage
31 2. Both worksites were subject to stakeholder consultation, resulting in legal agreements that
32 restricted their size and constrained the date of occupation. It soon became apparent that these
33 spatial constraints would not accommodate all the staff as planned on either worksite, requiring
34 the demolition of the sixth property on worksite 1, a reduction in accommodation on worksite
35 2 and the need for a new accommodation strategy to be planned and implemented prior to 21st
36 April 2016. This risk was held by the client. The remainder of the spatial elements of the project
37 remained stable and there were no significant changes to the major stakeholders.
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52 One of the main features of a design and build model is the retention and continuity of
53 knowledge across the two stages of design and construction. The workshop of the 29th July
54 highlighted that these advantages had not been fully materialised, although the extent of this
55 differed amongst participants.
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3 *“I’m less concerned, and I know you’re more concerned than I am, about the*
4 *transition from design to construction, because I’ve got 30 years of experience of*
5 *taking a construction team from one project to another project, where they’ve*
6 *never seen it before. So, they’re actually hitting the ground, not understanding the*
7 *asset, the deliverables, much at all when they hit the ground, and we deliver...So*
8 *the emerging uncertainty of us going into construction here is nothing compared*
9 *to the emerging uncertainty of a conventionally procured contract. Again, using*
10 *the time that we’ve got wisely.” (I006, Interview 1, 27/07/2015, Page 8)*
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22 Participants presented the movement from Stage 1 to Stage 2 to be characterised by high levels
23 of organisational uncertainty as participants undergoing their own transitional experiences
24 sought to transfer knowledge from those leaving the project (designers), to those joining the
25 project (constructors). They talked of a move from a ‘conceptual’ stage to a ‘reality’ stage and
26 were concerned that those joining would not understand the emerging knowledge of the project.
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34 The team recognised this disconnect and potential disruption between the two stages:
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37 *[I020]: “I think we’ve got a major shift of outlook as we go from a very design*
38 *orientated structure, into then, a delivery structure where it’ll actually go out and*
39 *physically provide the works...if I could be critical, we probably, as [a] design*
40 *organisation, [have] not quite had a foot in the construction camp sufficiently*
41 *enough...So, therefore, that makes the step and the transition from design into*
42 *construction a larger leap to take....Factor into that the churn of staff that we’ll*
43 *have going from design into construction, makes that quite a big change for us as*
44 *a project as we lived and breathed for two, three, years, design, now going into*
45 *construction, over probably a six-month period ... that if not managed, it will*
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probably have a detrimental effect in the performance capability of the project”

(I020, Interview 1, 08/08/2015, page 3)

The senior management team was made up of members between the client and the contractor, brought together in a combined structure of three levels of management, as shown in Figure 2 with the dotted line showing the participant groups under study.

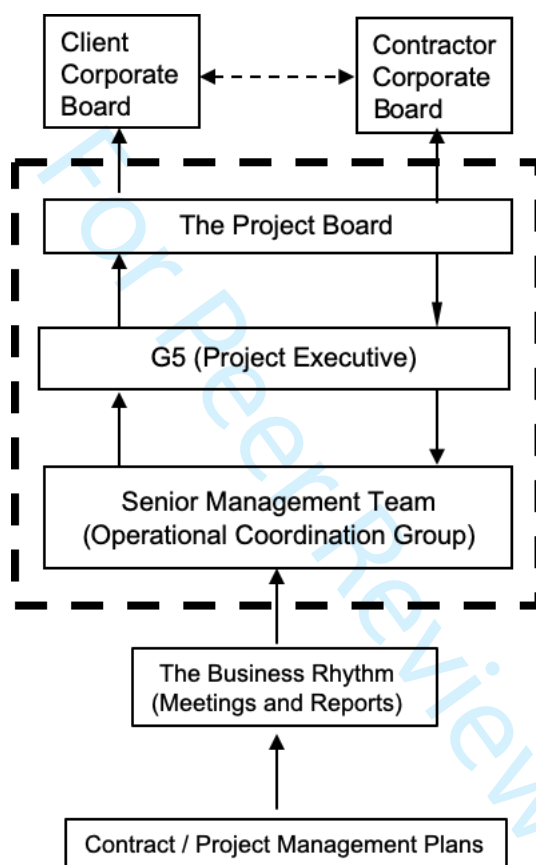


Figure 2- Organisational boundary of data collection

I took a lead role in the project executive - G5. I was accountable for gaining approval from the TfL Board to take the project into Stage 2. The change of this team was a central feature of the transition as while in general the individuals themselves remained, approximately two thirds of the team changed their formal roles within the senior management team.

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3 Beyond this team was a wide range of actors that included internal stakeholders from both the
4 client and contractor organisations. Within the client organisation, most notable was the
5 engineering oversight function which influenced the progression of the detailed design when
6 it had become apparent at the 29th June workshop that the design would not be completed by
7 the Key Date of February 2016. This breakdown led to a restructuring of the design submission
8 from one package to five, and spread over time from both before and after the 21st April date
9 and was supported by preparing and submitting a revised strategy document.
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20 *“...we need a mechanism whereby we say here’s the plan and everyone’s signed*
21 *up to the plan albeit the details are going to come through later. So I still think we*
22 *need a compliance strategy document that everyone signs off To show [external*
23 *assurance review] in October/November you want to say there’s my list of all my*
24 *deliverables I’m going to get ... It’s about us giving them confidence and saying*
25 *of all these items, the twenty that’s left we don’t actually bother about because for*
26 *our risk based [design assurance] we’ve had the high-risk stuff early so we’ve got*
27 *a level of confidence now and that’s the message we need to be giving them.*
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39 *(Incident 3, SMT, WK 2, pp18-33)*
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42 Managed by the client team were a myriad of external stakeholders and their management
43 during the transition was important to maintaining stability. The contractor also had functional
44 leads from both their UK and overseas offices. They had a wider network of contributors from
45 ‘sister’ projects within the UK that became engaged in both design and construction. Under the
46 management of the contractor was a supply chain of designers and works sub-contractors and
47 while their actions featured in the senior management meetings, they did not formally
48 participate in the study.
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3 Two main artefacts - the contract and management protocol - structurally embedded us as a
4 team in a shared situated practice that strongly informed the projects' values, developed and
5 enshrined in the management protocol in the early days of the contract. At the workshop on the
6 29th June 2015 the team found that the relationships, perhaps more specifically the boundaries
7 between roles and responsibilities, had become blurred and developed a sense of inertia in
8 progress and decision making. This caused us to 'separate' certain organisational units so that
9 we could focus on our individual contractual obligations. However, this also caused us to
10 continue to espouse our shared values as the impending uncertainties threatened our ability to
11 achieve activities on time and hence we saw the re-evaluation and adaptation of the
12 management protocol as an emerging and necessary transition activity:
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27 *"I see behaviours that I'm really, you know, the whole client-contractor thing*
28 *seems to be turning on, turning off... we just press the button when it suits us... I'm*
29 *nervous about that going forward, and is that what we want? ... I think the reason*
30 *you're trying to share information is because I can't do the job without information*
31 *you've got and you can't do the job without information I've got, and you know,*
32 *when two parties contract together you're never going to get away [from] that...I*
33 *think that's part of the difficulty and the enjoyment of running an organisation, is*
34 *you're always continuously trying to get that balance right."* (Incident 35, G5, WK
35 34, pp5-14)
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49 The formal contract between the parties required the production of artefacts and this continued
50 through Stage 1 and into Stage 2 (i.e. management plans, the design, etc.). Most notable during
51 the transition though was the adaptation of artefacts and the emergence of new artefacts that
52 were borne out of the uncertainties that emerged from the workshop on the 29th June (such as
53 the accommodation strategy, design compliance strategy and management protocol). The
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3 preparation and approval of these artefacts influenced participants actions as they sought to re-
4 plan activities and establish new activities through the search for information. As the milestone
5 dates for transition approached, we recognised that information search had to come to a close
6 and that we had to make judgements on moving forward based on ‘incomplete information’.
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13 *“... I get a feeling that right now, you’re just not locking out your decision making,*
14 *and that is putting pressure on [procurement], because she’s unable to procure*
15 *some of this stuff, because we’re not locking down the decisions....It’s a classic*
16 *behavioural example at this point in the project, nobody wants to move forward*
17 *until they’ve got complete information. The skill and the art is how do you move*
18 *forward with incomplete information. You’ve got to make a judgement against that*
19 *incomplete information ...’” (Incident 10, G5, WK 15, pp 13-39).*
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30 We achieved approval from the TfL Board to proceed into Stage 2 and we issued the STWCN
31 in time for the 21st April 2016. Because this was a bespoke clause in the contract, we had
32 developed an excel spreadsheet that monitored contractual compliance and identified ideal
33 changes to adapt the contract. This new artefact was monitored and approved by the Bank
34 Board. What I observed in the phase three interviews (May/June 2016) was that although
35 formal transition to Stage 2 had taken place, there was a sense of ‘ongoingness’ in
36 ‘transitioning’, a sense of ‘incompleteness’ and the need to continue the adaptation of new
37 practices. In addition to this, the award of statutory planning in December 2015 gave the team
38 a sense of confidence that we had now reached a point of greater certainty, affording them the
39 confidence to make the necessary judgements against the incompleteness of information. It felt
40 like the ‘actuality’ of the transition was temporally different to the pre-planned movement
41 between the two stages.
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3 “Friday 18th December (07:57 – sitting on the 40 [bus] ... this week has been a
4 real week of ‘transition’ ... clearly getting the TWA was huge ... the Bank Board
5 was very commercial with no progress reporting and that made it feel very real ...
6
7 it was the first that was so different from all the others and in that sense, marks the
8 transition for that meeting going forward, the fact that we also seemed to see some
9
10 light at the end of the tunnel with all the commercial issues ... was a real step
11 forward and set the tone for getting the stage 2 commencement notice up and
12 running in a timely [manner] ... I think it is always very difficult to define one
13 particular turning point with respect to the transition ... So is there a single trigger,
14 well yes and no, ... however, there is no doubt that getting the TWA was [a] big
15 trigger, ... So much of our decision making is built around getting that and now
16 having it in our hand says so much..” (OAD, week 25, pages 132-135)
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32 The development of the narrative for the transition enabled me to refine the characteristics of
33 the abstract events and the realisation that the two sequential stages of design and construction,
34 represented in the project life cycle model were not structured from a single bracket of the ex-
35 ante fixed date of 21st April 2016, but that moving across the boundary and accomplishing the
36 routines was an ongoing process of ‘bracketing’ practices. Five abstract event sequences across
37 the six routines were identified, namely: (AE1) Realising through enacting; (AE2) Informing
38 and assuming; (AE3) Turning and preparing; (AE4) Formally validating; and (AE5) Enacting
39 through realising. These stages and key activities from each routine are presented in Table 2.
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Stages	Stage 1: Realising	Stage 2: Informing and Assuming	Stage 3: Turning and Preparing	Stage 4: Validating	Stage 5: Enacting
Weeks	1-6	6-22	22-36	36-42	42-53

Overall transition	The 'thwarting of expectations'-realisation of the need to change... espousing future vision	Searching for information, understanding constraints and making assumptions as deadlines approach	Key events trigger a shift towards a 'felt sense of transition', preparation of formal approval	Obtaining formal approval through formal governance procedures	Enacting the new practices and structures
Organising routine	Awareness of breakdown and reorganisation	External review and Away days	Questioning relations; revising protocol	Approval revised protocol and organisation structure	New organisation structure implemented
Governing routine	Reorganising for the PMO to manage the governance process	Collating evidence for external assurance review	Assurance reviews; Drafting approval papers	Formal approval at TfL Board	New practices to manage ongoing assurance review
Contracting routine	Lack of understanding of what the contract clause means for the project	Understanding milestone dates, collecting information to develop tracker	Formally issue tracker. Providing evidence to project board.	Issuing the STWCN	Tracker as a tool to continue to provide performance assurance
Designing routine	Delay to design; need to separate packages	Developing relationship between and construction schedule	Enacting new practices to close design, commence early construction	Delay to sign-off of the main design package	Mix of old practices and new, established operational coordination group
Constructing routine	Realising need for revised strategy.	Searching for information for option selection	Applying for consents; Gaining Bank Board approval	Formally Instructing sub-contractors	Event closes and new activities emerge
Consenting routine	Restructure roles from consents to stakeholder management	Recognition consents important to the info search.	Granting of TWA and need to fix statutory timescales.	Granting of the plans that discharge conditions	Enacting the new routine through developing new artefacts.

Table 2 – Abstract event sequence and activities for each routine

This process of bracketing practices to identify and develop the abstract event sequence and their boundaries, while seemingly occurring sequentially, enabled me to identify the generative mechanisms involved in re-creating patterns of action and the processual nature of the model, which are discussed in the following section.

Discussion and conclusions

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3 A ubiquitous feature in the management and governance of the project organisation is the life
4 cycle model (Söderlund, 2012; Morris, 2013), commonly structured through sequential stages
5 to process information (Winch, 2015) and monitor the progression of work through stage gates
6 and representing time as linear by fixing a predefined date when the organisation will be
7 terminated (Lundin and Söderholm, 1995; Bakker et. al., 2016). Due to practitioners'
8 experiences of an ever increasing complex and dynamic environment, project management
9 scholars have sought to further understand how this predefined 'representational' model is
10 performed in practice (Winter et, al., 2006). This is particularly the case in infrastructure
11 projects where multiple participants are joining the project at different stages and need to
12 process and exchange large amounts of information (Söderlund et. al., 2017).
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27 The transition between life cycle stages is often represented as two activity bars, either as
28 finish-to-start or overlapping and while routines in each stage (such as designing and
29 constructing) are better understood, how they are recreated through the transition is less
30 understood. In this paper, we drew on routine dynamics (Feldman and Pentland, 2003;
31 Feldman, et. al., 2016) and developed the research question "How are routines re-created
32 through life cycle stage transitions in a project organisation?". In answering this question, we
33 propose an 'alternative image' to this predefined time boundary between life cycle stages and
34 contribute to the project management literature by understanding the dynamic and emergent
35 nature of transitioning through the identification of a five stage '*process model of*
36 '*transitioning*', presented graphically in figure 3.
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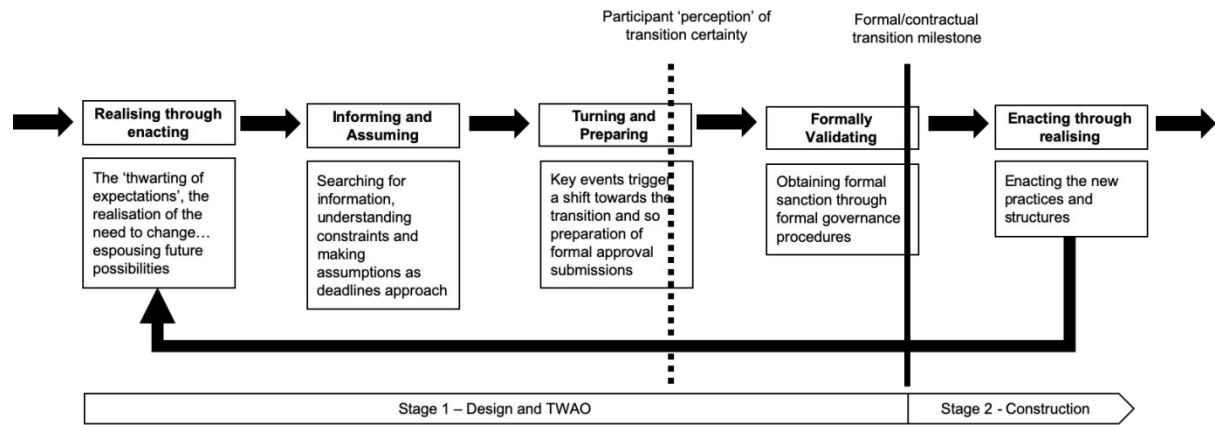


Figure 3 – ‘Process Model of Transitioning’

The evidence from our empirical study of an infrastructure project transitioning from design to construction suggests the model is given its structure from the project actors’ ‘patterning of action’ between project actors, through effortful and emergent accomplishments (Feldman, et al., 2016) that are influenced by three generative mechanism, namely: 1) breakdowns in planned performances leading to the incomplete search for information to achieve transition goals; 2) the influence of the predefined time boundary on this information search and judgments made; and 3) the timing of actions relative to the perception of causal relations by project participants, who themselves are experiencing transition in their roles.

Through the lens of routines at a ‘practice’ level, opening up the black box to explore situated action (Parmigiani and Howard-Grenville, 2011; Feldman and Pentland, 2003), the generative mechanisms associated with the recreation of patterns of action are shown to be influenced by temporary breakdowns (Sandberg and Tsoukas, 2011) in practices prior to transition, whose emergence had been triggered by the proximity to the predefined end date for that stage. These breakdowns drew attention to activities that did not form part of the original predefined tasks of the project and the need to search for new information. At this level of granularity, it highlighted not only the interdependent nature of actions but also the level of ‘incompleteness’

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3 in the search for information, particularly as the predefined time boundary approached. As
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5 noted in the autoethnographic diary during stage 2 of the model:
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9 *“... as we approach what could perhaps be called the apex of the transition...more*
10 *and more information seems to be coming to light and we seem to be*
11 *disaggregating our tasks into smaller and smaller chunks to deal with this*
12 *emerging information. This made me think about the whole concept of ‘incomplete*
13 *information’ or perhaps ‘necessarily incomplete information’ ... When we create*
14 *these sequential [life cycle] stages, we assume that we arrive at a perfect level of*
15 *information before we can transition, in reality that is never quite the case, in fact*
16 *maybe it can never be the case, we always have to transition with incomplete*
17 *information...a stage is always ‘necessarily incomplete’...I guess the question is,*
18 *what level of completeness is tolerable? Those that wait out for completeness will*
19 *never get there and those that move to early will fall over in advance of getting*
20 *there and have to start again. (OAD, Wednesday 28th October - 16:44 – in the*
21 *office)*
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32 This conception of ‘necessarily incomplete’ information, or what could perhaps be termed
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34 ‘sufficiently complete’ information, led to the continuous ‘bracketing’ of bundles of activities,
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36 planned and emergent, in the flow of time (van den Ende and van Marrewijk, 2014).
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40 This process of bracketing, through participants dialogue with each other of their shared values,
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42 past actions and future intentions, provided sufficient recognisability to the progression of
43
44 work. We suggest that, following Lundin and Söderholm’s (1995) definition of the concept of
45
46 transition, this recognisability was relative to the participants ‘*perceptions of the causal*
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48 *relations*’ in the timing of their actions, the judgements that participants made against the level
49
50 of (in)completeness of information, and the adaptation of artefacts to carry information and
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52 assumptions across the stage boundary (Howard-Grenville, 2005; Caccatori, 2008). These
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54 processes enabled the team to maintain the balance between organisational stability and change
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58 (Feldman and Pentland, 2003) and so avoid significantly disrupting the temporal trajectory of
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3 the project from stage to stage (Abbott, 2001; Miller and Hobbs, 2005; Jones and Lichtenstein;
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5 2008).

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9 The breakdowns, information search, adaptation of artefacts and bracketing of activities
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11 highlight the processual nature of the transitioning model. Such actions were not limited to the
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13 initial breakdowns in stage 1 of the model but materialised themselves through all stages. Most
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15 specifically, in seeking to enact planned patterns of action in stage 5, participants actual
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17 performance differed from those as envisaged by the senior managers and set out in new or
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19 adapted artefacts and so the cycle repeats itself, as shown in the arrow from stage 5 to stage 1
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21 in Figure 3. Such an understanding supports the theoretical position in routine dynamics that
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23 routines are not entities but dynamic processes, in that they are distributed over space and time
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25 and are both effortful and emergent accomplishments (Feldman, et. al, 2016).

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30 These interpretations support recent efforts in the project management literature to focus on
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32 the dynamic nature of temporary *organising* and transition (Bakker, et. al., 2016; van den Ende
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34 and van Marrewijk, 2014; Jacobsson et. al., 2013) by drawing attention to the actuality of the
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36 performing and patterning of actions across the predefined time boundary (Feldman, 2016).
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38 Through the ex-post bracketing of incidents and events, the findings presented here enables us
39
40 to see that the represented predefined and fixed date for transition is only a partial
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42 representation of how transitioning is performed. Lundin and Söderholm (1995) talk of the left
43
44 and the right bracket, but they also talk of 'bracketing' (1995:446). This study has shown that
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46 this bracketing is a dynamic activity undertaken in the flow of time and is situated in the
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48 ongoing relational actions of the participants (Bakker, et. al., 2016; Feldman, et. al., 2016).

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54 As with Winter et, al. (2006), this is not to reject the codified knowledge of the project life
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56 cycle, nor to reject the concept of prescriptive routines for gating the process of transition
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58 (Winch, 2010). But it suggests that through the lens of routine dynamics (Feldman, et. al.,
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2016; Feldman, 2016), it offers the potential to see how practitioners blend together the constraints of the embedded clock time markers, with the emerging exogenous and endogenous change inherent in such dynamic endeavours.

Limitations and further research

As an autoethnographic study of a single case study and a single life cycle stage transition, we recognise the limitations this brings in terms of data collection within such large and complex projects. We would argue however that the methodology developed here contributes to more recent efforts to develop forms of engaged scholarship both in project management and organisation and management theory more generally (Van Marrewijk & Dessing, 2019; Van de Ven, 2007). We also propose that the study fits with Geraldi and Söderlund's (2018) Level 2, Type 2 project studies, and responds to calls from routines scholars for further understanding the spatio temporal nature of routines (Howard-Grenville and Rerup, 2017).

By identifying the three generative mechanisms involved in re-creating patterns of action in the transition through project life cycle stages, we suggest that our five stage process model of transitioning has generalisability in its application to understanding the project life cycle model. The model identified here, could be applied and tested in other cases and other stages of a project life cycle. With temporary organising becoming more prevalent in society (Lundin et, al., 2015), the recent reawakening of the concept of liminality in management and organisation studies (van den Ende and van Marrewijk, 2014; Söderlund and Borg, 2017) and infrastructure projects involving what have been described as multiple temporalities (Brookes et, al., 2017), then understanding more of the spatio temporal nature of transitions could be argued to be beneficial for the study of both project and mainstream organisations.

If the knowledge of the processual relationship between different event sequences were used to manage risk and uncertainty, we may be able to better understand the relational

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2
3 (coordination) and transactional (cooperation) uncertainties between participants, identified by
4 Söderlund (2012) and Jones and Lichtenstein (2008) as two of the key problems of project
5 organising, and so use transitions as an effective place for bringing participants together to re-
6 create routines, and not simply as an accepted place where disruption takes place. We may then
7 use these stage gate transitions less as a process of performance control and more in developing
8 project capabilities (Zerjav, et. al., 2018).
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11 We also suggest that seeing projects as predefined time bound temporary organisations offers
12 a unique context for studying how routines come into being, are enacted and terminated and
13 the resulting project and dynamic capabilities (Davies and Brady, 2016). A starting point for
14 this may be in further understanding the typology of routines in project organisations by
15 building on those found in this study; understanding the influence of unique and repetitive tasks
16 on patterns of action in temporary organisations (Hærem et al., 2015); the inter-organisational
17 nature of temporary organisations (Sydow and Braun, 2018), the networked nature of routines
18 in the governance of projects (Steen et al., 2018) and finally, understanding the role of time, as
19 experienced by participants in relation to objective clock time and activity sequencing
20 (Orlikowski and Yates, 2002; Turner and Rindova, 2018).
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42 In today's world, the pace of change and the context of work is becoming more complex,
43 uncertain and dynamic. While the project life cycle is a model that can help to organise work
44 and process information, our ability to understand how participants perceptions of time and
45 space influence the re-creation of patterns of action becomes an ever more important area of
46 study.
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