Title: “How did you get the change to stick?” - exploring a change process in a UK university via co-evolution.

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Abstract

This conceptual paper considers change processes in universities via a reflexive account of a case of the transformation of welcome, induction and transition (WIT) provision at a large UK university to support student orientation, undertaken in response to the COVID-19 pandemic. The paper presents a narrative from the perspective of co-evolution, an approach developed in natural science but applicable to large, complex institutional settings, characterized by hierarchies and local cultures. Co-evolution examines how adaptation within a system and interaction between its parts mean that some changes occur and stick, whereas others do not occur or are not sustained. This framing emphasizes the importance of systems thinking and reciprocal learning at multiple levels, adding to the menu of theories available to support change in higher education. Drawing on our case that involved innovation, some of which led to new ways of working, the paper argues that co-evolution offers specific insights valuable to those making change and those understanding it.

Keywords

Co-evolution, change, adaptation, orientation, transformation, higher education

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Conflicts of interest

The authors have no conflicts of interest to declare other than the positionality described in the paper as members of University staff.

Introduction

Innovative ideas are constantly proposed in higher education (Major and Braxton, 2024), but given their high failure rates (Kezar, 2018), practitioners ask frequently which innovations succeed, and why they are sustained (Bearman et al., 2024). In this paper we explore what can be learned about embedding change in higher education institutions by presenting a reflexive account of the first few years of an institution-wide innovation– the introduction of online Welcome, Induction and Transition (WIT) at a UK university to support student orientation.

The paper is primarily conceptual, aiming to add to thinking about change processes in a higher education context and considering how change might be embedded and sustained. Thus, our primary focus is processes of change within universities, which, following Kezar (2018 p. x), are understood as "those intentional acts where a particular leader drives or implements a new direction", with innovation being a "type of change where a new concept, program, or intervention is introduced and implemented on a campus". Thus, we consider how this change was initiated within the complex multi-tiered environment of a large university and reflect on how this original initiative has evolved, and what has been sustained.

Crucially, we highlight the value of co-evolution for understanding change within a university context, emphasizing the importance of processes of adaptation as well as adoption, iterative cycles of learning and potentially, transformation. Indeed, our purpose is to elucidate the value of a co-evolutionary lens for understanding how change processes might develop, adapt and be sustained. Put simply, co-evolution examines adaptation within a system, interaction between its parts, considering the "processes through which different systems or subsystems co-evolve and mutually adapt to each other" (Van Assche et al., 2022, p. 1226). As such, "a coevolutionary [sic] perspective specifies the mechanisms that shape how properties, processes and innovations are maintained or varied over time" (Haider et al. 2021, p. 1305).

Co-evolution as a concept has roots in biological sciences and has been extended to socio-ecological systems (Stagl, 2007; Haider et al., 2021), socio-technical systems (Foxon, 2011; Murmann, 2013), has been explored within design (Poon and Maher 1997, Crilly, 2021), governance and policy (Van Assche et al., 2022) and management and international business literature (Dieleman and Sachs, 2008; Suhomlinova, 2006). As Van Assche et al. (2022, p.1226) note, there is not one literature per se and so "the value of co-evolutionary [sic] approaches—both in the analytic and normative sense—has often been underestimated". Co-evolution is

often combined with other approaches, for example to explore how organizations change over time through interactions with their environment in combination with institutional theory (Dieleman and Sachs, 2008; Suhomlinova, 2006), and indeed, as Haider et al. (2021) note, employing a variety of ontologies.

To our knowledge, applying co-evolution to a university setting has been minimal, though we recognize that there is a long history and related critique of ecological models of higher education that emphasize the importance of context and looking at the system within which education takes place (Renn and Smith, 2023). Our proposition of a co-evolution perspective goes further, by examining the context and the interaction and reciprocity between elements of the system. Indeed, we suggest that a university, in which there might be multiple sub-systems, with an interplay between individual-level practices, institutions and technologies, all operating at different scales, but in which different elements have some independence from each other, is a highly appropriate context for its application. In this paper, we show that co-evolution can aid understanding of how innovations are embedded, recognizing that innovations may evolve, due to interactions at different levels of the organization and the agency of actors in the system, and with an emphasis on organizational learning to sustain change. The question we seek to answer in this paper is: How can a co-evolutionary perspective help us understand why certain university-wide innovations are embedded and sustained, while others are not?

Conceptual approach and key literature

Co-evolution is a distinctive approach to understanding change but has connections to, and affiliations with, several other approaches and perspectives. The six categories of theories presented by Kezar (2018, Table 3.1) as a tool to help change agents decide the right mix of approaches to adopt, how, and when, provide us with a useful framework in which to explore the distinctiveness of co-evolution and how it augments or complements other approaches.

Some of these approaches are focused on planning change (e.g., scientific management), others are more attuned to understanding a process that has happened or is on-going (e.g., cultural theories). Some more recognized theories of change have attraction in terms of their clarity, especially with respect to resourcing and planning in the initial stages. For example, scientific management models help in understanding organizational change as a planned intervention with top-down steps to create implementation structures and processes; however, in contexts in which autonomy is exercised by distinct units or actors, such approaches are

limited, as change is not simply a planned linear process, but also “emergent” (Grabill et al., 2022, p.90). An emergent process is a “continuous, open-ended process of adaptation to changing circumstances and conditions” (By, 2005, p.374), and it is through this emergent process that most learning and the opportunities for sustained change occur.

Similarly, co-evolution differs from so-called scientific approaches in which the key to learning solution is more information, social structure-based theories in which society creates barriers that need to be removed, or where action A leads directly to outcome B. Co-evolution highlights context and uncertainty alongside the variable nature of responses to change and the interactions between actors (Stagl, 2007).

Variations of scientific management approaches to change such as Kotter’s eight steps (or similarly the ADKAR Model[1]) recognize the need to understand sources of resistance to change (Kezar, 2018, p.51). The Kotter change model tends to assume that the manager/leader has the best interests of the organization and that employees/followers have a narrower point of view that is self-interested or mistaken. Critics of ‘hubristic’ and ‘charismatic’ leadership argue for a negotiated and constructed approach related to the needs of a particular place, not dismissing the views of those led. This sees leadership as a dialogue with followers, recognizing the agency of organizational actors, emphasizing contestation and the “facilitation of disagreement and dissent” as much as “achievement of cohesion and agreement” that is traditionally stressed (Tourish, 2014, p.79). A planned change model might be conceived of as a “conceptual and planning model” (Grabill et al., 2022, p. 86) that can provide a starting point but might be best used in combination with other models (Appelbaum et al., 2012).

The range of theories applicable also may differ in terms of unit of analysis: whereas social cognition models tend to start with individual behavior, institutional and neo-institutional approaches are all about the system, with little role for agency. Due to the core metaphor of the ecosystem, co-evolution connects to ecology, and links to such system-oriented approaches to investigating change, and views of change that recognize agency of actors at multiple levels (e.g., political theories).

Given its employment of environmental and ecological metaphors, co-evolution most obviously draws on evolutionary perspectives. An evolutionary approach emphasizes the importance of adaptation and a systems focus. In change theory, evolutionary change is understood as

processes of adaptation over time rather than as a deliberate intervention, or as a reaction to an external environment. However, Kezar (2018, p.51) highlights that "by focusing on external forces, it tends to overlook or ignore human agency". In contrast, co-evolution describes change processes that are not simply a reaction to external processes, but as a dynamic process in which parts of a system, which can be conceived of as populations of actors, are inter-dependent (Haider et al., 2021), and in which actors within the system have agency. Thus, when applied to change in an organization, co-evolution draws insights from political approaches, with respect to recognizing the actors' agency and power relations. It also recognizes the importance of culture, making that explicit or visible, especially with respect to what is seen as legitimate. This means that change agents should recognize and 'align' with their institutional culture (Kezar, 2018, p.56).

Co-evolution examines adaptation within a system and interaction between its parts, considering the symbiotic processes and mutual benefits. Crucial to co-evolution is recognizing that change is not linear, but rather recursive or circular, fast and slow. Both evolutionary and ecological approaches to change draw on the idea of adaptation in socio-ecological systems and Holling's (2001) adaptive cycle, which considers a system's resilience in terms of processes of stabilization and destabilization following a disturbance in terms of four phases: release, reorganization, growth, and conservation.

A key difference between evolution and co-evolution is the idea of reciprocity, and the way in which the agents and/or populations within the ecosystem change and are the initiators of change. This may be because of implicit features in some populations becoming more explicit and part of general or global patterns, which is seen as a process of emergence (Poon and Maher, 1997). Further, in terms of organizational change or design, not only do solutions change, but so does understanding of the problem to be solved.

Moreover, if evolution is survival of the fittest, co-evolution is more about mutual benefits, where "the interacting populations raise each other's fitness, rather than the two populations existing in a competitive or parasitic relationship" (Crilly, 2021, p.336). Translating this to a social system, co-evolution is not simply 'co-dynamic' change and incremental changes but recognizes the importance of double-loop learning based on feedback loops, that is, not just doing the same thing better but rethinking how things are done (Stagl, 2007). A transformation takes place. One of these key mechanisms is the process of "variation and selection" as

expressed in “social systems” through different forms of communication and negotiation and importantly “learning” (Stagl, 2007, p.5).

A concrete example of co-evolution is Morgan et al., (2018) study, which considers the interplay between technologies (or innovations), business operations and user practices. As Morgan et al., 2018, p.236) summarize, a co-evolutionary analysis requires the identification of specific actors undergoing a change process (‘populations’) and “of reciprocal causal mechanisms”, such as messages, communications, user responses or learning.

Summing up co-evolution, its key features are presented in Table 1 below, which draws on the core headings Kezar (2018) used to compare change theories. Our engagement with this set of theories as a sounding board has helped us to identify the features of co-evolution as a tool for understanding a change process, and how agents in a university context might find this useful for their own change initiatives.

Table 1 Features of co-evolution

Theory features	**Co-evolution principle**
Why change occurs	Process of change catalyzed by an event (could be internal or external)
Process of change	Adaptation; learning; fast and slow cycles; recursive; symbiotic; agency
Key metaphor	Ecosystem
Context of change	Systems approach: recognizes an organization as a combination of sub-systems, with their own agency (populations). Focus on learning – as a key element of adaptation – and potentially transformative change
Tactics	Draw on understanding of context (natural history). Map out eco-system to identify populations. Embed processes of learning to understand adaptation and generation of mutual benefits

Source: authors’ own elaboration, based on headings from Kezar 2018 (p.46-7).

To apply co-evolution to change in a university, it is important to start with the idea of the organization as a system, or indeed as an ecosystem (Kinchin, 2023). This has links to the concept of the “ecological university” (Barnett, 2011) that highlights the interface between the

university and its geographical and policy context, and the Earth as a system. An ecological perspective as exemplified by Kinchin (2023, p.922) “sets out to map the university environment in all its richness and complexity”. This involves drawing on both structuralist and post-structuralist concepts to develop an understanding of the ecology of a higher education institution, both the organizational elements (constellation of departments, services etc.) and core ideas or concepts that frame or motivate activity. Kinchin stresses the importance of understanding the institution’s ‘natural history’, that is the ideas, knowledge and stories within the organization that form a ‘knowledge base’. Whilst recognizing the merits of an ecological framing of the university, our concern was to explore an intentional change process rather than exploring the ontology of the higher education system. Further we aimed to consider how change might be sustained.

How change initiatives succeed or fail depends on how change is perceived and implemented by all stakeholders (Grabill et al., 2022). Therefore, it is important to consider both plans and structures and the agency of the people within the organization, alongside how they are influenced within that system. In practical terms, this can mean drawing together supportive coalitions, understanding who to influence and how, something that cultural perspectives also emphasize. Conventional approaches such as Kotter’s change model (2012) have been modified within in academic institutions with a greater focus on the role, formation and evolution of the ‘guiding coalition’ and how they can act as ‘accelerators’ where such change agents have a “clear and deep understanding of the organizational culture” (Odiaga et al., 2021, p.1).

In the following sections we develop understanding of co-evolution, conceiving the university as rooted in an ecological view of the organization and change. Two key elements are that leaders need to understand that change exhibits openness and unpredictability, meaning that, contra scientific management and other approaches focused on planning, outcomes are essentially beyond management control. Second, managers must grasp that change is context-dependent, i.e., it comes from somewhere, reflecting an organization's natural history. Thus, we see co-evolution as a useful tool to reflect and understand change that has happened, but its insights may also help leaders bringing in and wishing to sustain innovations particularly in a university context, to support processes of iteration and learning, as we seek to highlight in our case.

The case study context

Following Flyvbjerg (2006) we see phronetic value in learning from reflection on case studies. Both processes of organizational change frameworks and co-evolution lend themselves to a case study research approach, to conceptualize the analysis of how and why questions, especially to consider change over time, including with respect to institutions, structures and processes, how these are framed and understood and contextualized (Mjøset, 2009; Yin, 2018). A case study approach can engage with both quantitative and qualitative data. These approaches can allow for analyses such as those documenting a change in specific metrics over time, or capturing reasons for changes and following their trajectories respectively. Case study approaches are frequently adopted in co-evolutionary research, for example, analysis of variations of sustainability standards and how they are understood in different national contexts to generate a co-evolutionary narrative (e.g., Manning et al., 2012).

At this stage, we must clarify how we have used our case. As Greenhalgh (2025, p. 2) notes, case studies are "an inherently unstructured form [that] does not lend itself to standardization". Our paper does have many of Greenhalgh's hallmarks of a case study, being curiosity-driven and responsive, offering an holistic, in-depth, 'thick' narrative account of a process; however, otherwise it does not fit neatly into her taxonomy of case studies, displaying simultaneously elements of those found in social science, implementation science, and education. Thus, it seeks to generate theoretical knowledge that is somewhat generalizable; "describe[s] real-world successes from which other teams can gain…practical guidance" (p. 2) based on retrospection; and seeks to "transmit practical wisdom…draw[ing] on our own real-world experiences" (p. 8).

In terms of data used, our paper makes reference to empirical data of various types, including responses from staff and student surveys, interviews, and focus groups, and analytics data measuring online resource usage, all of which, have been analyzed using qualitative methods and descriptive statistical methods as appropriate. The case is not, though, a typical empirical case in which the data were collected intentionally for the purpose of research and then analyzed. The set of data sources we have used for the paper was generated in practice, to support decision-making. We have curated it to support learning and reflection. Thus, in this paper we have not discussed the data analysis methods in detail as would be typical for an empirical paper. Interested readers are invited to consult the report (Mearman et al., 2021). Instead, the paper presents reflections on our own actions, decisions and experiences as

actors in a transformation process, including how we and others used the above empirical data. Thus, we are not interrogating the data per se, but reflecting on the process of change, rooted in this experience. The paper's methods, as such, are processes of reflection facilitated via visualization and engagement with varied concepts associated with change in higher education.

The development of the visualizations was a key element of the analytical process, which helped us with the conceptual development that we aimed to offer through the paper. In line with the case study methodological approaches, we used the visualizations to help with sense making and to think through plausible explanations for phases of the project, and how aspects of the innovation were understood and sustained (or not) by actors within the institution. The development of Figure 2 was key in this approach where the three authors collectively identified the populations of actors within the change process and mapped key events that occurred throughout the development and delivery of the initial iterations of the WIT project. We did this by creating a detailed list of steps taken throughout the development of the project on individual sticky notes, which were then arranged related to their respective populations of actors within the process and in order of time. Links between the events were then made to identify the pathways of co-evolution; that is, the key events that acted as turning points for iteration or signposts to continue effective elements of the work. Early iterations of Figure 2 were shared with key stakeholders for feedback and an iterative approach to refinement was undertaken to ensure the plausibility of the narrative. Figure 2 therefore, elucidates the co-evolutionary nature of the change and how, and where, aspects of it were sustained. It is this that we present in this paper rather than the evaluation of the quality of the resource and surrounding provision, which are presented elsewhere (Mearman et al., 2021).

In presenting our constructed narrative, we must acknowledge another key methodological feature of case studies (Carter and Sealey, 2009), and other personally reflexive (Wilkinson, 1988) accounts: we must recognize our own positionality (see Kezar, 2002); first, as people invested in the success of the project and connected to it; and second, as having prior beliefs and disciplinary backgrounds that may have influenced both how we behaved in executing the project, and how we reflect on the project now. Both authors a and c have heterodox/ non-mainstream economics backgrounds, with more recent engagement in sustainability in education and organizations. Author C has previously published work informed by co-evolution (Morgan et al., 2018) and Author A has explored realist concepts of system, structure, agency, and power (Downward and Mearman, 2007). Whilst these principles were not articulated

explicitly in the WIT project, they may have implicitly affected its shape. Moreover, considering also that Author B is trained as an ecologist, all three may be pre-disposed to models of change that adopt an ecological metaphor.

Further, our positionality is evident in that we are reflecting on a process in which we were players to different extents. Author C was academic lead for the institutional project, Author A was involved as a member of different formulations of an advisory group and co-author of an earlier pedagogical research project (ELIXIR) on student orientation (usually known as induction in the UK) and Author B was an independent research fellow who was tasked with analyzing the wealth of quantitative and qualitative data generated by the project to evaluate the first iteration (Mearman et al., 2021). Towards the end of year two of the institutional project, the three authors began to reflect on the learning from the process, employing more formal framings.

Applying 'qualitative sensibility' (Braun and Clarke, 2013, p.9), we have sought to mitigate our self-interest in the case by focusing on learning from it, and supplementing our reflection, engaging with change theory and extant models to help us recognize parallels with other contexts. We wanted to evaluate and explore factors that supported effective embedding of an organizational change. Hence, we questioned and tested the robustness of our empirical and analytical findings, reflected on our positionalities and biases, and sought to validate the findings through presentation and discussion in scholarly forums in our own institution and other higher educational institutions across Europe. In that respect, whilst we are not neutral in the process of evaluation, we have sought to avoid un-reflexive subjectivity.

Furthermore, we hold that our roles help us step back from the specifics of the case to consider organizational learning more generally. As authors of this paper, via our interpersonal reflexivity (Walsh, 2003), we recognize we have had privileged insights into the change process explored in this paper as we were involved in diverse ways in the conceptualization, implementation, and evaluation of the WIT processes. Thus, the paper benefits from reflecting on the process of change in which we were involved.

The case

From the perspectives of both case study research and co-evolution, context is neither trivial nor neutral; thus, before presenting a timeline of the transformation of WIT provision that took place, some institutional detail is necessary.

The case study site is a large (almost 40,000 students) research-intensive UK university that offers diverse academic and vocational programs. The University was, at this time, organized into seven Faculties, containing over forty schools or departments; we will refer to 'schools' to capture the local decision-making unit. The student population was until recently predominantly undergraduate, UK-based, white and came from families in higher socio-economic classifications, but had recently changed, partly reflecting the University's strategic efforts (see University of Leeds, 2020) to diversify the cohort. In addition to provision in schools, several central professional services were involved directly in diverse activities relating to WIT, including recruitment and registration (Marketing and Admissions), and others related to everyday life, such as residences and catering. Yet more were associated with well-being, for instance teams working on Student Support, and those focused on Student Success and Opportunity. In addition, various teams were working specifically on WIT, albeit in different ways and in relation to different categories of student. For clarity: 'welcome' and 'induction' refer to the initial period of engagement with students, usually referred to in literature as 'orientation', whereas 'transition' means longer term adaptation. Thus, by 'welcome' we mean all the acts of welcoming students. Induction refers to specific, formal, information-giving sessions and resources. 'WIT' refers to the whole approach taken. Notably, reflecting literature on the First Year Experience and 'transition pedagogy' (Kift et al., 2010), a feature of our new approach was to recognize that welcome and induction are transition processes.

It was in the above context that a transformation in the University's approach to WIT began in April 2020, as a response to the beginning of the COVID-19 pandemic, after it quickly became apparent that a typical in-person welcome was unfeasible for September 2020. Thus, complementing the pivot that took place in teaching, it was decided that the balance of activities would shift to using online resources and events augmented by in-person events where possible. This began with the creation of a small group that was tasked with planning the institutional response. The group comprised an academic lead (Author C), members of the University's Digital Education Service (since the primary output from the transformation would be an online resource), academics engaged in WIT-related scholarship (including Author A), and professional project management expertise, especially in the earlier phase.

This group gathered expertise from around the institution to build a framework to underpin the creation of the institution-wide digital resource. The framework comprised a set of principles

agreed through the governance structure and facilitated collaboration between colleagues from several areas who had previously worked separately or sequentially (e.g., colleagues working separately on welcome for international, and home students). The group created a student journey map, which identified what students were likely thinking, doing and needing along their transitions into university. This map of student activity and experience guided the design and deployment of the digital resource in its initial development phase in May-August 2020.

To facilitate development, and aid dissemination, the WIT Network was established. This was a larger cross-institutional collective of academics and professional services staff who volunteered to contribute to the transformation. Many members were inspired by an online workshop on virtual welcome events in May 2020 – i.e., just after the senior management made the decision to create the institutional online induction resource – which shared the findings of a recent pedagogic research project on WIT (Mearman and Payne, 2021). The network comprised practically minded people, keen to deliver a project, and pedagogical scholars, which provided conditions for sharing of ideas and quickly grew to over 200 members connected through an interactive platform.

The work of the WIT Network became two-fold: first, to build the online resource to house useful information, and second, to provide school-based online, and possibly in-person, opportunities aimed at fostering community. The first iteration of the online resources used a mixture of new and existing content, which was hosted on a novel platform, housed in the University virtual learning environment, as a coherent and comprehensive resource. Students could use this to find important information to help them start their new program or transition to a new level of study. An intended strength of the resource was that students could revisit throughout the academic year as different parts became more relevant for their present stage of study.

Consequently, in the project the resource was divided into two main sections: one (that we called ‘Arriving and Joining’) aimed at supporting students’ orientation, the other (called ‘Developing and Planning’) intended for their longer-term transition. Summaries and checklists were included to help students navigate the resource and keep a record of content with which they had previously engaged. This model was followed for three versions of the resource targeted at different student cohorts: those joining the University for the first time, those returning to a new level of study (but in a radically different context) and students starting a taught postgraduate program.

As soon as the resource and the wider approach were shared, the WIT team began to receive, and indeed elicit, feedback. Thus began a process of continuous evaluation, as captured in a formal report (Mearman et al., 2021).

In terms of quality, the first iteration of the resources was seen as 'good' by 61% of students who responded to a regular digital experience survey (Mearman et al., 2021). Subsequent focus group data suggested students tended to find the resources useful as a single place for information helpful to them navigate their new context; however, students also found the number of communications they received from different parts of the University in the run up to their arrival overwhelming.

Usage data indicated which aspects of the resources were used more than others. Many students did not explore the resources fully, missing the Developing and Planning section content. This suggests that students may have found the material most useful on arrival rather than as a year-long resource. Another explanation might lie in the way they were supported to use the resource, or encouraged to return to it, by staff, hereafter used to capture both academics and professionals. In year one (2020-21), few staff had a good understanding of what was available to students or how to access it, and it was not integrated into school-level induction materials. Either way, this feedback led to changes in approach by the WIT team for the second iteration. Further, an analysis of the time students spent on pages showed peaks that that fell into two broad categories: first, need-to-know information such as how to access the University Wi-Fi and second, student-created content. Again, this led to the WIT team prioritizing this kind of material thereafter.

Like students, staff were largely positive about the intentions of the WIT transformation, highlighting that the resource was designed to deliver guidance to students throughout the year, and create a temporal framework for all with WIT-related responsibilities. Nonetheless, some found a centralized approach restrictive, feeling schools should have been allowed to plan their own induction. These feelings were exacerbated by the resources arriving later in the planning cycle than they had hoped, leaving them uncertain what to provide. Overall, the two key opportunities for improvements to the WIT offer were thus identified, which underpinned the next phase of changes. Namely, the format of the online resources and the communications to staff and students from the central WIT team.

In the second iteration of WIT, online resources were divided into two platforms. First, the need-to-know information was hosted in the portfolio-creation software PebblePad, which was also chosen as the main university platform supporting academic personal tutoring. Second, the nice-to-know information with a focus on student-created content was curated on a publicly accessible blog site linked to a dedicated University website.

Two measures addressed the communication issues. First, more, and earlier, staff-facing communications, in the form of a digital newsletter, explained the aims, purpose and outputs of the WIT project so that staff could explore the content of the resources. These staff communications also provided best-practice guidance for WIT and explained how the institution-wide resources complemented school-level induction practice. Second, a set of email templates were distributed, addressing the student feedback regarding the volume of communications. The templates comprised four sequential emails to be sent to students weekly ahead of the new academic year (2021-22). Pre-populated with institution-level messages directing students to the WIT resources and other university-wide support services, the messages also had spaces for school- and program-level information to be added locally thereby reducing the number of communications students received.

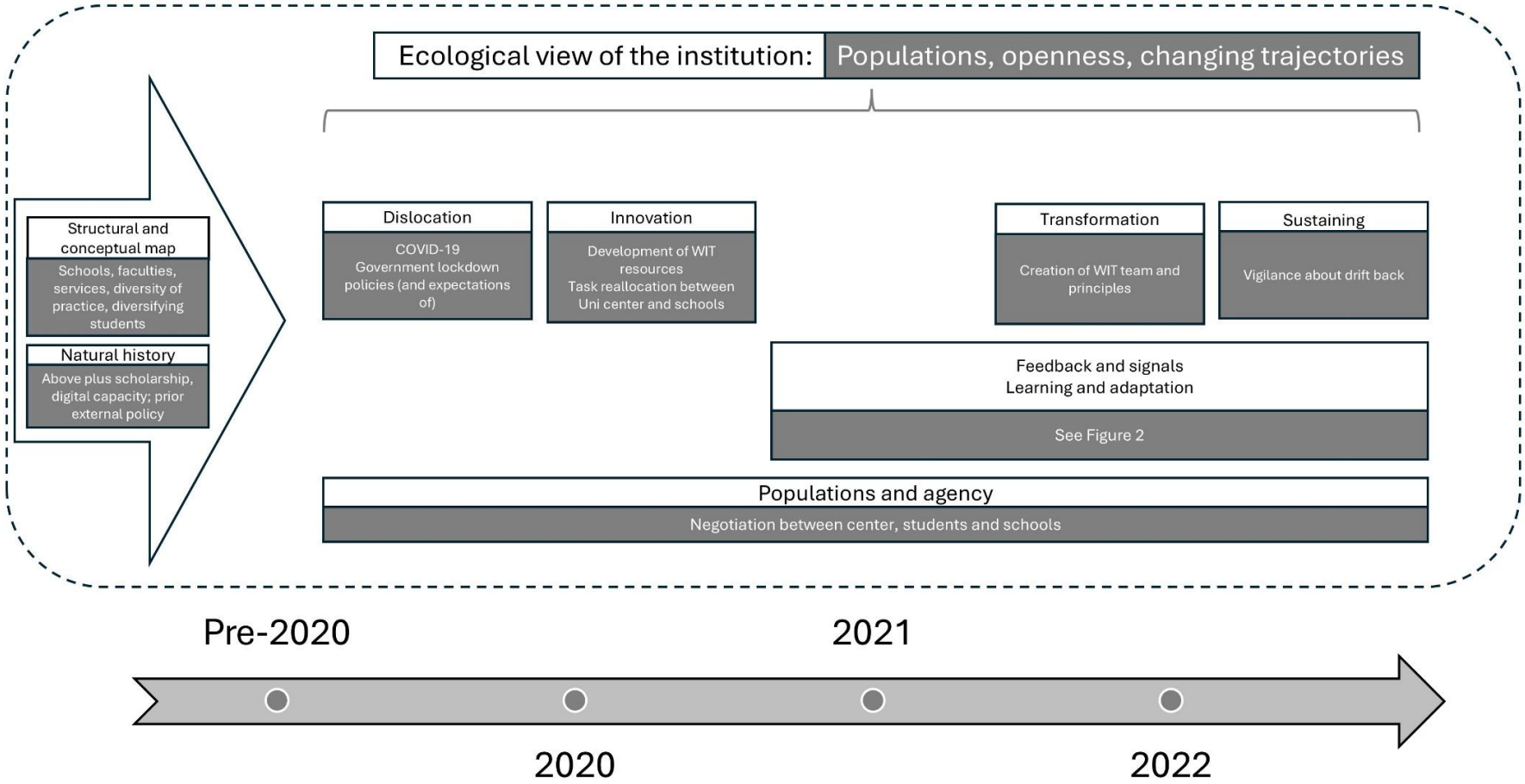
Data from internet analytics and focus groups suggested that students appreciated the new content but found the number of platforms hosting different kinds of information confusing. Similarly, staff reported that the introduction of the PebblePad resource to be too rushed, with staff and students encountering difficulties getting past log-ins. However, the overall ethos of the new materials, with more student-created content, was recognized as useful and effective.

Eventually, the University Executive decided to shift from WIT as a project to 'business as usual'. In May 2022, a new team of professionals with responsibility for WIT-related activity was appointed ensuring that related activities are sufficiently resourced. Within this, key steps have been taken to embed transition into the University as a process that should be attended to throughout the first year. This model contrasts strongly with what has, in the UK, been the traditional model – orientation condensed into a single week (so-called 'Welcome Week' or 'Freshers Week') (Mearman and Payne, 2021).

Understanding and learning from the case

To understand how change has happened and what was sustained in this case, we apply the themes of co-evolution outlined in Table 1. In Figure 1, we present a timeline of our case, in which Table 1's abstract concepts (in shaded boxes) are accompanied (in unshaded boxes) by concrete examples of each concept from the case. All these aspects sit within the context of the university system, the notional boundary of which is shown by the line around the figure's edge. That line is discontinuous, capturing the system's openness to external mechanisms, such as government policy and the COVID-19 pandemic itself; and, to a lesser extent, it expresses how the system might have external impacts, for instance via lobbying of Government by universities, or effects on the local economy.

Figure 1: A co-evolutionary timeline of our case



We start with the wider context of the university, describing it as an ecosystem with a natural history that helps situate our case, including understanding of structure and the pre-existing activities and infrastructure that shaped some of the decisions and processes of embedding. In Figure 1, the structural and conceptual map and natural history are shown at the start of the timeline, capturing that these were pre-conditions for the subsequent change; however, as discussed below, both these aspects evolve throughout the process, i.e., they persist over the entire timeline, and they change. Moving through the diagram, left to right, we then consider how COVID-19 acted as a dislocation, catalyzing us to reconsider how certain activities were delivered, leading to an innovation, a new approach to WIT that created a new team and networks, which interacted with professional departments and academic schools across the university as well as students. These groups are conceived of as populations within the system that have agency, being able to ignore, adopt wholly or partially the innovation, or indeed use it in unanticipated ways. It was important for the core WIT team to listen to and learn from this feedback and further adapt the innovation to ensure that it met the needs of the population, refining to help sustain the innovation ensuring it had mutual benefits. As we show in our discussion of the components of co-evolution below, the recursive approach and learning from the user populations, and then transforming the initial innovation, were key to sustaining it and delivering ongoing benefits.

Conceptual and structural map of the university

The ecological view of the university is the starting point for applying co-evolution. From this perspective, the university is an ecosystem with varied populations operating at different levels. A structural map helps one conceptualize the populations and how they are layered, which is likely to differ between university contexts. However, map users must be careful to grasp the nuances underlying it. As a social system, the university is more than a collection of physical structures, being imbued with ideas, knowledge and stories within the organization which form a ‘knowledge base’.

Our case sits in the context of a large, research-intensive university with numerous, loosely coupled (Kezar et al., 2025), semi-autonomous schools, all with agency and local cultures, who may respond differently to centrally driven change. Indeed, pre-existing university structural changes had created distributed but also disconnected agency within and by elements of its structures – where structures also include norms and expectations of academics,

professionals, and students. Collectively, this conceptualization reinforces that in universities, even those on apparently stable trajectories, context and the variability of agents within that create an inherent dynamic uncertainty. Some aspects of pre-existing structure will persist and prevail over others. To grasp all this, it is also important to develop an understanding of the organization's 'natural history' (Kinchin, 2023).

Natural history

The idea of natural history recognizes that how change happens is affected by what has happened before, in that it creates conditions for possible trajectories without determining outcomes. In our case, three main areas of work form inter-connected aspects of the natural history that shaped the principles underlying WIT, facilitated implementation but also affected how WIT was received. These were actions to diversify the cohort; previous work on welcome, induction and transition; and investment in digital technology.

On the first, recognizing the homogeneity of the student population, the University's Access and Student Success Strategy has sought to diversify its cohort, recruiting more students from under-represented groups, including those whose post-compulsory education was vocational. Relatedly, the University had encouraged the development of a corpus of work on sense of belonging and inclusive learning and teaching, including skills-oriented induction resources, driven partly by the regulatory demands of the UK Teaching Excellence Framework and its analysis of outcomes by student category, specifically focusing on students in lower socio-economic groups identified by home neighborhood.

Second, the University had established a department (Leeds Institute for Teaching Excellence, LITE) that supports staff to undertake research related to student education, including scholarship on WIT. Developing earlier work on taught postgraduate transition, the ELIXIR project audited provision of undergraduate WIT. ELIXIR identified pockets of good practice in various schools across the University, but this was rarely shared, highlighting a lack of a strategic or cross-institutional approach, as well as schools' own power and agency, which suggested scope for improved partnership working between staff and the articulation of student voice as well as agreeing underpinning principles. WIT provision was also hampered by professional staff turnover and by WIT being given a low priority, including in workload allocations, with academic reward and recognition processes weighted towards research success. WIT was largely viewed as a week at the beginning of the year, during which all relevant

information could be transmitted and all challenges of transition into university addressed rather than as an extended process. Significantly, LITE also funded the initial evaluation of the first year of the WIT project by providing time for Authors A and B to conduct this work.

Third, the University had since 2013-14 undertaken significant investment in both on-campus digital teaching resources (e.g., lecture capture) and an expanded distance learning offer. This investment meant that before the pandemic there existed already an initiative to create communities of practice for educators and capability with online collaboration tools, and discussion fora meaning that there was an emerging framework to take peer-to-peer conversations across the institution online.

As shown in both figures 1 and 3, a dislocation occurred, something that creates an imbalance in the system, an external trigger that is catalytic, instigating the change. The COVID-19 pandemic and mandated restrictions on social interaction clearly meant that normal delivery of teaching and learning was impossible in autumn 2020. COVID-19 thus provided the disturbance or 'release' of Holling's adaptive cycle (2001).

Populations (with agency)

As noted earlier, the University has over 40 schools, with varying practices for WIT. Also, at the time of the study, several central professional services were involved directly in diverse activities relating to WIT. These included recruitment and registration (Marketing and Admissions); and others related to everyday life, including residences and catering; yet more related to well-being, for instance teams working on Student Support, and those focused on Student Success and Opportunity. Additionally, several teams with varying structures work on WIT at school level comprising professional service colleagues and academics, some of whom hold a dedicated role on WIT and work alongside others delivering academic programs including academic personal tutors who hold an individual guidance and sign-posting role.

A key development in the case was the creation of the WIT Network with a membership of colleagues in diverse roles across the University. WIT became 'everybody's business', a key tenet of Kift et al.'s (2010) transition pedagogy, a framework that can be used to inform the development of transition support in higher education. This was useful for creating a population of staff focused on this activity, and it was instrumental in enabling feedback to be elicited and funneled for use by the core WIT Leadership Team. This helped ensure that there was learning

from this and other feedback, which is another key element of co-evolution, as we discuss below.

In our co-evolutionary analysis of change in a large university context we identified three populations: professionals and academics in academic units; students; and the team leading the project interacting between the other two and, ideally, learning from the process. It is important to recognize the agency of the populations – schools have a high level of autonomy from the University's 'center'. Similarly, some specialist teams that had well-established WIT plans and processes pre-pandemic wished to continue to offer provision in line with previous years thereby maintaining their professional niche rather than aligning with an institution-wide approach. The reluctance of some staff to align with the organization-wide approach to WIT might, in part, be explained by some problems with communications between the WIT Team and staff delivering WIT provision in schools. Naturally, too, students can choose whether to engage with processes, especially those not linked to their registration status or where their relevance to their learning and well-being is not immediately obvious.

Thus, in a university ecosystem, information flows in multiple directions populations, both from the instigators of the change, and from agents in other units, which is then gathered and translated by the change team, potentially then re-packaged and re-distributed. The innovation is unlikely to be adopted uniformly but adapted partly reflecting prior practice. This might be seen as practical adaptation or, potentially, resistance.

Feedback and signals

Key to understanding the interaction between the populations is tracing the instances of feedback between them, identifying which signals are picked up by the actors in the different populations and are then acted upon. In Figure 2 we have mapped the interactions between populations in our case, and how they contributed to feedback, and signals that helped generate a process of learning and adaptation.

Figure 2: Populations, feedback and signals

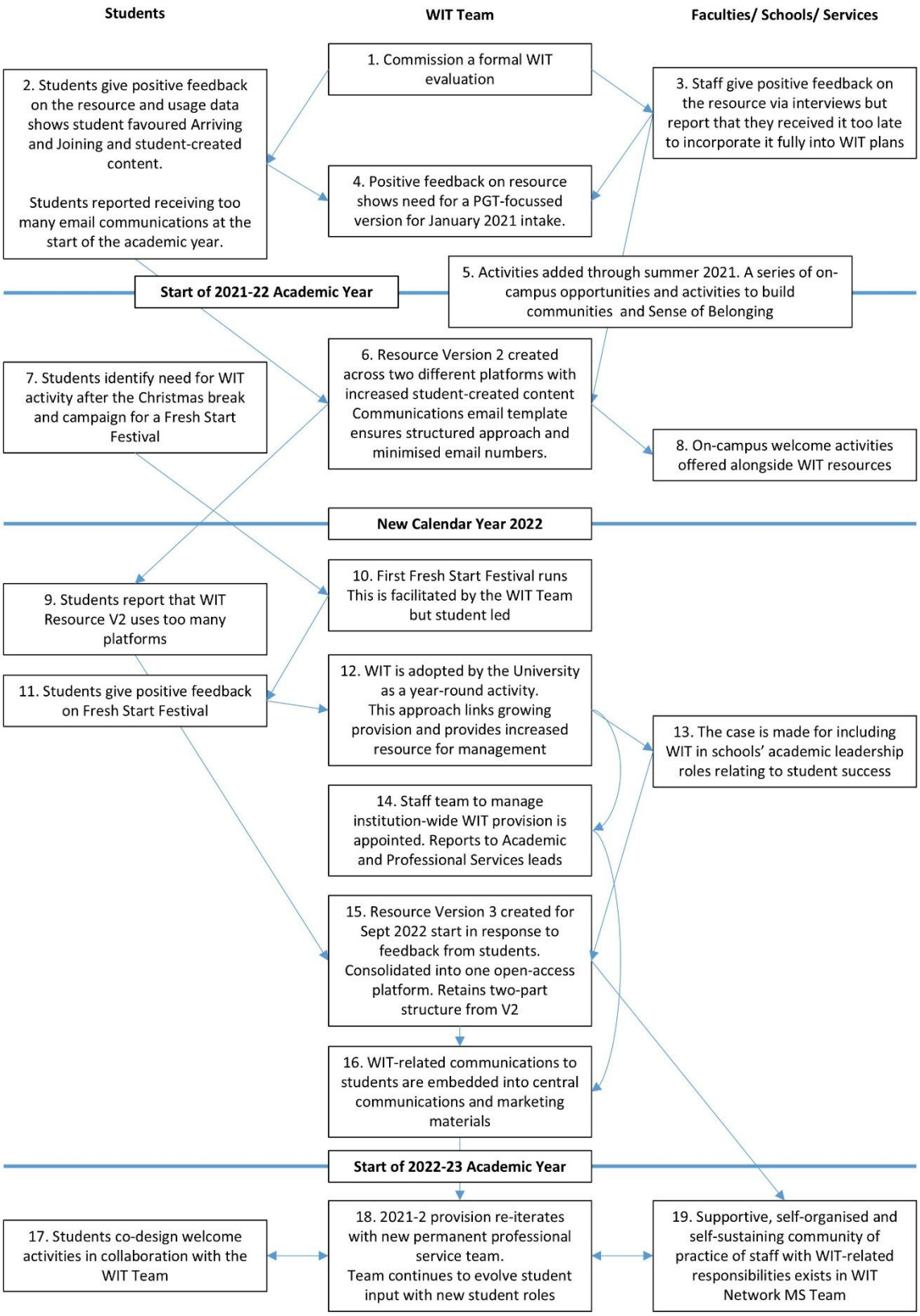


Figure 2 envisages the WIT team, students and staff as three populations within the systems of the University and the external policy context. The boxes illustrate actions by, or messages from, the actors within the three populations and responses from the WIT team. So, for example, in Box 2 on the left-hand side of Figure 2 we summarize the student feedback from the evaluation of our initial (2020-21) provision, particularly with respect to the volume and nature of communications. Similarly, Box 3 summarizes staff responses regarding timeliness of resource development and requests for more guidance. We then in Boxes 4, 5 and 6 show how this feedback was acted upon in the second iteration (2021-22), including changes in messaging and provision of activities to complement Version 2 of the online resources. The feedback from students about the number of platforms (Box 9) demonstrates that learning is an uneven process, in that the changed provision responded to in Box 9 was in fact a response to earlier negative feedback about the volume of communication received (Box 2).

The feedback led to the simplification of platforms that were open access (Box 15). On the other hand, the enthusiasm generated around the Fresh Start Festival (Box 11) and summer activities (Box 5), both of which were repeated in summer of 2022, brought the energy of welcome into year-round activities to generate a sense of place and belonging (Box 12). This inspired the creation of a new central University WIT Team (Box 14), that was better connected to ongoing communications (Box 16) but also with new resources and visibility. As Hamlin et al., (2024) discusses, an essential element of this new team's work is collaboration and partnerships, student voice manifest in the co-creation of WIT resources and events and their evaluation, a "peer-to-peer approach to which students respond well" (Hamlin et al., 2024, p.3). This aspect is captured in Boxes 17 and 18, the seeds of which can be found in Boxes 2, 5, 7, 9 and 16.

The identification of the key events, messages and responses helps us consider how a new technology (the online WIT resources) and processes evolve through use, feedback and context changes though a process of learning and adaptation to generate mutual benefits.

Learning and adaption

A co-evolutionary approach to change has a focus on learning – as a key element of adaptation – and potentially transformative change. It is not just about listening to feedback. Rather, the focus on learning there brings a sense that when variations (innovations) are introduced and shared, some aspects are retained by populations (agents), others are rejected. Rethinking how

things are done to improve upon an earlier iteration is one of the hallmarks of co-evolution. Indeed, a key difference between evolution and co-evolution is the idea of reciprocity, which means that change is experienced by all actors in the system, including those introducing the original innovation.

Our case gives numerous examples of how both the resource and its platform were re-thought each year based on explicit feedback and use data. So, for example, the immediate response to the feedback was the creation of a replica resource focused on the taught postgraduate (Masters) students arriving later (January 2021) in the academic year, with more interactive content. Additionally, the WIT Team provided more guidance to staff on how schools might complement the resource, focusing on community building. In year 2, experimentation with a reflective learning platform (PebblePad) was rejected in favor of more accessible resources and more focus on activities to generate a sense of belonging. Later, feedback led to the planning of on-campus activities for students over the summer, particularly outdoors as permitted by COVID-19 regulations, highlighting that WIT must support transition between years of study as much as creating a welcome at day one. These community-building activities provided foundations for centrally organized activities to welcome students or templates for school-organized events (e.g., treasure hunts, quizzes).

Transformation

In our case, what began as a technically focused response to the COVID-19 pandemic through the creation of an institutional online resource transformed into a network of people at different levels of the University led by a dedicated professional services team, with resources approved at executive level to support a year-round approach as part of 'business as usual', with WIT recognized as a collective endeavor. Through a co-evolution lens, this process can be seen as non-linear, emergent change, as different parts of the approach to WIT changed at different times and that is recursive, as elements adapted in response to user feedback, adoption or non-adoption. In our analysis, the transformation of the initial innovation to something qualitatively different in response to this process of learning and adaptation helped sustain the change, as an example of double-loop learning (Stagl, 2007).

Thus, within Figure 1, the transformation box is the crucial decision point in the ongoing circular process of change. It is this point that leads to a new normal, whereby the change process moves forward rather than 'slipping' and taking the system back to the start, and with change

not being sustained. Importantly, the transformation stage underlines the importance of continued learning and responding to feedback from the populations within the system.

Sustaining

The challenge, then, is sustaining the change, whereby new ways of working become the accepted norm. In our example, some aspects of the new WIT ways working became accepted norms, especially the year-round approach that chimed well with thinking and practice around 'sense of belonging', which was a central theme of the Access and Student Success Strategy and due to the well-resourced central team, which included student members.

Nevertheless, orientation activity still is not embedded consistently into academic workloads, and connections to school-level academic activity could be strengthened. Reinforcement of messages and appropriate supportive infrastructure and leadership are needed to sustain the energy that delivers a welcoming environment for our students. Systemic shifts in thinking and cross-institutional learning are required to ensure that the changes in approach are recognized in educational policy and practice and the paradigm that underpins the overall institutional culture and approach.

Discussion: making the change stick

Having examined our case through the lens of co-evolution, we now seek to capture our learning in a more conceptual sense to identify insights that others might find useful for understanding how change works and might be supported to 'stick' in their institutions.

In terms of understanding change, two strands of insights are available. One is for those seeking to interpret a set of past changes – i.e., either those, like us, engaging in a reflexive evaluation, or those studying a case as external observers. Arguably, co-evolution, with its depth and richness helps with the understanding of how change happens in a complex, multi-tiered, multi-dimensional and context-dependent organization like a university, rather than aiding the detailed planning of an initiative. Nonetheless, the second group who might benefit from adopting a co-evolutionary lens is those engaged in change.

Let us consider initially the first group, the analysts, or interpreters. First, co-evolution is an extension of the ecological model of the university, bringing more insight into the recursive

nature of change and processes of learning and adaptation for sustaining change. Applying co-evolution to a change process in a higher education context helps us to understand the processes of embedding change, which are recursive and involve a complex interface between structure and agency within the system. So, whilst tracing the co-evolutionary process focuses on the decisions and responses of actors, it is also important to recognize that they are acting within a complex, multi-tiered structure with units that are 'loosely coupled'. Likewise, is the recognition that the university exists within a wider social and policy landscape, subject to rules and regulations that might shift. Particularly important in the context of our transformation were government policies related to higher education and the control of COVID-19 during the pandemic. Indeed, at the start of the 2020-21 academic year, the UK government encouraged universities to offer some in-person provision, a message that was articulated even more strongly in academic year 2021-22, despite the persistence of the virus.

It should be clear that both the agents and structures embody tacit cultural norms, values, and knowledge, and that any change must navigate these. Sometimes these aspects of culture will enable the change, but at other times they will act as a blocker. These blockers may not always or completely stop the change, but they may slow it or adopt it selectively; hence some changes will be fast, but others slow. Here, understanding the natural history of the institution becomes crucial, because agents will often hark back to past or well-established practices. Where a dislocation is sufficiently powerful, they may be forced to abandon these priors, adopt new practices and build new structures and cultural norms; however, the pre-existing norms may act as attractors, towards which agents will gravitate back once the initial urgency has abated.

A further analytical implication of co-evolution is that changes (and their sites) need to be understood in terms of underlying driving mechanisms, which can reside at different layers of the system from their effects. For instance, in our case, mechanisms operating within the whole system (i.e., the entire socio-economy) were setting in train processes, creating impetuses at the levels of the macro (institutional), meso (sub-institutional), and of individual agents. Processes of adaptation are thus responses at lower levels to higher-level mechanisms; however, these processes were not uniform and entailed acts of passive acceptance or sometimes resistance as well as more enthusiastic variants. How agents responded was partly a reflection of a collection of natural histories, including their own. Relevant here is the desire by agents to maintain professional niches, as a source of agency but also its expression.

These actions created feedback that affected higher levels; thus, the researcher seeking to understand the change in the system needs to grasp the interplay of these (asymmetrically) reciprocal mechanisms. They also must explore all these levels, using a zoom lens, allowing them to perform effective abstractions, i.e., understand the level on which they are currently focused but without forgetting the other levels either around or within them.

The above implications are relevant to agents seeking to bring about change. An additional key implication of co-evolution for them is that change is not about leaders of the change imposing one way forward but recognizing that these ideas would be adapted in different ways, at different levels. Rather than creating a detailed plan, in co-evolving systems, leaders accept the limits of their control and instead create structures and processes that facilitate the development of shared underlying principles, and more importantly, an organizational learning culture, in which the emphasis is on listening to feedback and adaptation to it. A first step here is to recognize all the relevant populations and create mechanisms for gathering their feedback and communicating responses back to them. Also important is that leaders understand that some actions undertaken by agents, though appearing to be ones of resistance, may be associated with the need of a discipline or program of study that were under-appreciated by those leading the innovation.

Figure 3: A co-evolutionary framework for understanding change in Higher Education

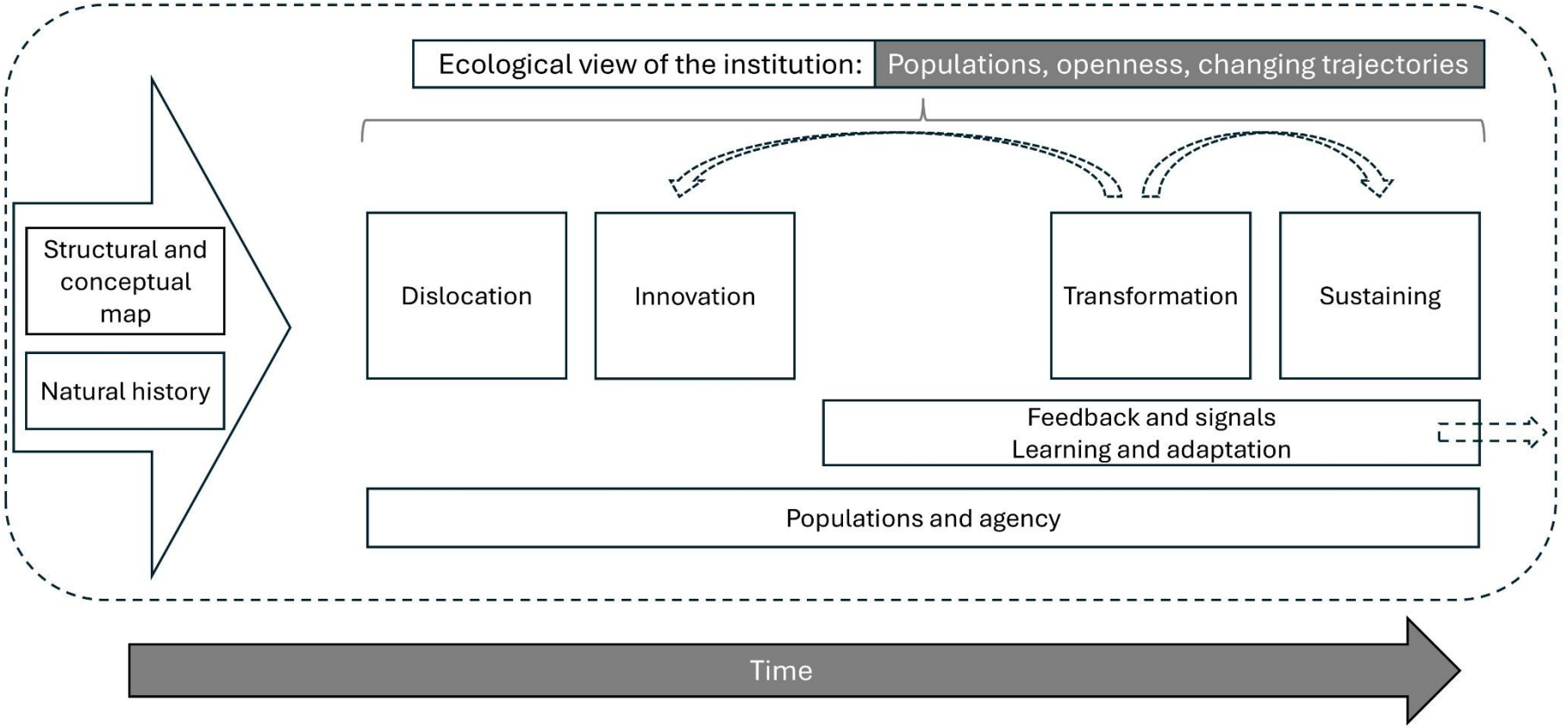


Figure 3, an abstracted version of Figure 1 from which the examples are removed, captures the learning and conceptual development discussed above. Figure 3 clarifies that natural history is generated across the entire timeline. For simplicity, not captured in the diagram is that the structural and conceptual landscape of the institution is also continually changing; however, whether it is mapped as such is contingent on someone doing that. Further, transformation is presented as a bifurcation point, from which either the innovation is sustained, becoming semi-permanent, or organizational drift occurs, taking it back towards old structures, actions and cultures. Whether the organization does make the change stick will depend on what further dislocations occur and on how well the above elements have been developed and embraced by leaders and other agents, where innovations are not seen as temporary fixes to build resilience in the face of a specific (exogenous) challenge, but have involved processes of adaptive learning to generate new understanding and adoption of the innovation in a sustained way. A key to making this sustainable is appropriate resourcing and continued adaptation.

Our case and introduction of co-evolution to the menu of change approaches in higher education can help in understanding how innovations can be sustained. It builds on emergent approaches to change, particularly evolutionary perspectives, bringing in a multi-level focus and enabling a zoom into the way different populations within the system act with agency shape the way in which an innovation is adopted and embedded, or which aspects. It provides more detail on potential mechanisms in what Kinchin (2023, following Holling, 2001) calls the growth and conservation phases of change.

Whilst this provides more insights into agency than other emergent or system-based approaches, we recognize that there is potential for more consideration of power dynamics and insights into the agency – potentially by bringing in more explicitly the voices of agents and recognition of the role of resources and different forms of authority and legitimacy in the process, including hidden power. Our analysis and theorization are based on observed impacts, and survey data; studies like this could usefully be complemented by more discursive approaches in terms of both data collection and analysis.

Making your change stick

Our purpose in this paper was to elaborate the application of co-evolutionary thinking – an approach developed in socio-ecological and socio-technical systems – to a higher education context, via a reflexive account of a process of change of orientation provision at a UK university. The paper has shown how that application of co-evolution helps us to understand the processes of embedding the change, to see what is sustained. Rooted in an ecological view of the university, and building on insights from evolution by focusing on interplay between the different units and levels within the organization, co-evolution focuses on a process of learning and adaptation, which is recursive and involves a complex interface between structure and agency within the system. This lens helps think through processes of adaptation following a disruption and highlights that innovation may involve elements of transformation. Indeed, it is this process of transformation, by which there may be changes to the institution itself, highlighting the importance of double-loop learning. In our case, what began as a project to bring welcome and induction online transformed into a new approach to welcoming students and supporting them in building up a sense of belonging. Keeping this momentum of learning will be key to sustaining this change into the future.

Co-evolution aligns well with emergent approaches to planning change such as design thinking, offering a system-level lens to consider the system within which innovations are generated. Adding such a systems lens helps to unpick the dynamism of emergent change, and to understand the effect of interactions between populations. Our analysis has explored the role of different forms of communication, peer-to-peer networks and school level engagements, to central, formal top-down communications, all of which can be difficult to get right in a university context, and thus can sometimes create confusion for students.

Whilst some theories of organizational change aid in understanding the instigation and early phases of change, and others help in understanding individual behaviors or cultural responses, our elaboration of a co-evolution framework, visualized in Figure 3, helps to identify what happens next in a process that involves a complex interface between structure and agency within the system. That is, this addition to approaches to understanding change in a higher education institution assists us in identifying and elaborating later stages in the change process.

Specifically, we have applied this framing to an intentional change rather than exploring patterns in a system more generally, and have added a focus on the sustainability of change. This focuses attention to the points at which feedback from stakeholders is listened to and acted upon and how reciprocal learning needs to continue if the innovation is to be sustained, and if actors in the system are not to revert to previous activities. This requires continuous engagement, reflection and innovation. Recognizing that both those at the receiving end of new innovations and the innovators themselves change and adapt and understanding the nature of these adaptations might help in getting some changes to 'stick'.

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