Tensions in organisations transforming to agility

Managerial relevance statement

This research investigates agile transformation using empirical case studies of three publicly-funded organisations. Our findings focus on tensions that arise during organisational transformations and are based on authentic accounts and concrete experiences. Practical insights for those leading agile transformations that emerge from this work are:

- A transformation to organisational agility may start from a range of different foci, including culture change, strategy change and operational change. Our accounts provide insights into the complexity and variable nature of organisation-wide transformations. Quoting one Head of Transformation: "*I thought we'd embarked on achieving a destination, but actually what we embarked on was a really long journey*"
- Multiple tensions of different types will arise throughout the transformation. We identified 13 tensions from the three case studies. This is not an exhaustive list, but it illustrates the kinds of tension organisations face in agile transformations.
- We show that viewing tensions through the lens of paradox theory supports transformation leaders and managers to elucidate the tensions their organisations face.
- We provide specific questions for leaders and managers to ask before and during transformation, to help navigate tensions that can occur in transforming to agility.

Abstract

Transforming into an agile organisation is challenging because it involves complex changes across the organisation including changes to strategy, structure, culture, operations, and technology. Although much has been written about organisational agility, practitioners still call for authentic accounts and concrete experiences to help them understand how to transform. This article is based on three case studies of diverse organisations transforming to agility and provides an account of each transformation. Each organisation chose a different focus for their transformation: culture change, strategic change, and operational change. Each organisation faced challenges that resulted in tensions. We present 13 tensions from three cases, which illustrate the kinds of tension that organisations face in agile transformations. We consider these 13 tensions through the lens of paradox theory and thereby produce both practical guidance and theoretical contributions. We show how questions generated from this perspective may be used to guide transformation leaders and managers in addressing the tensions they will meet. Our findings provide empirical evidence for the tension categories in paradox theory and show that tensions occur *during* transformations to agility and not just in fully agile organisations.

Keywords

Agile organization, Change management, Empowerment, Organizational agility, Organizational flexibility, Organizational transformation, Tension, Paradox

Introduction

Transforming to organisational agility is hard [1, 2]. It requires considerable time, effort and perseverance, involving changes to strategy, structure, culture, operations, and technology [3-5]. Much has been written about organisational change [6] and transformation [7] and although frameworks and guidance for organisational agility exist [8], practitioners still call for more examples to support them in answering their own "how to" questions [9]. They seek authentic accounts and concrete experiences of organisational transformation, rather than theoretical models [10] to help them understand *how* to transform, and how to address the challenges they face.

Agile transformation research at the team and project level focuses mainly on agile software development [11, 12], with calls to extend the use of agile practices into non-IT environments [13, 14]. Research into whole-organisation transformation has focused mainly on agile manufacturing [8] with some attention to large-scale agile software development adoptions that include organisational transformation [1, 15]. But there is limited empirical research of organisational agile transformations in other sectors, making authentic accounts and concrete experiences difficult to find. In addition, there is limited research that focuses on the challenges faced by organisations and how they may be overcome. Where challenges are discussed it is mostly in the context of software development and IT units rather than organisational transformation [1, 9].

Based on case studies of three publicly-funded organisations in the UK, we address these shortcomings and explore two research questions 1) *how do organisations transform to agility?* and 2) *how can organisations navigate through the challenges they encounter?*

The research was initiated to explore the challenges and successes faced by organisations in their agile transformations. During analysis, we realised that some challenges resulted in tensions i.e. contradictory persistent and simultaneously occurring demands an organisation faces [16]. This focus on tensions led us to paradox theory [16-18], which provided a lens to characterise our findings and suggested practical insights for transformation leaders.

The article is organised as follows. First, there is a literature review of organisational agility and studies of agile transformation. Then the research design is described including case selection and description, data collection, and data analysis. There follows an account of each transformation, the tensions each organisation faced are described and then we use paradox theory to characterise the tensions and develop questions that practitioners can ask to help them in their specific transformations. The discussion addresses the research questions and concludes by addressing contributions, limitations, and future work.

Related Literature

Organisational Agility

Organisations have long been concerned with organisational agility [8, 19-21], and give it many names: business agility, enterprise agility, organisational flexibility, strategic agility, and organisational adaptiveness [5, 22-24]. Furthermore, many definitions exist. A recent definition

states, "*Organizational Agility is a learned, permanently-available dynamic capability that can be performed to a necessary degree in a quick and efficient fashion, and whenever needed in order to increase business performance in a volatile market environment.*" [8, p.379].

Organisational agility is not a unified concept but involves multiple interrelated factors including: the capacity of the organisation for learning and continuous improvement; the strategic, operational, and structural alignment of the organisation; and organisational culture and leadership. Table 1 defines these common concepts in organisational agility.

Table 1 Key concepts and definitions for common forms of organisational agility

Name	**Definition**
Learning organisation and continuous improvement	Agile organisations are learning organisations [25]. Argyris and Schon [26] defined 'learning organisation' with continuous improvement as one foundation [27, 28]. Continuous improvement is *"a systematic effort to seek out and apply new ways of doing work i.e. actively and repeatedly making process improvements"* [29, p. 444]. A learning organisation forms autonomous self-organizing teams who promote learning by sharing tacit and explicit knowledge and experience [30].
Alignment of strategy, operations, and structure	Organisations achieve agility with appropriate strategy and embedding strategy vision, values, and goals at the operational level [21]. Without alignment, organisational goals can be misunderstood, and goal achievement hampered when one form of agility is present but another is weak or absent. These three dimensions and corporate culture influence organisational innovativeness [32]. Alignment of strategic, structural, and operational agility is a function of management and leadership [19].
Strategic agility	Teece, et al. [21, p. 18] define strategic agility as *"the capacity of an organization to efficiently and effectively redeploy/redirect its resources to value-creating and value protecting (and capturing) higher-yield activities as internal and external circumstances warrant"*, and under uncertainty, to "*adjust strategy as necessary and desirable*". Organisational agility involves sensing, seizing and transforming. Sensing is the identification, development, co-development, and assessment of technological opportunities and threats in relationship to customer needs; seizing is the mobilization of resources to address needs and opportunities, and capture value; transformation is continual renewal ("transforming" or "shifting") [31].
Operational agility	The capability of the operational unit to respond rapidly to change by mobilising resources and adjusting activities. Operational agility occurs in

Name	Definition
	organisational units, programmes, teams, or projects, and can occur by planning (i.e., strategy implementation) or spontaneously in small [33] and large-scale organisations [34].
Structural agility	The ability to evolve communication and decision processes, change job roles and responsibilities, and change control systems. This agility can have external focus whereby co-design, joint ventures, or other forms of partnership are rapidly formed [5]
Workforce agility	Workforce agility is defined for agile manufacturing as an adaptable workforce that is highly skilled, technologically competent, and can adapt to non-routine and exceptional circumstances [35].
Organisational culture	An appropriate organisational culture for organisational agility is a mixture of clan, hierarchy, and adhocracy cultures [36].
Agile leadership	In agile organisations, agile leadership should be transformational and empower employees to be independent and autonomous [37, 38]. Transformational leadership is important in learning organisations [39].

Current research into organisational agility encompasses types of agile organisations and guidance on how to be agile [40], conceptual studies [8, 21], maturity models [41], evaluative frameworks [42], and metrics [43]. Business consultancies also promote the importance of organisational agility [44, 45]. Some case studies of agility in organisations also exist. For example Potdar et al [46] identify 11 barriers in a large Indian automobile production company. Lewis et al studied five exemplary agile firms from 1999 to 2012 and report that maintaining organisational agility is challenging, even for organisations that are exemplars of agility [17]. They also found that organisations encountered competing demands which generated tensions that the leadership balanced to maintain high levels of agility.

Agile software development is a form of operational agility that has influenced organisational agility since the early 2000s. It emerged in information technology (IT) in the mid-1990s and is now mainstream [47]. Agile software development is widely adopted in small scale, large-scale, and globally distributed projects [48], and has transformed IT services with the emergence of

DevOps and BizDev [49]. The principles and practices of agile software development are now adopted in industries such as construction to enhance agility [50]. Furthermore, large-scale agile is influencing organisational agility in software development organisations [1, 51].

Walter [8] comprehensively reviewed organisational agility covering most of the topics in Table 1. Due to the lack of conceptual clarity, she developed a conceptual model of organisational agility in complex, volatile, and uncertain environments. She assembled 12 definitions for organisational agility, and then argued for the model based on a systematic literature review of 75 quality academic articles published from 1994 to 2018. The model defines agility enablers, agility drivers, agility capabilities, and agility dimensions. Together, these enablers, drivers, capabilities, and dimensions influence organisational agility which improves business performance.

Walter [8] has three concerns about existing research on organisational agility: the lack of agility studies in industries other than manufacturing, which is the source of all of the enablers and many other concepts integrated into her model; the lack of research on obstacles to organisational agility; and, because recent research is primarily conceptual and theoretical, a lack of in-depth insights about factors affecting the realisation of agility, which indicates a need for exploratory case study research.

Studies of Agile Transformation

Organisational agility is a well-researched field, but there is much less work focusing on agile transformations. For example, guidance on change management, i.e. the process of renewing the direction, structure, and capabilities of an organisation to adapt to its needs or its customers'

needs, is plentiful, e.g. [52]. Kotter [53] proposes steps for organisations planning to transform but does not explicitly address *agile* transformation.

There are only a few studies that focus on how an organisation transforms to agility. For example, Worley, et al. [54] investigated structural change in a family business that began to transform to agility in 2011. This descriptive study of a manufacturing firm, focuses on the details of the initial transformation and how it was carried out following a SEAM methodology (socio-economic approach to management), the structural changes introduced into the production activities over time, and the financial advantages achieved due to agility.

Kovynyov, et al. [40] surveyed 125 people who had experienced an agile transformation, and proposed that in agile transformation initiatives, organisations may need to change their: structure; culture, values and leadership; delivery and software development; product development; ways of working; and enterprise architecture. That study indicates the extent of change organisations make in moving to organisational agility and how the changes will differ depending on the organisation's context.

Challenges of organisational transformation to agility are mostly addressed in literature on agile software development [1]. Challenges and how they are resolved are the focus of Paasivaara et al's [15] case study of a large software development transformation. The lessons learned were to adopt an agile mindset and an experimental approach, to transform in a stepwise manner, to limit team interchangeability in highly specialised teams, and to adopt a common agile framework across the whole organisation.

IT practitioners report challenges with agile transformations at the operational level in IT units and projects [9, 55], and similar concerns are voiced by those with experience of whole-organisation agile transformations [56], including the business consultancy press [57, 58]. Concerns include management commitment, engagement, and buy-in, how to sustain agile transformations, and the difficulties with changing organisational culture, mindsets, budgetary mechanisms, hiring criteria, and how to support empowerment and self-organisation.

This review indicates that, outside of the agile manufacturing domain, few studies report insights into how organisations experience agile transformation: how they start, and how they navigate through the challenges they encounter**.**

Research Design

Three case studies of agile transformation inform this research. The unit of analysis in each case was the transformation of a single organisation aiming to achieve agility. Case studies are appropriate for exploring complex phenomena in contemporary settings where the investigator has little or no control over events [59]. Agile transformation meets these criteria. The studies were ethnographically-informed in that they were qualitative, focused on practice, and aimed to explicate the participants' point of view, i.e. transformation leaders and managers [60]. Ethnographically-informed research is used in social studies of management [61] and software engineering [62].

We followed the guidelines recommended by Walsham [63] for improving the quality of interpretive case studies. We also consulted positivist case study sources in innovation

management [64] and sources that compare cases studies within the two paradigms [65]. By doing so we incorporated tactics to improve the validity and reliability of the research.

Validity and Reliability

The research followed the guidance of Walsham [63] and Miles and Huberman [66] for achieving quality in interpretive case studies and in qualitative research. Miles and Huberman [66] advise that qualitative studies should meet the criteria of objectivity (confirmability), reliability (dependability), internal validity (credibility), external validity (transferability), and utilization. To strengthen objectivity we include details of site selection, data collection, data analysis, and the interview guide followed in the semi-structured interviews (see expanded Table 2 in Supplementary material). To improve the credibility of the study, we wrote accounts of the transformation and the sequence of events that occurred. Member checking was used to verify our findings in each case organisation (internal validity), and our descriptions and findings provide insights for other similar organisations (external validity). White papers for two of the cases, summarising their key challenges, and providing research-informed guidance have been published; this is an example of utilization.

We used three forms of triangulation to improve the validity of findings [59]. *Multiple researchers* carried out data collection and analysis. Data analysis was led by a researcher who took part in the case's data collection and the analysis was reviewed and intensively discussed among the team before findings were finalised. The study drew on *multiple sources of evidence,* as illustrated in Tables 3, 4, and 5. Each case involved *multiple participants* who were engaged in the transformation, to gain a range of perspectives within each organisation (see Table 2 and

Supplementary material). According to ethnographic best practice, analysis proceeded iteratively, and a tactic of confirming and disconfirming evidence was employed (see Data Analysis section).

Case Selection

The researchers identified two cases by approaching participants in activities organised by the Agile Business Consortium (ABC) in the UK (https://www.agilebusiness.org/). ABC promotes, supports, trains, and educates members on business agility. A further case was approached through a personal contact of the research group. Each organisational transformation had been running for over a year at the time of the study. Evidence that each organisation was transforming to agility was confirmed by multiple research participants, was available in documents such as meeting minutes and in two cases was reported on public websites.

The cases are a district council, a university, and a charity; pseudonyms Council, University, and Charity are used for anonymity. The organisations were all publicly-funded, not required to make a profit, based in the UK, and employed 500 staff or more. The organisations were distinct from one another because each had different goals, different types of customer, different governance and management structures, and different types of operational units. Each case organisation is introduced in Figure 1, and more detailed accounts of the transformations are included in the section The Transformations.

Council

The organisation is a large district council in the UK providing services to a growing population. As a public service entity, any surplus from commercial ventures is fed back into better service delivery. The services the council provides are household recycling and waste collection, local planning and building

regulations, housing advice, licensing, environmental problems, benefits, council tax collections, community safety, public car parks, and parks and community centres. Employees: 500.

University

The organisation is a large geographically distributed distance teaching university in the UK. The founding principle of the organisation was to make education more widely accessible and thus promote equality of opportunity and social mobility. The organisation offers programmes across many disciplines including undergraduate and postgraduate degrees. Courses are delivered through interactive online, and physical materials including text, video, visualisations and books. Course production involves the coordination of multiple organisational units and stakeholders. Employees: 9000.

Charity

The organisation is a long-established charity supporting people in the UK with a particular disability (the customers). The organisation was initially established to take advantage of technologies to support customers but expanded to include a range of different services to support customers in factories, care homes, specialist homes, to provide counselling, develop new technology, provide resource centres, and to sell products. Employees: 2000.

Figure 1: Case descriptions

Ethical approval to carry out the study was granted by the second author's University and all participants consented to take part after being informed about the research. The names and details that identify cases, people, or projects have been removed or anonymised in this article.

Data Collection

Each initial contact invited the researchers into their organisation to undertake the research and identified a gatekeeper who could provide access to participants. For Council, the initial contact was a trusted independent consultant supporting the transformation, and the gatekeeper was a senior administrator; for University, the gatekeeper was the Head of Transformation (for operations); for Charity, the gatekeeper was a Change Manager in the Transformation team. During an initial meeting to gain an overview of the case, the research team and the gatekeeper discussed and agreed on the best way to proceed, and the gatekeeper was asked to facilitate

appropriate data collection. As ethnography aims to see the world from the participants' point of view, data collection plans were flexible [67] in order to respond to participants' perspectives.

In Council, the gatekeeper suggested meetings and activities to observe, and people to interview; we also researched publicly-available information. In Charity, the gatekeeper updated us regularly on progress and provided draft presentations and strategy documents for the Board of Trustees; once the strategy was agreed, he suggested colleagues with different perspectives on the transformation to interview. In University, participant observation was agreed as the primary method of data collection and the gatekeeper invited us to join small teams of staff from across the organisation, who were tasked with exploring agility principles, practices, and tools. University used Google Design Sprints [68] to organise these explorations. For each case, at least two researchers were involved in data collection. Table 2 summarises the data collection activity, including dates to indicate the timespan of data collection.

Table 2 Data collection activity (summary) – an expanded Table 2 is in supplementary material [insert link here]

Data collection	**Council**	**University**	**Charity**
Collection period	Dec 2017 to May 2018 (6 months)	July 2017 to July 2018 (12 months)	July 2017 to August 2018 (13 months)
Observations with 1-3 researchers. Notes, artefacts and video recordings	Non-participant observation of meetings totalling 610 mins	Participant observation of multi-disciplinary teams performing 16 agile discovery sprints, show-and-tell and retrospective meetings.	Agile strategy workshop 180 mins. No other observation possible due to internal access issues and sensitivity.
Ethnographic/contextual interviews with 1-3 researchers. Notes, audio and video recordings	With independent consultant totalling 146 mins	With Head of Transformation, Director of Production and 2 other senior managers totalling 195 mins	With three change managers totalling 302 mins
Semi-structured Interviews with 2 or	With 19 Directors, senior and middle	None required	With 10 senior managers totalling 411 mins

Data collection	**Council**	**University**	**Charity**
3 researchers. Audio recordings transcribed.	managers totalling 520 mins		
Artefacts collected (not comprehensive)	Strategy and Organisational structure documents, Photographs, Meeting minutes	Strategy and redesign documents , Trello board screenshots, Publications, Cultural assessment report	Business plans, Photographs, Cultural assessment report, Strategy documents, Trustee Board papers

Data Analysis

Each case was analysed in three phases. First, an account of the organisation's transformation was written to capture *how* they transformed to agility. This was developed from an immersion in all the data for the case, as recommended for qualitative research analysis [61]. One researcher wrote the accounts and they were reviewed by the research team for clarity and accuracy. These accounts (see Figures 2, 3, 4) represent the transformation as reported to us by our participants.

Second, an inductive thematic analysis of each case was conducted to identify the challenges and successes experienced by participants during the transformation. Each case was analysed thematically by the researchers involved in data collection for that case. This analysis was done manually and followed the 6-step technique described by Braun and Clarke [69], which involves generating initial codes from the data, searching for themes, then reviewing and refining themes. Initial codes and themes were extracted by one researcher and others in the team reviewed and helped refine them. These findings were presented to each case organisation and verified by the participants with no substantial changes requested. The results from this analysis have been published previously in [removed for review]. During this phase, we recognised that several challenges resulted in tensions.

In the third phase, we re-visited the complete data set for each case study, building on the earlier analysis, but focusing on tensions within each case. For this analysis we took an ethnographic stance, i.e. we interpreted and analysed what had been found rather than simply reported it, and sought confirming or disconfirming evidence [60]. When a candidate tension emerged then the remaining data within the case was rigorously searched for "disconfirming instances", i.e. data that contradicts the existence of the tension. The use of a "confirming or disconfirming" perspective counteracts any tendency to choose data that supports an initial view [70]. Analysis proceeded in an iterative fashion where potential tensions are identified, and either discarded or confirmed in discussions among the researchers after considering the full range of evidence. Triangulation across different data sources (people, documents, events) and researchers were the main means for "confirming", reinforced by methodological triangulation [71]. For example, we initially included a tension "creativity vs discipline" for Charity, but we were unable to confirm this through triangulation, and so it was discarded. All of the tensions described in this article were validated in this fashion. Sample extracts of data that confirm the tensions are in the section Tensions faced during Transformation.

The Transformations

Each organisation approached transformation differently, by changing culture, operations, or strategy. Figures 2, 3 and 4 summarise each transformation as described by our participants.

Council's transformation – by culture change

Senior management initiated organisational transformation when they recognised the need to achieve financial stability due to the threat of reduced central government grants for district councils while continuing to deliver improved services to their customers. The transformation process proceeded in stages and was organised into initiatives named: commercially minded, community-

focused, customer innovation, and financially fit. The CEO stated that this transformation aimed to achieve "*world-class support for those who need it*" while being "*the best place to work in the area with the best people*".

In 2008, senior management introduced a change programme. In 2010, they were an early adopter of Cloud IT. From 2011 onwards, the total removal of the government grant by 2020 was foreseen so change became a priority. In 2012, a new business model was deployed to explore opportunities in the market place; an ideas hub for the change process was created in 2013; and in 2014, the vision for moving into an income-generating entrepreneurial culture took shape. In 2015, a new website was developed to meet customers' desires and needs, along with various projects to digitalise services.

In 2016, the council began a further significant transformation over 22 months. This was an organisational restructure and a change to the organisational culture. Central to this transformation was a desire for all council staff to exhibit five commercially minded behaviours: customer focus and insight, delivering results, maximising personal potential, building effective relationships, innovating and adapting to change. The aim was for all staff to adhere to these behaviours rather than to change the behaviour of existing staff. To achieve this goal, most existing staff (excluding the CEO and two directors) went through a behavioural assessment exercise in the process of re-applying for jobs at the council. Most staff either returned to their original roles or entered new roles. Staff could apply for any job at any level, and consequently, some were promoted several levels. During this restructuring, about 70 people left the organisation and there were 100 new recruits.

As part of the organisational transformation, the council imposed savings targets; they reviewed all services, introduced new chargeable services, and began charging for some non-essential services.

Figure 2 Case Council

University's transformation – by operational change

An organisational transformation was initiated in 2016, motivated by external challenges and threats including decreasing student numbers, decreasing funding for higher education, and increasing competition. The purpose of the transformation was to address these challenges by providing a better quality product and services to potential and current students (customers) in a faster timeframe while addressing cost. The transformation involved both a new strategy and various change programmes. The goal of the transformation, set out in the strategy document, was to enhance the responsiveness of the organisation by improving interactions with, and support for, customers, improving the agility of the organisational workforce, by rationalising corporate procedures, governance, organisational processes, and procedures. The curriculum was to become more market-driven to meet customer requirements and more streamlined. Another strategic initiative was cost reduction, to be achieved by reducing non-customer support operations and infrastructure. Digital innovation was another goal, whereby information technology and information systems were to become more customer-friendly. An organisation culture analysis was carried out in 2016 by an independent body. The analysis showed strengths and weaknesses in the culture and proposed 11 transformations needed to make the organisation more adaptive. This led to the development of a culture change plan. One significant change, that could simultaneously satisfy a number of the new strategic goals, was to move to a more agile way of producing courses.

In 2017-2018, the organisation decided to investigate agile method practices common in software engineering [72], to find out which of these practices would be most appropriate to support course development, so they set up discovery teams involving volunteers: curriculum production managers and teams of academic and non-academic staff. During 'agile discovery sprints', the volunteers were encouraged to explore and critique a variety of agile practices and decide which would be appropriate for increasing agility in production. Two agile change agents organised, facilitated, and coordinated the agile discovery sprints. The change agents were experts in curriculum design and production and had a good understanding of existing processes, and organisational structures and constraints.

Other initiatives to improve understanding of agility included senior project managers participating in discussion groups to develop their understanding of alternative project management frameworks, and joint teams, drawn from different faculties and production units, investigating new processes, learning technologies, and methods for collaborative authoring.

Figure 3: Case University

Charity's transformation – by strategy change

Traditionally, the organisation produced a 5-year strategic plan. A plan was developed for 2014 to 2019, but when the CEO changed, a new strategic plan was proposed to address some urgent issues.

The organisation was supporting less than 4.5% of all potential customers. Customer expectations were changing, and they could not readily access the organisation's services. Customers lacked emotional support and suffered high levels of isolation, with only 1 in 4 of working age in employment. One change manager summarised the problem as "*What is the role of a Victorian patriarchal provider of services for […] people in an age where funding streams, public expectations, customer expectations, deem that we are actually no longer relevant. Fundamentally, all of our lead indicators for the business are unhealthy at the moment, so we need to fundamentally transform and that makes it really big, so obviously, the strategy is a major driver of that".* Factors acting on the whole charity sector also affected the organisation, including changes in donation trends, increases in government regulation, increased public scrutiny, increasing competition, and uncertainty about the effects of the UK leaving the EU. In 2017, 400 staff were made redundant to try and control finances.

In September 2017, the executive management and trustees agreed to halt the existing strategy and start a new strategy with a clear vision for the organisation. A small group of change managers drafted a strategy to achieve agility and proposed it to the executive management and trustees. This small group then took the responsibility for embedding the new strategy within the organisation.

The new strategy was to transform the organisation. The overarching aim was to support customers to participate in the world as equals with all people. The organisation wanted to transform individuals, communities, and society. The new strategy, business plan, and budget was published in September 2018. The strategy included a vision statement, values, and priorities with goals. The four priorities were to empower customers, mobilise the community, change society, and create an organisation that is fit for purpose with *"the infrastructure to support a customer-centred, knowledge-based and agile organisation and fostering a culture of accountability and empowerment."*

The new strategy had large-scale, long-term goals and was purposefully designed to be simple, with tangible goals. Prioritisation was an aim, to ensure the most important problems were addressed

rather than all problems. The new agile strategy consisted of a 150-year strategic plan with significant goals, a 3-year rolling business plan, with a 3-month rolling cycle of refinements to the plans.

Staff received training to achieve the strategic priorities through workshops and courses. This training was part of performance management and included leadership and management training in how to achieve great customer service. Also, new recruitment processes and a performance management system were changed to embed the 'agile strategy framework', as the new strategy was called. A change in recruitment was another initiative used to influence a culture change.

Figure 4 Case Charity

The three cases had significant similarities. Each organisation had faced an existential threat and recognised the need to be able to react more flexibly to major changes in the external environment. Before we engaged with them, all three had undergone structural changes, formally reviewed their culture and their strategy, and considered several forms of organisational agility discussed above. All were well established and publicly recognised. None used a specific framework to transform but were inspired by many different sources to develop their own path to agility.

The cases differed in their purpose for becoming agile: Council to achieve financial stability, University to improve customer experience and Charity to support their customers more effectively. They also differed in the focus for their transformation. Council initiated a change to the organisational culture through a behavioural-led assessment of staff. The researchers engaged with this organisation after this assessment had taken place. University approached transformation through operational change. A wider strategy was in place, but different parts of the organisation chose to adopt agile principles and practices at different times and speeds. The researchers engaged with this organisation at the start of explorations for operational change. Charity aimed to transform via a radical revision of its strategy. A small team of change managers devised the new strategy and developed a framework to support the new agile strategy

process. The researchers engaged with this organisation when the new strategy was under development and before its public announcement.

Tensions Faced During Transformation

Data analysis revealed that challenges being faced by participants resulted in tensions. This section describes the tensions that were identified in each case during the analysis. Sample evidence for each case is provided in Table 3 Council, Table 4 University, and Table 5 Charity. Further data covering all the tensions are in Supplementary material [insert link here].

Tensions in Council

Co1 Transformation vs business as usual (BAU): Transformation activities are those necessary to progress change, for example, designing strategy, or implementing new procedures. Business as usual (BAU) refers to activities needed to maintain core business. Participants commented on the very high workloads required to maintain BAU and undertake transformation activities. The tension refers to dividing resources between these activities, which are conducted in parallel.

Co2 Distributed authority vs macro-level goals: With distributed authority in Council, teams and staff felt empowered. However, teams' decisions were sometimes not aligned with the organisation's goals. Inter-team cooperation was lacking at times, and some team-based decisions were not communicated appropriately. The tension arises if teams pursue their own goals without making sure their goals align with organisational and other teams' goals.

Co3 Distributed authority vs regulatory processes: Teams had the autonomy to make and act on decisions, but were not necessarily aware of, or following, regulatory processes; for example,

when one department attempted to handle waste management independently, they were unaware of relevant regulations. The tension relates to requiring adherence to regulations and regulatory oversight while allowing teams to fulfil their goals.

Co4 Required behaviours vs required skills: As part of Council's transformation, all staff underwent a behavioural assessment; any new recruits also had to show evidence of these behaviours. As a result, Council lost staff with specific skills in some areas and found it difficult to recruit people who both had the right skills and demonstrated the required commercially-minded behaviours. The tension is between employing staff with the necessary behaviours while also maintaining the necessary skills.

Table 3 Tensions in Council – illustrative supporting data from different sources. An expanded table is in supplementary material [insert link here].

Tension	**Observation (field note extracts)**	**Contextual interviews**	**Semi-structured interviews**	**Artefacts**
Co1 Transformation vs business-as-usual	*"how to induct new members of staff and change existing staff to new ways of working?"* Senior Board meeting (11.12.17)	*"the <transformation > programme … all became about the re-structure and the transformation…"* 22.02.2108	*"a lot of things fell through the cracks [...] we lost a lot of focus on the BAU delivery, the day-to-day delivery"* Head Connected Knowledge	*"we don't have a corporate plan describing priorities … to deliver things"* AD meeting notes April 2018

Tensions in University

U1 Top-down vs bottom-up transformation: In University, both top-down and bottom-up transformation activities were underway. This tension relates to these multiple transformation activities and the need to align senior management control to promote and support agility with operational adoption of agile practices.

U2 Functional silos vs cross-functional cooperation: Agility favours cross-functional co-operation but University's organisational structures and cultures are based on functional silos i.e. production specialists, content providers, infrastructure and support units operate independently. This tension concerns how much to structure and manage according to functional groupings and how much to structure and manage according to cross-functional teams.

U3 Maintaining knowledge vs moving to new ways of working: A large amount of organisational knowledge was embedded in existing ways of working. There was concern that new ways of working might override valuable experience. The tension comes in deciding how much existing organisational knowledge and experience needs to be kept when moving to new processes, and how to identify what is important enough to retain.

U4 One-shot delivery vs incremental refinement: Using one-shot product delivery, the complete course is delivered as a whole to the customer, while incremental refinement focuses on smaller regular deliveries. University's previous approach was one-shot delivery, and the tension is to decide how much to deliver in one go and how much to deliver in incremental refinements.

Table 4 Tensions in University – illustrative supporting data from different sources. An expanded table is in supplementary material [insert link here].

Tension	**Observation (field note extracts)**	**Contextual interviews**	**Artefacts**
U1 Top-down vs bottom-up transformation	A new strategy and organisational re-design that included agile working were regularly presented to and discussed in senior	"… *not much going on in the middle, it's all top-down … <there is> a high level of sensitivity in … terms of… where leadership for these*	Charts & presentations espousing the senior management view. Organisational re-design plans that reinforce hierarchical structures.

Tension	Observation (field note extracts)	Contextual interviews	Artefacts
	management and governance forums. Workshops were undertaken to try and align bottom-up and top-down approaches.	*kinds of initiatives sits in the organisation*." Director of Production	Review of Asset Development department indicates tensions between governance and operational groups

Tensions in Charity

Ch1 Changing too quickly vs changing too slowly: The organisation needed to transform quickly enough to respond to environmental threats it faced while changing at a pace that allowed people to adapt. Also, the new strategy had to be approved by the Board of Trustees, who worked to a structured timetable. The tension is between keeping up the momentum of change while allowing sufficient time for the changes to be accepted by both the Trustees and staff.

Ch2 How much to change vs how much to keep stable: Changing too much at any one time can lead to instability. The evidence showed (see Table 5) that the participants recognised the need to change how they work and how they support their customers, but felt a general sense of unease about continuous change and stability. The tension comes in deciding how much to change, and how much to keep stable at any one time.

Ch3 Change for the short-term vs change for the long-term: This tension emerged because immediate challenges needed a short-term response. But short-term changes can compromise long-term goals. For example, significant financial cuts were needed in the short term, but long-term goals such as increasing the customer base required significant investment.

Ch4 Change the strategy vs change the structure: Charity made extensive changes to the organisational structure prior to developing a new strategy. However, embedding an agile process to evolve the strategy iteratively required further changes to the organisational structure. This tension is between letting the strategy development process lead structure change or changing the structure to accommodate an agile strategy development process.

Ch5 Involving enthusiastic people to energise change vs involving representatives from the whole organisation (enthusiasts versus representatives): Previous experience convinced the change managers that involving everyone from across the organisation would not be successful for initiating this transformation. Instead, they started with a small, self-selected and enthusiastic group. However, other colleagues felt undervalued because their input was not sought. This tension concerns whether to initiate change through participation of enthusiasts or through representation across the organisation.

Table 5 Tensions in Charity – illustrative supporting data from different sources. An expanded table is in supplementary material [insert link here].

Tension	**Contextual interviews**	**Semi-structured interviews**	**Artefacts**
Ch1 Changing too quickly vs changing too slowly	*"we are effectively asking <the Trustees> for an extra meeting in January, because otherwise the sign-off wouldn't have happened until early March … we have to get papers done a month in advance of meeting …"* March 2018 review	*"we didn't do enough fast enough in terms of those cuts and decisions were put off which should have been made earlier*" …" Head of Partnerships; "*…we need to own our plans, expectations need to be managed… it would be great if we have a bit more time…"* Head of HR	Pace of change regarding the new strategy and business plan is evidenced through Board of Trustees' papers and draft documents

A Paradox Theory Lens

Smith et al. [16] proposed paradox theory to theorise about tensions in organisations. Theories of paradox help navigate the complexities of decision making in the context of everyday contradictions in organisations and in society [18]. A paradox is a particularly challenging tension whereby interrelated elements appear contradictory, exist simultaneously, and persist over time [17]. Stacey [73] defines a paradox as the '*presence together at the same time of self-contradictory, essentially conflicting ideas, none of which can be eliminated or resolved*' (p. 13).

We wanted to use paradox theory as a lens to gain theoretical *insight* into the tensions we found and identify concrete suggestions for practitioners. As the first step, we considered whether our empirically-grounded tensions could be categorised using the four categories of tension from Smith et al. [16]: belonging, learning, organizing, and performing. According to Smith et al. [16], tensions can also appear in between these categories (e.g. learning/performing), with a continuous need over time to re-evaluate and address tensions. The tensions in our cases could indeed be mapped to three of the four categories, as shown in Table 6, thus providing empirical support and specific examples for these categories.

Table 6 Mapping of organisational tensions in [16] *and case study tensions*

Organisational tensions [16]	Tensions from cases
Learning – relating to change and innovation, reflecting the nature and pace of the change	*U3 Maintaining knowledge vs moving to new ways of working* *U4 One-shot delivery vs incremental refinement* *Ch1 Changing too quickly vs changing too slowly* *Ch2 How much to change vs how much to keep stable* *Ch3 Change for short term vs change for long term*
Organizing – inherent to complex systems including '*collaboration and competition, empowerment*	*Co2 Distributed authority vs macro-level goals* *Co3 Distributed authority vs regulatory processes* *U1 Top-down vs bottom-up transformation* *U2 Functional silos vs cross-functional cooperation*

and direction, and control and flexibility' [16, Figure 1, p. 383]	*Ch4 Change strategy vs change structure*
Performing – resulting from conflicting interests of stakeholders	*Ch5 Enthusiasts vs representatives* *Co4 Required behaviours vs required skills*
Learning/Performing – between building for the future and succeeding in the present	*Co1 Transformation vs business-as-usual*
Belonging – arising between individuals and groups	*No tensions identified*

We found that most of our tensions map to the learning and organising categories. This is not surprising as agile transformations are also about "*the efforts to adjust, renew, change and innovate*", creating "*tensions between building upon and destroying the past to create the future*" (i.e. learning) within complex organisations, with "*structuring and leading*" creating tensions between "*collaboration and competition, empowerment and direction, and control and flexibility*" (i.e. organising) [16, p. 383, Fig 1].

We found one tension, *Co1 Transformation vs business-as-usual*, that mapped to the learning and the performing categories, reflecting '*the tensions between building capabilities for the future while ensuring success in the present*' [16, p. 383, Fig 1]. We found no tensions that mapped to the belonging category, which could be because we explored the tensions from the perspective of the leaders and managers rather than from that of staff affected by the transformation.

Applying paradox theory further, we looked at how Smith et al.'s [16] theory of paradox characterises tensions as paradoxes, dilemmas, and dialectics. The theory is based on the metaphor of dynamic equilibrium that supports the coexistence of contrasting tensions and their

sustainability over time. This theory supports leadership decision-making in an agile transformation because leaders may need to deal with opposing tensions in the agile context of continuous learning and improvement. A paradox occurs when contradictory interrelated elements exist simultaneously and persist over time; a dilemma is when the competing alternatives have distinct advantages and disadvantages that can be resolved by evaluating the pros and cons of each. For a dialectic, resolution is achieved by bringing the alternatives together and integrating them, eventually giving rise to another tension. These three types overlap and each may evolve over time into a different type.

In addition, Smith & Lewis [16] argue that tensions are both inherent to organisations and socially constructed, and that they change from being latent to becoming salient when environmental factors bring them into focus, e.g. when there is change. Agile transformation may trigger tensions to become salient, and by addressing one dilemma, e.g. change strategy vs change structure, other latent tensions resulting from the mutual dependencies between strategy and structure may become salient.

We argue that dilemmas are tensions that transformation leaders should resolve at the start of a transformation, dialectics are tensions that, although resolved during the transformation may give rise to other tensions, and paradoxes are tensions that are likely to persist throughout transformation and beyond. The dilemmas suggest questions that transformation leaders need to answer before the transformation starts, as in Table 7. These questions may also be revisited during the transformation as continuous improvement is implemented and regular reviews of performance become embedded.

Table 7 Dilemmas and questions to be answered at the start of a transformation

Dilemmas	Questions for leaders when initiating an agile transformation
Ch1 Changing too quickly vs changing too slowly	*How long do we need to spend on the transformation?*
Ch2 How much to change vs how much to keep stable	*How much are we going to transform in one go?*
Ch3 Change for short term vs change for long term	*What is the time horizon of the transformation?*
Ch4 Change strategy vs change structure	*What is the focus of the transformation?*
Ch5 Enthusiasts vs representatives	*Who do we need to involve?*
U1 Top-down vs bottom-up transformation	*How will we manage the transformation activities?*
U4 One-shot product delivery vs incremental product refinement	*What type of product delivery do we want to achieve with the transformation?*

Paradoxes and dialectics were also identified in our study. These tensions prompt questions that need to be asked and answered repeatedly throughout transformation. From our data, it is not clear whether our tensions were latent before the transformation or not, nor whether they represent paradoxes that persist over time or dialectics where alternatives are brought together and integrated, so we consider them together. It is clear however that they were salient during the agile transformations and they will require constant renegotiation and integration throughout the transformation. Table 8 shows the tensions that are paradoxes or dialectics and the corresponding questions that they prompt.

Table 8 Paradoxes and dialectics requiring attention and ongoing negotiation and integration

Paradoxes and dialectics	Questions throughout the transformation
Co1 Transformation vs business-as-usual	*How do we keep our core business going during transformation?*
Co2 Distributed authority vs macro-level goals	*How do we guarantee that teams feel empowered and yet understand the organisation's goals?*
Co3 Distributed authority vs regulatory processes	*How do we guarantee that teams feel empowered and yet aware of their regulatory responsibilities?*

Co4 Required behaviours vs required skills	*How can we keep core skills throughout and beyond the transformation?*
U2 Functional silos vs cross-functional co-operation	*How can we avoid silos while maintaining cross-functional interactions?*
U3 Maintaining knowledge vs moving to new ways of working	*How can we avoid losing valuable knowledge? How relevant is existing knowledge in the context of new ways of working?*

Our analysis of tensions with a paradox lens has surfaced questions that practitioners/leaders can ask of the organisation when undertaking an agile transformation. Acceptance of and continuous revisiting of tensions is considered necessary for leadership in agile transformations [74], and these questions complement existing guidance [17] giving leaders a consistent way to identify, revisit and revise their understanding of tensions they may encounter.

Discussion

This article addresses two questions. The first was *how do organisations transform to agility?* We found that each agile transformation was unique. By exploring empirically-grounded accounts of three transformations to organisational agility from the perspective of those leading the transformation, we established that each of the three case organisations started with a different focus. Organisational culture change (Council), operational change (University), and change to the organisation's strategy (Charity) were the foci. The organisational agility literature discusses these forms of organisational agility but mainly as theoretical possibilities rather than with current empirical evidence. In one of the very few empirical studies of a large-scale agile transformation, Paasivaara et al [15] concluded that "*there seems to be a need for the organization to tailor its agile approach to fit its own organizational, business and product context*" (p.2589). This is the case with our three organisations who navigated their way into

agility in different ways, addressing the complexity of organisation-wide transformations and encountering different challenges.

The second question was *how can organisations navigate through the challenges they encounter?* We found that throughout the transformation, challenges in the form of multiple tensions of different types arose. We identified 13 tensions in the three cases (see Table 6), which illustrates the kind of tensions that organisations and leaders face. Based on a further analysis of those tensions applying a paradox theory lens we developed specific questions that leaders and organisations can ask before and during transformation to help them identify and navigate the tensions that may occur. Identifying and navigating tensions may be critical to successful agile transformation because, "*leaders' responses to <…> tensions may be a fundamental determinant of an organisation's fate*" [16, p. 381].

Theoretical contributions

Our study makes two theoretical contributions to paradox theory. First, we provide empirical support for the tension categories discussed in paradox theory. The 13 specific tensions faced during transformation in our three case studies, map to three of the four tension categories in [16] and are concrete examples of them (see Table 6). Second, we extend support for paradox theory by showing that tensions in organisations transforming to agility occur *during* transformations and not just in exemplary organisations that are already fully agile, as reported in [17]. This has not been shown before as far as we are aware.

Our study also illustrates how paradox theory can be used to inform practice. By mapping the tensions encountered in agile transformations to the categories of tensions identified by Smith et

al. [16], and applying the theoretical lens of paradox theory, we developed specific questions for agile leaders to address both at the start of an agile transformation and continuously throughout the transformation (see Tables 7 and 8). This contributes to the understanding of how paradox theory can be used in managing tensions and offering practices to help leaders in their path to agility [17].

Practical contributions

This article makes practical contributions that address Walter's [8] three concerns about organisational agility studies, and provides authentic accounts that can support leaders in understanding how to transform to agility. We focused on publicly funded, not required to make a profit, organisations rather than manufacturing companies, and add to knowledge about agility transformations in this relatively unexplored domain. We explored challenges to organisational agility in the form of tensions, and we have contributed an exploratory empirical study rather than a conceptual study. This article also provides in-depth insights about how organisations realise agility in practice, which is called for by both Walter and Gregory et al [8, 9].

By providing empirically-grounded accounts of three transformations to organisational agility from the perspective of those leading the transformation, we illustrate how a transformation to organisational agility may start from culture change, strategy change or operational change. We identified 13 tensions that arose across the three cases, which illustrate the kind of tensions that organisations and leaders face. Through the lens of paradox theory, we provide specific questions to ask before and during transformation to help leaders and organisations to navigate tensions that may occur in transforming to agility. Through this, we have highlighted that

organisational transformations to agility are individual, and that in practice, organisations are inspired by many different sources when following their path to agility.

Limitations and Future work

As an ethnographically-informed set of case studies, this research has limitations in terms of generalisability. Statistical generalisation is incompatible with a flexible research design [67], but through our application of paradox theory we aim to have achieved analytic generalisation in that other similar organisations may recognise the tensions and find the practical contributions helpful. A limitation for this kind of study is that it is hard to exclude the influence of the researchers, especially where observation is involved, and a different set of researchers may have developed alternative findings; our approach to validity aimed to minimise this possibility. We only investigated three publicly-funded organisations, but given the quantity and type of data collected, this represents a significant effort. Another limitation is that we cannot say we studied a complete transformation. Data collection lasted for many months and covered a significant period during each transformation, but still represents a limited episode during the overall transformation process. In any study of this type, it can be challenging to identify the beginning or the end of a transformation, as transformations take place over many years and evolve into a state of continuous improvement.

This study points to a wide range of potential future research directions. The study did not set out to identify tensions, but tensions emerged. Future research directions include: explicitly seeking empirical evidence for tensions within agile transformations; further exploring how to overcome the tensions we identified and how the guidance in paradox theory may be applied; looking to

categorise the types of tension that may arise; looking for patterns in tensions over time, such as changes in nature from latent to salient; presenting further accounts that capture the reality of agile transformation; studying the role of different facets of organisational agility (such as culture, strategy and operation) during transformation and the relationship between them; and investigations of how theory can help practitioners to navigate these tensions. All of this research should be in sectors other than manufacturing, where most existing studies have focussed. In particular, studies on these topics within publically-funded organisations are needed. Such work would benefit transformation leaders and managers from a wider group of organisations by providing concrete experiences, insights, and practical suggestions for how to deal with challenges and tensions in transforming to agility.

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