Theory disputes and the development of the technology enhanced learning research field

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Abstract

This paper contributes to ongoing debates about theory application in technology enhanced learning (TEL) research. Such debates routinely highlight that the use of theory in the TEL field is problematic, and suggest that the issue is of fundamental importance to the development of the field. Yet different accounts within these debates are oriented towards ostensibly disparate issues and often, in themselves, have a somewhat fragmentary nature. This paper, therefore, seeks to synthesise and systematise a wide range of the arguments that are evident in the literature. A preliminary analysis highlights that the debates are occurring against a particular backdrop: a desire to newly re-constitute TEL as a *bona fide* scholarly discipline.

Four key points of dispute are subsequently identified, which, it is argued, should understood against that backdrop. Those key points of dispute, whose analysis constitutes the core of the paper, are concerned, respectively with the continued implications of a theoretical 'canon' whose pre-eminence in the field is long-established; the problematic relations between the field's 'empirical' and 'theoretical' discourses, which are positioned as often occurring in parallel; a need to better recognise the varied functions that different theories might play, whether in research projects or across larger research agendas; and the extent to which the TEL field should be theoretically aligned with other academic fields of enquiry or seek to position itself

as, in some way, 'exceptional'. Those four points of dispute are each disaggregated, within the analysis, into a range of distinct stances, and the relations between the stances and the points of dispute themselves are discussed. The paper concludes by considering the implications of the analysis, both for those TEL researchers wishing to engage with theory, and those scholars for whom theory application in the field is a distinct research object.

1. Introduction

The present paper contributes to an ongoing scholarly debate about theory application in technology enhanced learning research (e.g., Bulfin, Henderson & Johnson, 2013; Antonenko, 2015; Jameson, 2019; West, Ertmer & McKenney, 2020). That issue deserves further consideration because the use of theory across much of the technology enhanced learning field remains much criticised—in my view deservedly—despite the existence, over some time, of a strident strand of scholarship advocating the importance of more extensive theoretical engagement (e.g., Issroff & Scanlon, 2002; de Laat & Lally, 2004; Bennett & Oliver, 2011; Jones & Czerniewicz, 2011; Crook & Sutherland, 2017; Hew et al., 2019).

The departure points for the present paper are:

1. a contention that scholarship advocating for better theory application in technology enhanced learning (whatever 'better' is taken to mean) is somewhat fragmented, notwithstanding the existence of several journal special issues devoted to the topic[1], and

2. a feeling—substantiated, as elaborated below, by previous research (e.g., West, 2016; Hew et al., 2019)—that the use of theory in the field's empirical work is developing at a regrettably slow pace.

Indeed, those two departure points might well be related: with the format of theoretical discussion hampering its influence on those researchers who assume their research priorities have a purely empirical focus.

My response, in this paper, involves scrutinising the scholarship on theory application in technology enhanced learning research, and attempting to synthesise and systematise those debates that are occurring. I do not wish

to exaggerate the potential for such a synthesis to effect change in the field overnight; there are, as discussed below, many reasons for poor theoretical engagement *other* than fragmentary discussion of the issue. Yet there are compelling reasons to think that putting forward a paper of this kind might, over time, contribute not only to scholarly discussion, but also to research practice in the field. On the one hand, it is worth noting that, among researchers who work on technology enhanced learning, those who *attempt* to make deliberate use of theory in their work are disproportionately "in non-promoted positions and early stages of their careers" (Bulfin, Henderson & Johnson, 2013, p. 338). Yet, conversely, it is a commonplace observation that actually *using* theory poses very considerable difficulties, with those difficulties experienced most acutely by novice researchers (e.g., Antonenko, 2015, pp. 53-54). It is reasonably common, when discussing theory in the field, to highlight a need for more theoretical grounding to be provided in training and development programmes (e.g., Drumm, 2019, p. 4; Hew et al., 2019, pp. 967-968). The intended outcomes of doing so, presumably, would include nurturing the latent enthusiasm of 'novice researchers' about theoretical issues, and then helping them overcome the more common difficulties they experience in applying theories in their own work.

Against this backdrop, I suggest that a paper like the one I present here might be of interest to two core audiences. Firstly, there is a potential audience among those scholars interested in the topic of theory in technology enhanced learning research. The fact that, below, I survey a range of published papers that discuss that issue suggests, in itself, that a number of researchers in the field wish to produce and develop a body of knowledge on the topic. Such scholars might benefit from a new synthesis: one that renders differences between different contributions more explicit, and positions those differences within wider discussions about the development of the field. Secondly, there is also a potential audience among those relatively inexperienced researchers who, as mentioned above, do wish to use theory to investigate phenomena associated with technology enhanced learning but find doing so difficult. Conceivably, a synthesis of the kind I strive to provide below—accessible but not oversimplified, emphasising a few core issues but not implying tidy consensus—might provide such developing researchers with a useful resource for reflecting on how they might approach the thorny issue of theory application. Plausibly, the paper might also serve as a useful artefact within training and development programmes—where it might be used, in line with what is being advocated in the literature, to draw attention to theoretical debates.

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[1] Those include a special issue of *Research in Learning Technology* in 2011, a special section in the *British Journal of Educational Technology* in 2019, and a special issue of *Educational Technology Research and Development* in 2020, as well as the present inaugural issue of *Studies in Technology Enhanced Learning*.

I elaborate my subsequent analysis in a way reminiscent of Andrews' (2010) observation that mapping academic debates necessitates appreciating, in turn, both the broader 'territory' that bounds a given discussion and the 'points of dispute' within it. I thus structure my exposition into two broad phases.

The first, which sketches the territory, addresses that range of analyses that document (and suggest reasons for) a drastically attenuated use of theory in technology enhanced learning research, as well as those papers putting forward arguments for better theory application in future. While, *prima facie*, the issues covered might appear disparate, I shall argue that there is a common thread: a desire to escape the field's historically constituted identity as a quasi-academic service industry, and to use theory as a vehicle for re-constituting it, instead, as a *bona fide* field of academic scholarship.

The second broad topic emphasises a set of more granular, yet recurrent, issues: ones, importantly, where authors advocate discernibly different positions. In keeping, once again, with Andrews' schema, these are presented as points of dispute, notwithstanding that their exposition in the underlying papers, with few exceptions, is framed in ways that avoid direct altercation. I identify and examine four core disputes: issues discussed by multiple authors who adopt different positions. These, in turn, are *canon disputes*, concerning the scale and historicity of what are taken as 'theories' in the field; *interchange disputes*, which problematise relationships between theoretical and empirical discourses; *functions disputes*, where different roles that theory might play in the future are advocated (and theoretical forms are sometimes disaggregated in relation to those roles); and *exceptionalism disputes*, over the extent to which the field should borrow concepts from elsewhere or develop its own "theories of technology enhanced learning". Each of these disputes is a crucial issue which, I suggest, we—researchers, research groups, scholarly communities, the field as a whole—need to grapple with, if those stated aspirations about re-constituting technology enhanced learning as a scholarly research endeavour, examined in the preceding phase of argument, are to have any hope of being realised.

I conclude the paper by briefly discussing some moments of commonality and difference between the four points of dispute. Throughout my exposition of those commonalities and differences, I shall reprise my account of how the state of the field (the "territory" of the argument, as described in section 3) is represented in this body of knowledge, and consider the implications of my analysis for its further development. I also provide some reflective comments, whose aim is to draw out some of the ramifications of my analysis, for researchers who wish to engage more extensively with theory. The latter narrative perhaps most directly addresses the potential readership I invoked above as 'developing researchers', while the former is aimed more equally at both that audience and those scholars already interested in theory advocacy within the field.

Before presenting the analysis, however, it is first necessary to reflect on how it was produced, and how those methods of production relate to my particular reasons for writing the paper.

2. Methodological considerations

The present paper is a narrative literature review; it attempts, as discussed more extensively by Hartley (2008), to "integrate and synthesise work" and to "plot the development of a line of reasoning" (p. 87).

I have long found Hartley's (2008) account useful: because it encourages a way of thinking about literature reviews that places the attendant practices along a spectrum, rather than into rigid categories. Furthermore, rather than abstractly placing types of literature review into normative hierarchies (where, for example, 'systematic reviews' might be positioned as the most 'rigorous'), Hartley also encourages academic writers to think their underlying *purposes*, and how conducting and presenting a literature review relates to those purposes (pp. 87-91).

I have already set out, above, that one important goal for writing the present paper was to synthesise and systematise those debates occurring in scholarship about theory application in technology enhanced learning research. That goal emerged, over time, as a consequence of my struggle to grapple with such debates when attempting to pursue another line of work[2]. Given that the present paper might,

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2 I had originally planned to write a paper for the present special issue arguing that *activity theory* could make a distinct contribution to the emerging technology enhanced learning research field, at a 'research agenda' level of generality. Yet, in struggling to do so, I came to believe that the underlying terrain of debates about the position of theory in the field had been insufficiently mapped; that absence, in turn, seemed to constrain the potency of the argument I was constructing, which sought to build on those debates. This 'argumentational struggle' is the proximate origin of the first of the two departure points stated at the outset of the paper (namely, that the scholarship in this area has a fragmentary quality). At the time of writing, the original piece remains half-finished; my intention is to contribute it to a future

as mentioned above, be used as an artefact within training and development courses, and given my experience that the readings set in such courses can sometimes influence students there in unintended ways, I wish to place a special emphasis, in the present section, on the fact that my research design was strongly oriented towards that particular goal.

My search strategy, for the present work, was organic and iterative; I started by reading key papers and then 'snowballed' outwards from those readings. I was already familiar with several previous works that discussed the 'theory' issue. Those included a seminal article by Bennett and Oliver (2011), which—though it usually seems best remembered for its castigation of a generalised lack of theoretical engagement—in substantive terms, sets out three case studies of how theory has been used in the field; three adjacent chapters within a monograph by Jones (2015), which emphasise the need to employ a wider range of theoretical underpinnings, so as to better appreciate the position of learning within a digitalised and rapidly changing society; and a chapter, in a primer on the field, by Crook and Sutherland (2017), which charts a range of tensions existing between, on the one hand, a desire to recognise and respect a greater diversity of theoretical frameworks and, on the other, a need to retain a principled understanding of human learning. My starting point was to re-visit those works, and then to scrutinise both the papers they cited and—via online means—those papers that later cited them. I also familiarised myself with a range of prior special issues on the topic (see, once again, the first footnote), and similarly 'snowballed' out from the initial papers I read there. In choosing to adopt this organic, iterative approach, I make no negative judgements about research designs that involve mechanised searching of databases and journal indices; indeed, I have made use of such strategies before (e.g., Luckin, Bligh, Manches, Ainsworth, Crook & Noss, 2012; Bligh & Flood, 2017). But, on this occasion, I used an organic approach because my priorities were to compare and synthesise a number of key arguments, rather than to examine the relative prominence of, or evidence for, particular viewpoints or assertions. Papers with the latter goals would necessarily deploy a different search method.

I also made a scoping decision that will have consequences for the remainder of the article; namely, I prioritised papers that describe or examine 'theory/ies' in the field in a relatively general sense. The corollary of that decision is that my subsequent analysis will downplay the contributions of those papers that discuss one particular theory. Once again, I do not wish to disparage work that emphasises definite theories, and indeed in my own prior work I have myself tended to discuss theory in more particular ways (e.g., Bligh & Flood, 2015; Bligh & Crook, 2017). However, my goal for the present paper was to systematise work that emphasised theory application, and the problems attendant on that application, as opposed to the partisanship and advocacy, whether more or less explicit, that usually accompanies discussion of particular theories.

Another scoping decision taken was that I would not, for the purposes of the present work, distinguish between the different terms used to describe the wider field of study. It is common, quite understandably, for novice researchers to be confused by the disparate nomenclature that confronts them in journals and conferences on ostensibly similar topics: educational technology, learning technology, e-learning, technology enhanced learning, digital education, networked learning, computer assisted learning, computer-supported collaborative learning, etc. Indeed, many established researchers persist in feeling some uncertainty about these distinctions; they may often, despite the many attempts by various devotees to construct and defend particular definitions, invoke mostly hazy and overlapping impressions. It is certainly important that readers understand that, rather than being mere synonyms, these terms have emerged historically within particular academic disciplines, geographical regions, policy contexts, and research funding landscapes; they thus come loaded with particular meanings, many of which are transparently problematic. One discussion of that issue that I find very useful, notwithstanding that I do not share its proud partisanship for the term 'networked learning', is provided by Jones (2015, pp. 3-12). Yet it is also important to realise that there are no eternal boundaries between these terms, with even advocates changing and updating their positions over time. In short, I felt that ruling papers out of scope on the grounds that they do not use a particular formulation to name their field would, for the purposes of the present review, be inappropriate. That decision was reinforced by the fact that, with the partial exception of the work by Jones (*ibid.*), none of the papers I reviewed emphasised the importance of their field terminology *for their argument about theory*. In the end, I chose to use the term technology enhanced learning, and the acronym 'TEL', below, as a general descriptor, despite the fact that the source materials I draw on often use different labels[3]. Conversely, I

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special issue of this same journal, already planned for the coming period, whose working title is *Activity theory in technology enhanced learning research*.

3 For the purposes of disclosure, and since I often field questions on this topic from PhD students, it may be worth admitting that I have never found a label for the field that I particularly like. I tend to use

wished to restrict my scope to the TEL field itself (howsoever named), and to avoid forms of mission creep that might lead me to reproduce more established arguments from the wider social sciences. That was especially important since it rapidly became obvious, during my reading, that the relationships between TEL and other scholarly fields was precisely one of the issues being problematised in the source material[4].

My analysis, as I alluded to briefly in the Introduction, focussed on drawing out points from the different papers in two very different ways. Inspired by the work of Andrews (2010), whose book examines the issue of academic argumentation, I strove to emphasise both the 'territory' that bounds the discussion of theory in technology enhanced learning research and the 'points of dispute' within it.

The first layer of my analysis, then, involved examining

"technology enhanced learning" reflexively, since it matches the term used in my current institutional environment, and also because I was previously involved in the EU STELLAR project which, as Jones notes, was committed to further developing the term. ("Technology Enhanced Learning" is a term which has, historically, been most associated with the European Union policy landscape). I do not myself subscribe to the notion that concepts should be understood by unpacking the dictionary definitions of any words that happen to be concatenated together in their label (i.e., for me, 'technology enhanced learning' ≠ 'technology' + 'enhanced' + 'learning'). Nonetheless, since I have seen the associated word games played several times, I'm happy to say that I have long preferred the term "education" to the narrower "learning", and that I agree that "enhanced" verges on being an empty signifier. My core commitment in any debate about preferred terms, however, is to avoid setting up a fundamental dichotomy between the use of digital and non-digital artefacts (and thus, in turn, to avoid a range of concomitant dichotomies, such as that between 'online' and 'offline' learning). The word "technology", as Jones discusses, can readily be understood by researchers to encompass both its apparently digital and non-digital variants, which for me is its most appealing advantage. For these reasons I am extremely sceptical about using the word "digital" in any field formulation.

4 It is also important because, as will be discussed below, TEL researchers across the globe are located, via employment and funding relationships, and by their professional histories, in a range of disciplinary 'homes', some of which (such as engineering, computer science and healthcare) do not ostensibly fall within the 'social sciences' as that term is usually understood. Many are also located in institutional service units ('Information Technology', 'Library Services', etc.), where they produce research papers either in their own time, or as the vagaries of their employment contracts allow. Those relationships between the international and disciplinary locations of the field (among others) have, I think, important implications that would be a worthy topic for future research.

the 'territory' of the discussion. A summary of that analysis is presented in section 3. Establishing that 'territory' is important because, as Andrews (2010) highlights, and as I anticipated above when discussing my scoping decisions, forms of argumentation are deeply entwined into particular bodies of knowledge. While there are certainly some relevant 'generic' issues concerning how academic argumentation is undertaken, contemporary scholarship on the topic also emphasises substantial disparity; disciplinary and cultural differences are typically taken as the most obvious variables, but in fact the variegation of academic argument is substantially more contingent than such reduced proxies might suggest. The important point, for present purposes, is that understanding an argument necessitates understanding what is taken to be the terrain within the argument itself, and establishing the wider objectives of those involved, rather than just cataloguing the directly evident points of dispute. Andrews (2010) discusses, for example, several instances of narrow analysis, concluding that "oversimplification of a problem can lead to superficial and unsatisfactory solutions" (p. 82). Hence, while there is a temptation, when writing a literature review paper, to dispense only fleetingly with wider concerns that are mentioned but not actively disputed in the source material, I shall not do so here; in particular, once again, because concerns about the wider field and its (insecure) relationships with surrounding disciplines and professional groups are deeply implicated in the theoretical debates I wish to synthesise.

Emphasising this first layer of analysis highlights that my reading was inflected by a strong conviction, substantiated in the source material, that *what is taken to be at stake* when discussing 'theory' in technology enhanced learning research is actually rather grander than might be apparent from a direct discussion of 'theory' itself. My description of the territory, in turn, is an attempt to capture some of those wider implications and use them to situate the more particular points that are subsequently made. Yet it should also be emphasised that this was an analytical strategy targeted at the papers I was reading, not a move to expand the scope of the literature review. Thus, where I subsequently discuss broader 'territorial' issues, such as the developing identity of the research field, my analysis will primarily reflect how those issues are *set out in papers concerned with theory application*. To the extent that those later papers represent broader issues in partisan or one-sided ways, there is a definite danger that my analysis might replicate those limitations.

Having queried those broader dynamics, the second layer of my analysis involved turning to focus on a range of more particular issues—'points of dispute', in Andrews' parlance. A summary of that analysis is provided in section 4. Analysing

points of dispute involved identifying the more particular issues concerning theory being discussed (the 'points of dispute' themselves), and then examining, *in relation to* those points, the differences (rarely: explicit differences of opinion; more commonly: differences of emphasis) evident in the source materials. The latter differences were gradually consolidated into different 'stances' or 'positions'. By comparison with the preceding section, the material in section 4 and its sub-sections will perhaps have a more conventional appearance for a work of literature review—in form, if not in length. A range of points of dispute will be identified, about which there is no definite agreement in the literature; the more prominent disparate stances will be delineated and, where possible, contextualised within the wider territory of the field; the ways in which those debates might inform subsequent work will be considered; and some critique will be offered.

For both 'layers' of my analysis, I used a relatively inductive technique. Doing so involved drawing out themes by examining points of commonality and difference in the content of the source materials, rather than applying previously determined categories. That decision, once again, should not be taken as disparaging of those more deductive forms of analysis that do apply more fixed coding frames, and indeed I have previously made use of such approaches myself (e.g., Luckin, Bligh, Manches, Ainsworth, Crook & Noss, 2012; Bligh, 2014). Yet, in this case, my goal to synthesise and systematise the underlying materials invited a relatively inductive approach. I emphasise 'relatively' inductive, however, because, in striving to present a critical account, I necessarily sought to apply normative judgment, especially where (as discussed above) I strived to position different stances in relation to each other as 'points of dispute'. It would be disingenuous to pretend that such normative judgements arose entirely from within the source materials, and that I successfully 'bracketed' away all my preconceptions. Furthermore, given that the terminology used in the source materials is highly heterogeneous, I should emphasise that, for better or worse, the names given to the analytical categories are largely my own.

3. Theory and the territory of the technology enhanced learning research field

How are the points of dispute identified? This is a matter of knowing the territory of the discipline, or at least of the topic. Once that territory is traversed via wide reading, reflection, discussion and exploration […] the points of dispute tend to emerge. (Andrews, 2010, p. 82)

In one way, the starting point for examining this 'territory' is obvious, and can be simply stated: there is an ongoing sense that technology enhanced learning is an atheoretical, or sometimes even *anti*-theoretical, research field (Jones & Czerniewicz, 2011). Statements to that effect litter the source materials for this review. While, as discussed below, not everyone involved views this state of affairs as a problem, it has become increasingly commonplace to see the field described, even within its own journals, as either making poor use of theory or neglecting it entirely (Bennett & Oliver, 2011; Gunn & Steel, 2012). Furthermore, that situation has persisted for some time, despite tenacious attempts at critique from a layer of critical scholars; though there is, as elaborated below, at least the possibility of change on the horizon.

Often, historical or structural explanations are offered for this atheoretical state of affairs. Examples of historical narratives are provided by Bennett and Oliver (2011), who locate educational technology research in the US as emerging out of pragmatic instructional design efforts, for industrial and military purposes, from the 1960s onwards (pp. 180-181), and by Issroff and Scanlon (2002), whose sense is that the field takes *pride* in its history as an "applied educational science" (p. 2); in the latter case, "applied" is partially taken, of course, as an antonym of "theoretical". What seems occluded in this literature is any sense that the history of research into technology enhanced learning across the globe might be heterogeneous; that the history of the US case, for example, might not reflect how scholarship on the topic was established elsewhere. That blind spot doubtless has implications for that sense of 'pride' that seen as emerging from the field's "applied" history, but this issue is left unproblematised in the source material. Nevertheless, while such pride is certainly a historical accretion, one currently (as elaborated below) a target for protest, it should not be imagined merely as a fading vestige, as the following claim for exceptionalism, in a piece published in a top-ranking TEL journal, demonstrates:

The field of learning design and technology is unique among academic disciplines for various reasons. First, our field aims to accomplish both research and practical goals. In short, our discipline exists equally in both the worlds of design and practice, and in research and scholarship. […] In addition, our field is a meta discipline, where the tendrils of our craft are intertwined with nearly every other field of study. Because each discipline and each topic must be taught somehow, educational technologists exist at the crossroads to assist in designing the learning environments, instructional strategies, and

technologies for teaching and learning. (West, Ertmer, & McKenney, 2020, p. 593)

West, Ertmer and McKenney's statement is interesting, not merely for its sense of swagger, but also because it draws attention to the circumstances, both practical and scholarly, in which technology enhanced learning research operates: namely, at an intersection of both research and practice, and across a wide variety of research fields. West et al.'s is a positive, celebratory statement; even the word "assist", which certainly hints at a role subordinate to others, is not explicitly presented in a cautionary way. Other authors also note such positional complexity, yet, by comparison with the work of West et al., many examples of what we might term a 'structural' narrative portray a less cheerful vista. Drumm (2019), for example, also starts out by emphasising that the TEL field operates at a crossroads of research, policy and practice; yet, in Drumm's account, it gradually becomes apparent that TEL practitioners are often, relative to those others operating at the intersection, in service-oriented, powerless or junior positions. For Drumm that relative powerlessness, in turn, comes with a variety of consequences—the most pertinent, for the present argument, being concerned with how TEL issues are conceptualised:

> It may be the case that academic developers and learning technologists, themselves inhabiting precarious and powerless positions (Clegg 2009) and operating with limited resources, use clichés and simplified maxims to help educators 'across the line' when supporting their use of technology. (p. 11)

Drumm's point here is to set up an argument about the predominance of what they call "folk pedagogies and pseudo-theories" (p. 1) in discussions of TEL; examples provided include 'digital nativism' and 'learning styles' (my own priorities for such a list would certainly encompass the concept of 'best practice'). However, in setting up that argument, Drumm's article also highlights how the institutional positioning of TEL practitioners can serve to attenuate their use of theory. In short, the suspicion is that, having acclimatised to those simplified vocabularies that facilitate working with more powerful collaborators, relatively powerless TEL practitioners then face enticement to internalise those vocabularies. Similar points are also made by Jones and Czerniewicz (2011), who note that "learning technology" is struggling to stabilise as a profession, and argue, in turn, that the development of "abstract knowledge" and a "codified body of principles", based on research, is essential if such professional stabilisation is to be achieved.

To what extent, we might ask, is this line of argument relevant to a discussion of theory in TEL research? Surely, just because TEL *practitioners* (whoever they are) are being painted into a difficult corner, there is no reason for *scholarship* in the field to be so conceptually constrained? Unfortunately, such an abstract line of reasoning fails to recall the history and structure of the TEL field as an "applied educational science" (once again: Issroff and Scanlon, 2002, p. 2). Other accounts highlight that, indeed, there *is* an analogous tendency for TEL research to tail policy and technology development; and, furthermore, that the moral imperative to do so partially stems precisely from an unwillingness to valorise any scholarship not demonstrably undertaken in the service of practice. In other words, part of the sense of pride felt by the TEL field derives precisely from the fact that its scholars *are* immediately entangled with practice. The corollary is that TEL scholarship does not so easily escape whatever constraints are placed on TEL practitioners (it is worth noting that some 'practitioners' and 'researchers' might, of course, be the same people—though, as elaborated below, even entirely 'academically-employed' scholars can face a degree of power imbalance within host disciplines, which is somewhat analogous to that encountered by TEL practitioners, at their own collaborative intersections). Bennett and Oliver (2011) draw attention to some of these issues in the following way:

> This continued focus on practical 'use-inspired' design research is promoted as 'socially responsible' (Reeves, Herrington, and Oliver 2005), to be valued above and pursued in preference to other forms of research. This view, advocating the type of learning technology research that *should* be done, limits possibilities for advancing the field. (p. 181, emphasis in original)

The TEL research field in general, and TEL researchers in particular, thus seem subject to the promulgation of anti-theoretical opinions both because of its history and because of the normative consequences of its self-conceived entanglement with practice. There is a dominant ideology—ideological in the sense that it disguises and naturalises the power relations in which TEL research and practice operates—that purely theoretical work is, because it does not directly serve the needs of given stakeholders, morally irresponsible. The notion that TEL researchers might consume valuable time talking to fellow researchers, or scholars working in other proximate domains, is subtly disparaged; as, indeed, is the notion that research studies might be oriented to ends other than practical improvements in the study context (however defined). That theoretical and applied knowledge are usually positioned in opposition within this moral economy means that developing theory can be easily become understood as irresponsible. Furthermore, such morality is deeply embed-

ded at the field's points of production and reproduction; journal editors, for example, often seem to prefer "purely empirical" studies, while many academic programmes associated with TEL topics retain a largely atheoretical character (Gunn & Steel, 2012, p. 2).

What should be abundantly clear, then, is that the lack of emphasis on theory in TEL is no mere oversight: instead, it emerges from the field's history and remains continually reinforced by the dominant nexus of research practices.

One downside of the regime outlined above is that scholarship in TEL has long struggled to gain legitimacy or recognition within academic circles. That is important to those researching the area because the field is disciplinarily siloed (Sutherland, Eagle & Joubert, 2012). There are, in other words, relatively few dedicated TEL departments of academic scholarship within universities. Instead, TEL research is hosted *within* a range of more established departments, whose disciplinary identities vary widely between different institutions and national settings (the more common ones are oriented towards educational research, psychology, computer science, management and organisational studies, healthcare, and engineering). Researchers from such backgrounds are socialised and structurally incorporated into their home disciplines, and to some extent talk past each other at international conferences where their different backgrounds invite them to pursue different priorities; for this reason, Sutherland, Eagle and Joubert's work considers what might be involved in constructing a conceptual agenda that could serve as a boundary object between such silos. Yet, for present purposes, it is important to grasp that TEL is rarely fully accepted within those disciplines associated with its host departments—here it gets disparaged in favour of more obviously 'scientific' endeavours, there scolded for a perceived lack of critical scholarship.

Overall, technology enhanced learning research is often seen, by its academic neighbours and critical scholars in the field alike, as pragmatic to the point of intellectual myopia: at best fixated on "best practice" (Drumm, 2019); and at worst descending into polemic driven by "hype" (Crook & Sutherland, 2017). And analyses of published studies in the field suggest that such perceptions are not without foundation, as evidenced by the findings such as those of Gunn and Steel (2012):

> [...] our analysis of articles published in two leading journals found the same situation as earlier studies of a similar nature; well-grounded designs and systematic evaluation approaches reported side by side with poorly conceived or poorly applied methodologies, limited

reference to theory, weak results, incomplete descriptions, uneven presentation of data and overblown and unsupported claims of impact and importance. While this is an extreme statement in relation to most of the articles we reviewed, the incidence remain unacceptably high and is, therefore, detrimental to advancing the field of research in learning technology. (p. 11)

Not a mature field in its own right, nor respected by its neighbouring disciplines, TEL is vulnerable to being caricatured as a running dog operating at the whim of neoliberal policymakers, technology companies and dubious 'thought leaders'. The optics are bad, the status quo looks increasingly untenable in the long term—and, as we shall now consider, the field's longstanding ideological morality tales are being challenged as never before.

One source of such challenge seems to emerge from within the field itself; indeed, there seems something of a generational divide opening up, with theory one of the key fault lines. Bulfin, Henderson and Johnson's (2013) survey of research scholars, for example, reports that finding views positive about the deliberate use of theory in research is "more likely with respondents in non-promoted positions and early stages of their careers, and those in the 'social sciences and humanities'" (p. 338). Yet, in the field more broadly, their survey finds widespread scepticism persisting: one transcript excerpt, tellingly, documents a respondent worrying that "over-theoretical" research is resulting in "gaps between academic researchers and practitioners" (p. 341). That latter view, of course, is a classic statement of the predominant ideology. Presumably, our worried correspondent is not one of those in a "non-promoted" position.

Moving forward from such bases, the source material projects the impression that a contest is underway; one in which the stakes are nothing less than the future trajectory and identity of the research field, and in which 'theory' is a core site of struggle. Arguments for ameliorating the use of theory in TEL research are often, more particularly, built around two linked propositions: (1) that technology enhanced learning research needs to *mature* as a discipline, and (2) that deeper theoretical engagement is crucial to that enterprise (cf. Hew et al., 2019).

The relationship between these two propositions is more fluid than it might appear. That forging a disciplinary identity is taken as the reason that theoretical engagement is worthwhile, of course, is a reasonably obvious reading. But there are other implications. One is that 'maturing' as a discipline requires a willingness to focus some of our attention 'inward' on scholarship, if necessary to the detri-

ment of a focus on servicing the needs of policymaker and practitioner stakeholders in the short-term—emboldened by a newfound belief that developing the field might accrue benefits over the longer run. How that focus on scholarship might be accomplished is subject to considerable dispute (as elaborated in the analysis provided, below, in this paper), yet some points of commonality can certainly be detected. In particular, it seems important that emphasising scholarship should not mean becoming insular and simply disparaging practice, but should instead mean more explicitly:

1. viewing both 'scholarship' and 'practice' as capital-p *Practices*, each legitimate in their own right;

2. problematising the relationships between them; and

3. understanding that those undertaking the practices of scholarship are indeed allowed to have their own agendas.

Another implication is a requirement for rethinking relationships between TEL and its neighbouring academic disciplines. As highlighted above, many TEL researchers are 'interdisciplinarians' surviving tenuously in disciplinary institutional environments; and indeed, notwithstanding its decades-long existence, TEL research is, in many ways, in intellectual thrall to its antecedent disciplines (de Laat & Lally, 2004). There is a resultant sense of eclectic borrowing that can easily be detected in peer-reviewed scholarship; Hew at al. (2019), for example, recently conducted a relevant content analysis of published literature, which highlighted:

> We note that of the 183 theories, only 35 (approximately 19%) can be considered specific to educational technology, such as TPACK. […] One possible explanation is that educational technology is an eclectic field (Ely, 1983) that borrows heavily from other disciplines such as sociology, psychology and computer and information sciences (Jones & Czerniewicz, 2011). Consequently, to the extent that researchers of educational technology apply theoretical perspectives, these theories are likely to be drawn from other disciplines. […] [T]he sheer range of theories from various disciplinary sources presents a formidable challenge for any researcher attempting to outline a coherent theoretical stance on educational technology as a whole… (p. 967)

In Hew et al.'s statement we can detect the outlines of what, below, I shall unpack further and refer to as *exceptionalism disputes* (section 4.4). Yet, for present purposes, notice the connotations of the latter sentences of the quotation: Hew et al. are not suggesting simply that 'borrowing' from other fields is intrinsically bad, but rather that the range and extent of *disparate* theories that are getting borrowed is un-

dermining the ability of those in the field to adopt particular stances. Not everyone, of course, will immediately agree that this situation presents a problem: the word "eclectic" is often used approvingly in TEL circles, especially where it sets up some instance of methodological "bricolage". Yet such rhetorical moves can be used in ways that unhelpfully conflate two different issues. Such discussions of bricolage often refer to the choices of individual practitioners or the formulation of particular projects, whereas if we focus our attention instead at the level of the *field* then it perhaps becomes more obvious that the practice of bricolage (the act of *construction from* diverse sources) is exactly what is being stunted. In other words, for better or worse, in theoretical terms the field looks eclectic and not coherent; a consequence, one might suspect, of the fact that the field is only just starting to overcome its ideologically-derived sense of guilt at focussing on theory at all.

As de Laat and Lally (2004) put it, "as a research community, we are still in the process of coming together [and] still emerging from the fields that informed the genesis of our interests" (p. 13). On the theoretical front, at least, progress has been disconcertingly slow in the years intervening since de Laat and Lally made that statement, but at least serious attention is being drawn to the issue, as evidenced by Special Issues devoted to the topic, including the present volume. The somewhat anguished nature of those debates largely, in my view, emerges out of the history and structure I have sketched here.

What I have tried to convey in the account is, I acknowledge, complicated and slippery. But I think it is an important starting point, for contributions to volumes like the current special issue, to acknowledge the tectonic plates that have been moving (slowly) for some time, and which are operating to some extent underneath those more direct debates about theory that are evident at the present moment. When we debate the issue of 'theory' in technology enhanced learning research, it seems, we do not merely debate arcane philosophical issues, but actually engage in contesting the future of the research field. Scholars of TEL face something of a fork in the road. Will we steer towards continuity with past ideologies, or break away towards a more independently principled scholarly vision? And, if we opt for the latter, will that principled vision veer towards the permanently eclectic or the pursuit of coherent stances? It is unclear what effect the continued interventions of critical scholars, or the career maturation of those early career enthusiasts uncovered by Bulfin, Henderson and Johnson's (2013) survey, will have on the ongoing development of the field. But it is certainly the case, in my view, that the different points of dispute I elaborate below are best understood as threads

interwoven into the wider fabric outlined above.

4. Points of dispute concerning theory in technology enhanced learning

> Points of dispute are like knots in wood, or bruises, or blockages in transport systems. They are points at which there is some problem, some seizure in the general flow of things. […] Once the point of dispute is identified the problem can be clarified. Clarification is an important part of this stage, because it helps the solving of a problem if the problem can be accurately defined and 'contained'. (Andrews, 2010, p. 82)

Having discussed those broader dynamics which, in my view, provide the impetus for discussions of theory in TEL research, I now turn to focus on a range of more particular issues—the points of dispute, in Andrews' parlance, within those discussions. To reiterate what I said earlier, in this section a range of points of dispute will be identified, about which there is no definite agreement in the literature, an attempt will be made to 'contain' them, and prominent yet disparate stances will be delineated in relation to those points of dispute.

For the sake of brevity, and also to facilitate easy reference in the remainder of the paper, I have given my own names to the points of dispute I identify:

- *canon disputes*: which concern the scale and historicity of what are taken as 'theories' in the field;

- *interchange disputes*: which concern the extent to which the field's theoretical and empirical discourses inform each other;

- *functions disputes*: which concern how theories might assist the field to further develop in future; and

- *exceptionalism disputes*: which concern the extent to which TEL research might be based on theories imported from other fields of scholarship.

I shall now discuss each of these disputes in turn.

4.1 Canon disputes

By *canon disputes*, I refer to discussions about what are taken as 'theories' (plural) when the issue of 'theory' (usually in the singular) is discussed in the field. In TEL, unlike in many social sciences research fields (cf. Maxwell & Mittapalli, 2008), such debates have *not* primarily taken the form of paradigm contests between those, on the one hand, who advocate logical-positivist definitions of theory (i.e,

that theories are attempts, driven by particular regularity assumptions about the world, to make predictions about the future via mathematical representations) and those, on the other, who advocate more encompassing notions (i.e., that theories are constellations of concepts, used within particular knowledge domains for a variety of purposes). Instead, what constitutes 'theories' (plural) in the TEL field has usually been established by example and precedent; contemporary dissent, correspondingly, focusses on establishing that both the examples used and the structure in which they are presented have problematic implications.

For a considerable time, discussion of theory in the TEL scholarship has been predictably framed by tracing an "accepted canon" (Jones, 2015, p. 49) of "grand theories" (Crook & Sutherland, 2017, p. 12), and it is within the emerging debates centred on this canon that I differentiate a range of distinct positions that will be elaborated in this section. In this oft encountered narrative, the research field has engaged in a slow march across decades: setting off from 'behaviourism', proceeding gradually through 'cognitivism' and 'constructivism', before arriving at 'social constructivism'. Though minor variations in the account are occasionally found, often driven by the particular agenda of the author—especially where 'constructionism' and 'sociocultural theories' are introduced (as variations of, respectively, constructivism and social constructivism)—the family resemblance is easily discerned. The key point, for present purposes, is that this overarching narrative encounters increasing contestation.

In what follows, I shall demarcate six positions, evident in the source materials, that dispute aspects of this theoretical canon in different ways. I shall refer to these stances, in turn, using the labels *theoretical advance*, *theoretical co-existence*, *canon integration*, *canon disaggregation*, *canon juxtaposition*, and *canon expansion*.

4.1.1 Theoretical advance

One stance sometimes taken invokes the importance of the canon as a frame for understanding and justifying what we might term *theoretical advance*. Harasim (2012), for example—who goes on to present an orthodox overview of the canon itself (pp. 9-12)—adopts such a position in the following statement:

> Understanding the historical shifts in learning and technology as well as the advances in learning theory during the 20th century provides a valuable framework and context for identifying new theories of learning related to online technologies and social communication. (p. 3)

By contrast with the other stances that I shall outline in this section, Harasim's position is, at least on epistemological grounds (i.e., as a basis to generate knowledge about TEL), the least directly critical of the canon itself. Harasim's argument suggests an acceptance, instead, that the different theoretical categories were dominant in particular historical periods because they successfully highlighted the ontological reality of how learning was undertaken in those periods:

> The historical context helps us to understand how education was perceived, shaped and practiced at different stages of human development. […] We can also see 20th-century learning theories as part of a continuum and as a context for learning theory and practice for the 21st century. (p. 3)

For Harasim, the canon, therefore, adequately describes successive forms of "20th century learning"; critique, rather than being directed at the theories themselves, emphasises instead the ontological claim that such "20th century learning" has now been superseded. In other words, Harasim suggests that the categories ('behaviourism', etc.) describe how learning *used to actually happen*, but argues the necessity of realising that learning does not happen like that any more. Harasim juxtaposes, instead, a new ontology—"21st century learning"—which, they suggest, arises as a consequence of a "historical shift", predicated on the internet revolution and new economic imperatives for knowledge creation. On that basis, Harasim argues the need for a new theory—named Online Collaborative Learning (OCL)—commensurate with that new reality:

> OCL responds to 21st-century Knowledge Age requirements and provides a theoretical framework to guide the transformations in instructional design. (p. 81)

The suggestion of a close mapping between the reality of learning and our theorisation of it, which underpins Harasim's account, resonates closely with a form of argumentation, sometimes called "paradigm shift rhetoric", which is prevalent across the field and used in relation to a range of different scholarly debates (cf. Lee, 2018). Such rhetoric often serves to project normative accounts within the field; Lee notices how, for example, such accounts typically use global, societal trends as a basis for building dichotomies between 'old' and 'new' approaches to learning, which, in turn, are deployed to legitimise particular practices at the expense of others. The consequences, especially when such understandings get entwined into policy and manifest via accountability mechanisms, can verge on the authoritarian—especially, in Lee's examples, from the perspective of those teachers being held 'accountable'. Such arguments about the use of

paradigm shift rhetoric across the field overlap considerably with *theoretical advance* positions in relation to the accepted canon; indeed, the latter might plausibly be understood as a particular instantiation of the former. Interestingly, the work of Lee (2018), which discusses the broader issue, uses a different text by Harasim to furnish one central case study of such rhetoric, raising the possibility that particular authors repeatedly deploy narrative forms of this type. Harasim's stance, tellingly, does not so much involve interrogating the canon as wielding it as a means for legitimation; once it has served this purpose, and once a new theory has been established in its stead, the canon gets, to a large extent, discarded. What is important, for present purposes, is that in such positions the canon is a not positioned as a matter for active consideration by empirical researchers at the present juncture. Arguably, it remains visible, instead, as a catechism recited in honour of our scholarly ancestors.

4.1.2 Theoretical co-existence

Another position taken in relation to the standard canon of grand theories is almost diametrically opposite to that of *theoretical advance*: instead, it emphasises what we might call *theoretical co-existence*. At the heart of such positions is a critique of what Crook and Sutherland (2017) characterise as "an evolutionary trajectory" being expressed within the canon:

> At the heart of this overview is an evolutionary trajectory that passes from a focus on responses and stimuli (behaviourism), to a focus on the mind (cognitive science), to a focus on the individual as a constructive agent of learning (constructivism), to a recognition of the social and intersubjective nature of learning, to a focus on the role of culture and technological tools as constituting learning (sociocultural theory). (pp. 22-23).

That trajectory, of course, will seem somewhat familiar from our discussion of the preceding position. Yet here there are two key differences: (1) the canon trajectory is positioned epistemologically (notice the repeated use of the formulation "to a focus on"), i.e., as a matter of research knowledge rather than underlying reality; and (2) the writers' priority in noticing the trajectory is one of problematisation, rather than reinforcement.

The position of *theoretical co-existence* involves, above all, rejecting any notion that later categories in this trajectory have rendered earlier ones obsolete—or, indeed, that any of the named categories ought to be considered obsolete at all. Though the canon is positioned in the realm of epistemology, however, one means for making this point does invoke the

reality of the field: these critics emphasise that *all* of these categories *continue* to influence contemporary practice and scholarship even down to the present, and in doing so notice that the canon's neatly linear periodisation is fanciful (Jones, 2015; Crook & Sutherland, 2017). What seems common to such a position of *theoretical co-existence*, thereafter, is that researchers are invited to recognise the advantages of more consciously validating that continuing influence—and, having done so, of striving to explore and exploit the *different* assumptions about learning that predominate in both scholarship and practice.

A more open question remains, however, about how we might grapple with those relationships between theoretical categories that such *theoretical co-existence* implies. The metaphor of 'competition', in particular, is one problematic feature of such discussions. Whereas Jones (2015), for example, states that "the different perspectives it [the canon] identifies *are* in many ways *still* in competition" (p. 49, emphases added), Crook and Sutherland (2007) caution that "[t]his structure [the canon again] *risks implying* that they are in some sort of simple competition" (p. 12, emphasis added). While, *prima facie*, these statements seem at odds, I remain unconvinced that they indicate a significant divergence. Instead, the difference once again implicates a distinction between reality and knowledge; as the surrounding text in each case makes clear, Jones' statement addresses the reality of a field in which disparate ideas continue to circulate, while that of Crook and Sutherland concerns how researchers might intellectually engage with the canon and relate it to their own scholarship.

It remains the case, however, that those aspects of this *theoretical co-existence* position that declare a cautionary critique of orthodoxy are substantially more developed than any accompanying suggestions about overcoming or supplanting the predominant narrative. In other words, adopting a position of *theoretical co-existence* often does not *in itself* necessarily lead to agreement on prescribing how scholars might handle that co-existence, though such prescriptions might well be suggested where authors combine arguments for theoretical co-existence with one or more supplementary positions. Indeed, the works of both Jones (2015) and Crook and Sutherland (2017) do each subsequently combine their position of *theoretical co-existence* with an additional, subsequent argument, which I shall turn to discuss later.

4.1.3 Canon integration

Before doing so, it will be advantageous first to elaborate a position that reacts to *theoretical co-existence* and which

attempts to provide a direct solution to the attendant sense of theoretical 'competition' (a *much* more direct solution than is proposed either by Jones, or by Crook and Sutherland, which is why I consider it at this point). That position might be called *canon integration*, with a prominent example provided by the work of Mayes and de Freitas (2013). On the basis that previously stark differences in conceptions of learning are by now largely overcome—"never before", they write, "has there been such agreement about the psychological fundamentals" (p. 19)—Mayes and de Freitas wish to *update* the established grand narrative so that it instead emphasises "a set of quite compatible explanations for a large range of different phenomena" (*ibid.*). Their alternative grand narrative coheres, in a way that declares the influence of prior work in the field of learning sciences by James Greeno, around three labels: named the 'associationist', 'cognitive', and 'situative'. The labels themselves, of course, still describe very broad categories.

Mayes and de Freitas' key claim is that, rather than portraying rival narratives, their labels now describe different "levels" of analysis; moreover, they suggest that "[t]here will be few current examples of approaches that derive from taking just one level of analysis and neglecting the others" (p. 25). The intention behind this position, very clearly, is to synthesise a set of prior historical debates now regarded as resolved—thereby, perhaps, moving from a (relatively singular) accepted canon of grand theories to a (yet more singular) grand theory. Tellingly, such a position involves a rhetorical downgrading of the 'associationist', 'cognitive', and 'situative' levels; Mayes and de Freitas suggest that, since their three categories are intended to be used together, they might be better regarded as "perspectives" rather than theories (*ibid.*). In this way, Mayes' and de Freitas' variant of the *canon integration* position involves proposing a single theory in which the core concepts—at least four: associationist, cognitive, situative, and *level*—are integrative of the prior canon. In stark contrast to *theoretical advance* positions, it is abundantly clear from Mayes and de Freitas' text (such as where the concepts are deployed in relation to a discussion of a concrete example which is, unfortunately, too lengthy to excerpt; pp. 26-27) that this newly integrated variant of the canon is meant to 'carry forward' prior positions into current work and render them as *active* positions for researchers to compare and contrast. This integrated canon, in other words, is to be used, in its entirety, in relation to particular empirical projects.

4.1.4 Canon disaggregation

Another prominent position takes a very different approach in relation both to the canon and the attendant

theoretical co-existence—one hinging not so much on integration as its opposite: what we might call *canon disaggregation*. Here is where we shall return to the work of Jones, and of Crook and Sutherland. Underpinning *canon disaggregation* positions are attempts to show that the standard canon projects categories that are, whether in whole or in part, erroneous. Arguments of this nature, then, proceed from very different perspectives on the historical progression evoked by the accepted canon: with the categories positioned as a *post-hoc* attempt to tidy up and rationalise what, in fact, were and remain disparate and messy intellectual debates. As Jones (2015) notes:

> This disagreement points to a major problem with simplified accounts of learning theory which […] do not accord with the history of ideas, they exclude significant trends in educational theory and muddle together approaches with quite different ways of seeing the world and quite different practical implications. (pp. 54-55)

One relatively straightforward instance of *canon disaggregation* is provided by Jones (*ibid.*), soon after the preceding statement. The argument is, fairly straightforwardly, an attempt to undermine one of the core categories of the accepted canon, unpacking the use of 'constructivism' along geographical lines as a means to do so:

> The kind of constructivism that has been most influential has been social in character and there is a slight difference in the ways that constructivism has developed in the United States and Europe. European approaches to learning theory are happier to speak and write in terms of sociocultural theory and about situated learning whereas approaches from the Unites States are more likely to use the term constructivism to cover similar issues. (p. 55)

Crook and Sutherland (2017), similarly, emphasise the importance of such distinctions, and in doing so they select a similar target. With regard to much constructivist theorising, for example, they note that:

> Certainly, the learner became more typically cast as an (active) interrogator of the world. But that world is too often itself a rather static (passive) place: a place of fixed or unresponsive learning materials: for example, textbooks and worksheets […] (p. 15)

Whereas Crook and Sutherland later discuss sociocultural thinking, by contrast, in the following way:

> Sociocultural theory addresses more than the interpersonal […] Within sociocultural thinking the individual and the world are considered to be inextricably linked from the outset, such that the external environment is not simply viewed as a "context" to the human mind but intrinsic to the way in which mentality is actually constituted. Moreover, the culture inherited by learners is seen as having both people and tools as central constituents. The formative place of cultural history is thereby acknowledged in terms of how it specifies a heritage of spaces, rituals, practices, institutions and technologies (which, of course, includes digital technologies) that mediate the experience of learning. (pp. 16-17)

Such points serve, of course, an explanatory purpose in themselves: addressing, for example, why work of commensurable motivation which pledges allegiance to ostensibly similar categories within the accepted canon can exhibit markedly different trends across the globe[5], by suggesting that they are not, in fact, drawing inspiration from the same categories at all. Yet authors adopting this *canon disaggregation* position use it, in fact, for more definite purposes; as a basis for considering how researchers might better engage with such a disaggregated canon. Grasping that is important because an acceptance of *canon disaggregation* could, in the abstract, be wielded in support of a wide range of positions that are not actually being advocated. Perhaps, a devil's advocate might suggest, this disaggregative perspective is simply an argument for more precise definitions? In turn, perhaps what is required is a greater standardisation of definitions for each of the rival perspectives encompassed therein, and/or the elaboration of an expanded canon, so that it encompasses a greater number of named categories?

In fact, however, the *canon disaggregation* perspective is usually deployed to highlight some fundamental limitations of broad categorical thinking in general; critique of the contingent categories that happen to dominate the current canon narrative are merely a means to that end. In other words, critiques of particular categories—such as those discussed above—are meant to be taken as mere *examples*.

The end argument of the *canon disaggregation* position, then, is that the generative capacity of theoretical thinking—for example, what was described above as exploring

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5 An obvious example might be that of research on mobile learning: where "social constructivist" work in the US usually focusses on the principled design of interactive learning *materials* that are delivered via mobile devices, and the evaluation of their use by learners; while "sociocultural" work in Europe typically emphasises understanding the practices of *mobile learners*.

and exploiting the different assumptions about learning made in scholarship and practice—can be compromised, if the theoretical categories used to resource that thinking are too broad. Crook and Sutherland (2017), who make such an argument very explicitly, are keen to caution their readers against two dangers: firstly, singular narratives that "are not respecting the diversity of current theoretical thinking" (p. 19) and, secondly (and as already mentioned above), the view that the grand theories themselves are in a state of "simple competition" (p. 12). How, then, to avoid careering from one danger to the other? What is required, Crook and Sutherland suggest, is a conceptual step interme-diate between high theorising and empirical investigation: recognising that the grand theories are "generative of other perspectives" that are "narrower in the span of their con-cerns" (p. 12). We are still being invited, in this critique, to explore and exploit different assumptions, but, among other things, it is being suggested that, rather than contemplating the agreement or otherwise of different broad theoretical categories, we need to think concretely about how given theories are actually *used* to interrogate given subject mat-ters in different ways, and then to examine the more specific perspectives being developed as a consequence. This, in other words, is an argument that the distinctions within and between theoretical categories need to be mapped according to their application across the field.

4.1.5 Canon juxtaposition

Next, I turn to discuss two further positions that require elaboration, which each proceed from a common observa-tion: namely, that the standard canon prioritises a particular phenomenon (*learning*) from a particular perspective (disci-plinary *psychology* from a largely 'Western' perspective), to the detriment of other phenomena and perspectives that are entirely worthy of being (to continue the metaphor) 'canon-ised'. The following statement by Passey (2019) makes clear the nature of the problem that the two subsequent positions address:

> The field of TEL has expanded well beyond an area focusing on learning per se. It now encompasses areas (ecologies of technologies) that take theoretical under-pinning needs beyond the concerns of learning. (p. 981)

The fact that the two are described as different positions reflects an important disparity in how scholars respond to such observations: with one stance involving what I shall label *canon juxtaposition*, while another suggests what might be called *canon expansion*.

The work of Scardamalia and Bereiter (e.g., 2006; 2014)

is often cited, in discussion of canon issues, as emblematic of an increasing dissatisfaction with a focus on 'learning'. And, indeed, in their seminal 2006 chapter, Scardamalia and Bereiter proceed from an elaboration of "the significance and diversity of ideas that have come to prominence since the 1960s" (p. 97) in a way that seems purposefully to *inter-sperse* elements of the standard TEL canon *into* a list whose membership also encompasses a range of other issues: such as "Thomas Kuhn, Imre Lakatos, sociology of science, the 'Science Wars' […], explanatory coherence, the 'rhetorical turn' […], memetics, connectionism, emergence and self-or-ganization" (*ibid.*). In a move that ostensibly resonates with the arguments of Harasim (see above), Scardamalia and Bereiter argue that "[o]urs is a knowledge-creating civiliza-tion" (*ibid.*). Yet, unlike Harasim, their suggestion turns out to involve retaining the standard canon, while recognising that, since it refers only to learning, we need to place that canon alongside a new one: the suggested name for which is "the new 'knowledge of knowledge'" (*ibid.*). In this piece I shall refer to Scardamalia and Bereiter's stance, therefore, as *canon juxtaposition*[6].

Scardamalia and Bereiter (2014), in a later piece, further make the distinction at the heart of their position explicit:

> To demarcate this space in education we have distin-guished between learning, conceived of as a change in mental state, and knowledge building, conceived of as the out-in-the-world production of designs, theories, problem solutions, hypotheses, proofs and the like. The two may go on in parallel, and are expected to do so in education, but from a design standpoint they represent different problem spaces. (p. 397)

The *canon juxtaposition* stance, therefore, involves "distinguishing between" the standard canon and other concerns positioned as complementary; doing so, important-ly, positions the canon itself as concerned with legitimate but particular issues. Scardamalia and Bereiter's (2006, 2014) work, in particular, is a good example of this stance because the complementary narrative (the "knowledge of knowledge") is presented in a mature state of development (indeed, that work has been widely influential across the field). Conversely, my intention in invoking it is not to endorse the particular position that 'knowledge' is the most

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6 My reading of their actual, explicit statements that concern the topic of the canon tempted me to apply the label "canon parallelism", but Scardamalia and Bereiter's subsequent discussion of their own re-search priorities makes abundantly clear that the *relationships between* what they conceive as two spheres are of fundamental importance to their position.

important *definite* aspect missing from the standard canon narrative[7]—equally valid arguments, doubtless, could be made in support of juxtaposing the standard narrative against other concerns. For present purposes, however, we do need to take seriously the more general point: that an emphasis on 'learning' as a 'psychological' phenomenon is being increasingly challenged across the field.

4.1.6 Canon expansion

Another position reacts to this challenge in a different way, which I shall term *canon expansion*. Underpinning such a position is a desire to reconceptualise the very issue of 'learning' so that it encompasses concerns raised within bodies of knowledge whose representation, in the canon as it is presently constituted, is found wanting. That desire, in turn, leads those who adopt this position to attempt to broaden and re-shape the canon. Murphy & Rodríguez-Manzanares (2014), for example, start to project such a position by noticing how one prominent theory, in particular, is difficult to position within the canon:

> Activity Theory has been referred to as a "sociocultural framework" (Waycott, 20115, p. 120) and a "powerful sociocultural lens" (Jonassen & Rohrer-Murphy, 1999, p. 2). It has been described as "a sub-theory" of sociocultural theory (Lantolf & Beckett, 2009, p. 460). Stetsenko described it as belonging to a "vast family" (p. 70) of sociocultural theories that depart "from the individualist and mentalist notions of … development" (p. 70). Activity Theory presents commonalities with other sociocultural approaches and theories focusing on human development, but it also distinguishes itself from them […] (p. 23)

Thus far, in that it seeks to problematise a single canon category, this position has some commonality with that of *canon disaggregation*, which has already been considered above. Yet Murphy and Rodríguez-Manzanares go on to make clear that their stance also involves troubling other categories as well. To do so, they invoke the work of Engeström (2005), whose argument regrets that some aspects of activity theory (such as its sign-mediated understanding of reality) are sometimes understood as a form of constructivism, while others (such as its focus on how subjects create reality) get positioned as a form of constructionism (p. 160). For Engeström, such interpretations constitute basic misun-

derstandings arising where scholars attempt to fit the theory into a conceptual terrain which is, while familiar, inappropriate to the task. Engeström argues, instead, that activity theory developed from within an entirely *different trajectory* of theoretical debate and contestation: where, looking back, the key difference at each stage was an absence of the "methodological individualism" which, notwithstanding any claims to the contrary by its proponents, dominates Western conceptualisations of learning (p. 161).

What a position of *canon expansion* suggests is needed, consequently, is a thoroughgoing reconceptualisation of those debates that the standard canon seeks to summarise. In turn, that reconceptualisation, it is suggested, needs to take a form that allows the key differences to be drawn out in a way that problematises more broadly the object of the canon: learning itself[8]. In line with my exposition of the other, preceding stances, I do not wish to give the impression that activity theory constitutes the only challenge to the standard canon that is worthy of *canon expansion*[9]; on the contrary, there are doubtless many other intellectual trajectories that could be taken as the basis for such a position. Yet two aspects of Murphy and Rodríguez-Manzanares' account render it a useful example for present purposes. The first is that activity theory places heavy emphasis on understanding how concepts have arisen, as attempts to mediate contradictions in prior practices, within historically and culturally situated practices; which means that (unlike for *theoretical advance* positions) activity theory advocates like Murphy anfd Rodríguez-Manzanares are unwilling, as a point of principle, to consider earlier debates closed once their own position has been stated. The second is that activity theory does not concede either that learning is a separate sphere from other aspects of practice, nor that 'psychological' understandings of it should necessarily be privileged; meaning that (unlike for *canon juxtaposition* stances) the notion that the existing canon might best be understood in relation to a separate body of knowledge positioned as external seems,

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7 The contention that learning and knowledge are separate problem spaces, to be clear, does not accord very closely with my own views, even if we accept the caveat that this is done merely to accommodate a "design standpoint".

8 If this distinction seems difficult to grasp, then it may be helpful to conceive the standard canon as a series of positions oriented towards a gradual elaboration of the phenomenon of individual humans learning. Where those positions vary is in elaborating "what we have to take into account when considering" or "how we might best understand" that core phenomenon. Whereas this position argues that other intellectual trajectories, which were not oriented towards *the phenomenon of individual humans learning* in the first place, might still be understood validly as oriented towards *learning* if the latter is interpreted less narrowly.

9 Yet, given my publicly visible scholarly record, it would be absurd to pretend that this stance does not accord fairly closely with my own views.

from this vantage point, inadequate.

4.1.7 Synopsis of canon disputes

A synopsis of *canon disputes* is provided in Figure 1. The largest node, "canon disputes", is, of course, located central-

ly—as the locus for these disputes. As the question posed in that node indicates, the disputes considered in section 4.1 have a strong flavour of historicity; they directly invoke how theory has been discussed and positioned in the field in the past. In most cases, invoking such past discussions is motivated by a desire to problematise them in some way. As

Figure 1. Synopsis of *canon disputes*
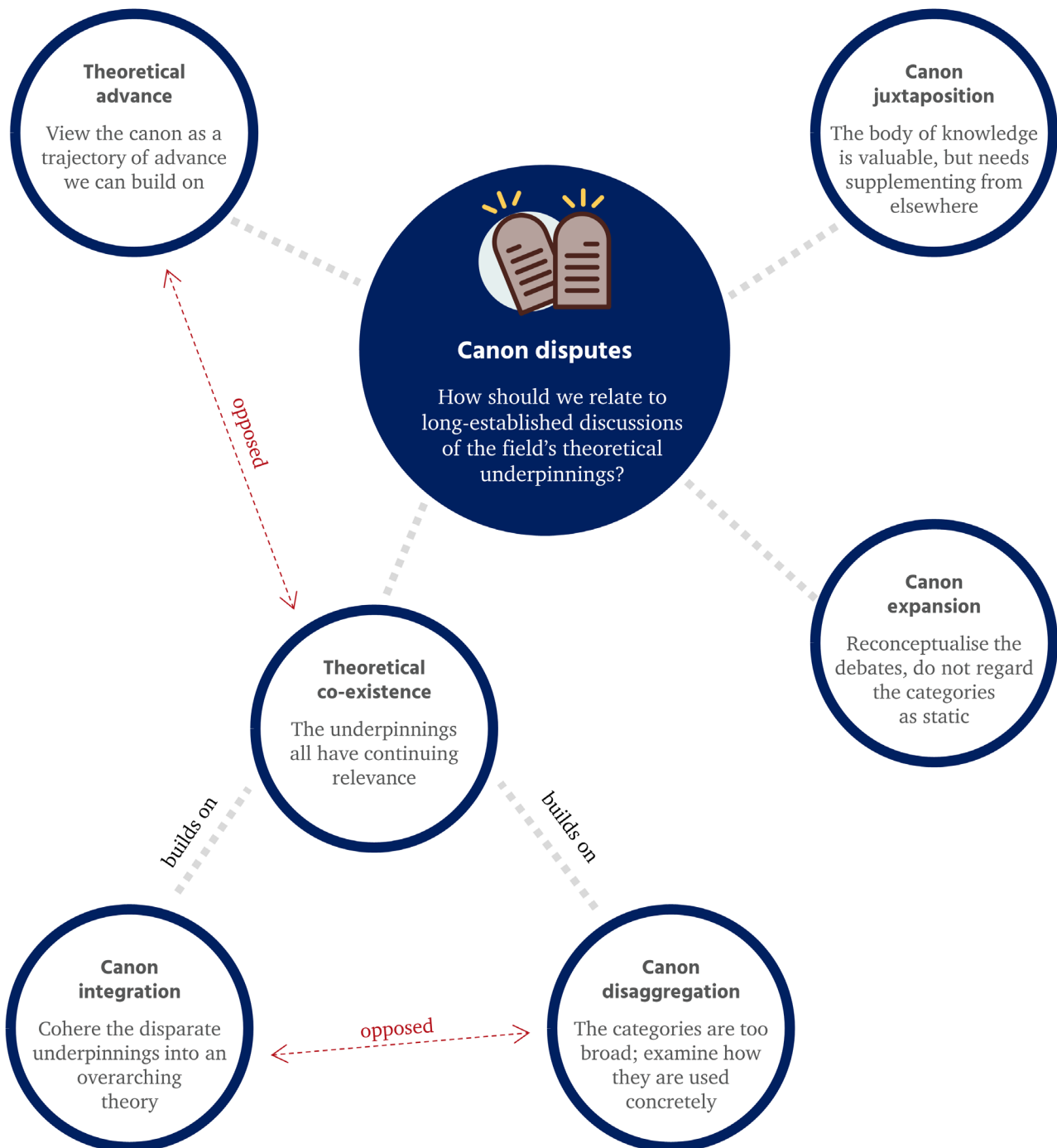
I noted in the introduction to this section, contemporary dissent problematises both the examples used and the structure in which they have been presented. That such effort has been devoted to such problematisation it, itself, an indicator of the considerable hold that theoretical "canon" continues to exert over work in the field.

The structure of the diagram positions the other nodes in relation to that central locus, with each representing a distinct stance that responds to the 'central' question. The peripheral nodes provide, in turn, a short summary of the positions outlined previously across this section: respectively, those of *theoretical advance* (section 4.1.1), *theoretical co-existence* (4.1.2), *canon integration* (4.1.3), *canon disaggregation* (4.1.4), *canon juxtaposition* (4.1.5), and *canon expansion* (4.1.6). Each peripheral node provides a short summary of the position, with those summaries simplified considerably by comparison with how they are discussed in the respective section, above. The reader is directed to the respective section for a more nuanced analysis of the respective position.

What the diagram highlights, in a way that can get obscured when considering the detail, is the extant relationships between the various positions. Of course, each relates to the central locus of "canon disputes"; and that each has been represented using a separate node is intended to convey their distinctiveness. Yet the diagram also highlights other important relationships between these stances. The *theoretical co-existence* position, for instance, is built on, quite directly, by those putting forward *canon integration* and *canon disaggregation* stances. In other words, for a given author to advocate one of those latter positions, they must not only address the *canon disputes* but also establish a stance of *theoretical co-existence* as a precursor. *Theoretical co-existence* is thus positioned, in Figure 1, as mediating between the core locus and each of those positions. Conversely, the *canon integration* and *canon disaggregation* stances are labelled, in the diagram, as "opposed", which highlights their incompatibility; an author could not advocate for both positions in the same paper without falling into argumentational incoherence. The *theoretical advance* and *theoretical co-existence* stances are labelled as "opposed" for the same reason. Another relationship between two of the positions is not highlighted directly in the diagram, but is worth noting: that there is some similarity between the *theoretical advance* and *canon integration* positions. In both cases, the underlying impetus is to *resolve* the canonical disputes and 'move forward'. The main difference between the two positions, as Figure 1 conveys, concerns whether or not the validity of *theoretical co-existence* is accepted as a basis for that resolution.

Of course, not all stances adopted within theory disputes in TEL relate, so evidently, to the long-established theoretical canon. Such stances are analysed in the subsequent sections, with my analysis turning next to consider questions of 'interchange' between theoretical and empirical work in the field.

4.2 Interchange disputes

By *interchange disputes*, I refer to discussions concerning the extent to which the field's theoretical and empirical discourses inform—and, in general, *fail* to inform—each other[10].

At minimum, such discussions address the point that there does *exist* a considerable body of theory, on which, in principle, empirical research in the field could draw. Moreover, it is sometimes noticed, a range of conceptual or theoretical papers about TEL can claim a degree of popularity with scholarly readers. West (2016), for example, conducted an analysis of 20 educational technology journals and "consistently found theoretical/literature-based articles to be among the most cited in a journal" (p. 44). Is it not the case, a devil's advocate might ask, that such analyses rather undermine the whole notion that the TEL field does not engage with theory? Those arguments that I refer to as *interchange disputes*, however, emphasise that the prominence of particular theoretical papers does *not* alter the fact most empirical research in the field is under-theorised; instead, it furnishes a contention that discussions of theoretical and empirical concerns across the field largely occur in parallel (Bennett & Oliver, 2011; Jones & Czerniewicz, 2011; West, Ertmer and McKenney, 2020). The 'theoretical' strand of these parallel discussions, although far from inconsequential, is smaller in terms of the number of papers published, yet some sub-set of those papers goes on to attain an extraordinary level of scholarly citation; while the 'empirical' strand constitutes that far greater number of papers that continue, seemingly regardless, in their orientation towards more typical goals, such as 'best practice'.

In exploring the positions taken in such disputes, there is, it should be said, some danger of repeating aspects of what has been stated already, in section 3, about the poor state more generally, across the TEL field, of theoretical engagement. Unsurprisingly, for example, those comments that I shall categorise as contributing to these *interchange disputes* are typically preceded in the source material by

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10 Indeed, the extent to which discussion of this topic emphasis a *failure* to inform, in each direction, is such that in an earlier draft of this piece the label being used was 'detachment disputes'.

statements of regret about those same sorry circumstances. Furthermore, one common rhetorical aspect of *interchange disputes* involves rehearsing forms of apprehension about the implications, for the wider field, if authors of empirical papers persist in failing to engage with theory. When considering this issue, Jones and Czerniewicz (2011), for example, emphasise precisely that "empirical work that fails to engage with theory has a very limited ability to develop and inform the field" (p. 175). Such points are, in my view, entirely valid; but I shall not dwell on them here, since I assume that readers who have persevered this far will recognise them as a familiar component of discussions pertaining to the wider territory. Furthermore, and crucially, such statements constitute a common backdrop for, rather than distinct positions within, the source materials that underpin my analysis. In the account that follows I shall, instead, focus more narrowly on discerning those positions taken in relation to the fact that both theoretical and empirical discourses do exist in the field.

I shall distinguish between five such positions, which I shall refer to, in turn, using the monikers *researcher insularity*, *structural disincentive*, *empirical disengagement*, *theoretical widening*, and *research-practice theorisation*.

4.2.1 Researcher insularity

One position sometimes adopted in relation to these disputes might be called *researcher insularity*: a contention that those researchers engaged in empirical work do not exhibit sufficient aspiration for theoretical interchange. Such a position is advocated, for example, by Bulfin, Henderson and Johnson (2013), whose interpretation of the findings of their survey of TEL researchers, among other things, is that it "highlights a paucity of theoretical engagement (and perhaps *theoretical ambition*) among many respondents" (p. 344, emphasis added). They go on to unpack this point in the following way:

> It would appear that many respondents' notion of what constituted useful 'theory' often related to specific ideas, concepts and frameworks that would not be considered to be theoretically grounded or particularly theoretically sophisticated. Further thought and discussion need to take place regarding the apparent absence of *bona fide* 'theory' from the field. (*ibid.*, emphasis in original)

Such a stance, of course, is only marginally more specific than those discussions of the wider field that I outlined previously; indeed, I position it first in my exposition of *interchange disputes* partially because, in lacking dependence on other positions in those debates, it is relative simple to

take as a starting point. Yet adopting a position of *researcher insularity* does pose questions that will recur several times subsequently. What are the reasons for this state of affairs? And what normative judgements are being implied?

The *researcher insularity* position, as set forth above by Bulfin, Henderson and Johnson (2013), suggests two responses to such questions. One involves a transparently normative account of theories: with "specific ideas, concepts and frameworks" being counterposed to "*bona fide* 'theory'" on grounds that, while not explicitly stated, certainly imply some sort of canonisation of particular theories at the expense of others (cf. section 4.1).

Additionally, of course, a position of *researcher insularity* suggests, to some extent, a criticism of those researchers contributing to the 'empirical' strand of those parallel discussions identified at the outset of this section. While it might, in the abstract, be argued that the same people might contribute to the 'theoretical' and 'empirical' strands at different times (perhaps in different publications), that argument is not concretely found in the source materials. Instead, as Bulfin, Henderson and Johnson's text demonstrates, this position implies a focus on research*ers*, who are thereby implicitly categorised, as 'empirical-researchers' and 'theoretical-researchers', as playing relatively fixed roles within the field. Reeves, McKenney and Herrington (2011), for example, direct a critique at (empirical) researchers directly, by suggesting that most such researchers in the field are incapable of substantial theoretical work:

> This type of research [oriented towards "theoretical goals"] is relatively rare because it requires levels of synthesis, generalisation, and theory construction beyond the abilities of most researchers. (p. 59)

Yet, as this statement should make clear, from a critique of researchers it should not be taken to follow that opprobrium is always being directed at *individuals*; rather, the target is more typically empirical-researchers *in aggregate*, a category taken as a substantial sub-set of those active in the field (cf. "most researchers"). It also does not mean that empirical-researchers are being caricatured as wilfully difficult; indeed, given that, as Jones and Czerniewicz (2011) argue, the field as a whole exhibits a degree of uncertainty regarding how theory might be applied to empirical work, the *empirical insularity* of empirical-researchers might be understood as a rational response to uncertainty and perceived risk. Notwithstanding these various caveats, however, this empirical insularity stance has two key characteristics: (1) it positions 'theory' as something that already takes a set of legitimate ("*bona fide*") forms, and (2) it places the emphasis

of critique on empirical researchers *as researchers* (plural) for, on the whole, failing to engage with those legitimate forms. Such a stance, therefore, might lead most directly to support for those calls for the better education and training of researchers which, as I stated in section 3, are already reasonably prominent within the field.

4.2.2 Structural disincentive

Another position evident, in relation to *interchange disputes*, also accepts existing theory as largely legitimate, but fixes its locus of critique more widely than researchers *per se*. I shall refer to this stance as a position of *structural disincentive*, by which I intend to convey how it positions the lack of theoretical interchange as a consequence of the regimes within which TEL research operates. One particularly explicit example of such a position is provided by the work of Gunn and Steel (2012), whose arguments derive from their content analysis of the articles published in two journals, selected for their degree of influence in the field, over a period of five years. In relation to theoretical interchange, they make the following statement:

> Theory development is an organic process of exploration, discovery, confirmation (through cycles or iterations) and dissemination. The process needs to be theoretically grounded and support testing over time and in different contexts. According to our analysis, *timeframe in research design* remains problematic. Many studies continue to take a "snapshot at a point in time" to suit researchers' immediate aims and *funding body or other external requirements*. While these are valid parameters, they should not be the only ones. The *short-term nature of many inquiries* meant that few authors explicitly or adequately grounded their research in relevant theory and then attempted to reflect on or extend that theory based on their study findings. (Gunn & Steel, 2012, p. 9, emphases added)

Within that statement, of course, there is exhibited some evidence of a *researcher insularity* position (cf. "researchers' immediate aims"). Yet Gunn and Steel also direct a substantial portion of their critique at the wider context: namely, the timeframes within which research projects must be carried out, and the "external requirements" imposed on those projects. The point is that positions of *structural disincentive* might be viewed as building on those of *researcher insularity*, while widening the emphasis of critique.

We might strongly suspect—though, in Gunn and Steel's account, the point remains implicit—that those issues conceived using the terms 'project timeframes' and 'external

requirements' are related. Project timeframes, for example, might, in many cases, be determined by external requirements: via mechanisms such as funding periods (whether determined by 'academic' or 'policy' funders), line management oversight (for those projects arising within educational institutions), and reporting requirements (for both types of cases). Thus, we should not overlook that *structural disincentive* positions, even when directly articulating only a small number of issues that are, individually, ostensibly uncontroversial, actually suggest a rich nexus of overlapping influences in relation to *interchange disputes*.

Yet not all such stances restrict their formulations to such granular points. The contention, for example, that journal editors prefer to publish empirical papers, discussed in section 3 in relation to the field overall, could also be wielded as an example of structural disincentive; it could, though the point is not formulated in quite this way in the source materials, potentially be elaborated that researchers are thereby, given the publish-or-perish regimes of contemporary academia, discouraged from engaging with theory. "Increasingly", West, Ertmer and McKenney (2020) contend, "journal editors appear to privilege empirical work at the cost of theoretical and conceptual scholarship" (p. 594). Doing so seems a counterintuitive move for journal editors to make, since the higher citation counts of theoretical papers might well elevate the metrics (and thus the prestige) of their publication venues; yet it could be understood as a negative but predictable outcome of the prevailing moral economy in TEL[11] (section 3).

Other instances, of issues whose influence is understood as more diffuse and pernicious than 'project timeframes', however, are considered in the source material. Consider, for example, an editorial argument by Jones and Czerniewicz (2011), who consider the implications of the fact that the TEL field is, increasingly, urged to prioritise the research topic of "big data":

> In a world of big data the idea that theory is at best irrelevant and at worst counterproductive is extremely dangerous. In educational technology *the idea of learner analytics could easily be developed to suggest* that if we simply collect enough raw data on students then theory

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11 Given the wider territory of the field, as described earlier, it might also be understood as the rearguard action of a particular generation of TEL researchers; though for the purposes of the present argument I want to retain a focus on relations between scholarships (i.e., bodies of knowledge) rather than scholars (i.e., people). I especially wish to avoid a focus on individuals, even though it may well be tempting to view "journal editors" in that way.

will become irrelevant. Such a stance in relation to theory ignores all the known weakness of numerical data and the weaknesses of 'big data' in particular (see for example boyd and Crawford 2011). In a world in which there is a data flood in which new data sources impact on all the disciplines that learning technology draws on, a renewed engagement with theory will be essential to ensure that the data we collect for analysis is not garbage so that the answers derived from it are not just as poor. (p. 175, emphasis added)

Prima facie, the structural element of the critique suggested by such an argument might not be understood as directed at the field of TEL *per se*. Are these points, a devil's advocate might argue, not *really* about objects of inquiry like digital capitalism and Industry 4.0, and, in turn, the wider *societal* 'forms of consciousness' that are arising alongside developments of that nature? While such points do, in themselves, have a degree of legitimacy (their objects of critique are compelling), for present purposes the key issue does indeed concern the potential for impact on theoretical interchange in the TEL field (cf. "could easily be developed to suggest", in the above quotation). If one recalls the the historically problematic nature of how relationships between TEL research and wider societal developments have been characterised—via, as I characterised them in section 3, ideological 'moral imperatives'—it should be readily understood that researchers might encounter a strong disincentive to engage in theoretical work where particular topics are set up as high priority research objects whose wider conceptualisation within society is already dismissive of theoretical concerns. Furthermore, when juxtaposed against those same mechanisms we considered above in relation to the more granular concerns of timescale and external requirements—viz.: funding periods, line management oversight, reporting requirements—we can see that those disincentives are likely to be reinforced in ways that it is entirely legitimate to characterise as 'structural'.

4.2.3 Empirical disengagement

Hitherto, those stances that I have highlighted within these *interchange disputes* have either left the status of theory untroubled, or have served to valorise its current forms (cf. the comments, in section 4.2.1, about "*bona fide*" theory). In the subsequent sub-sections, by contrast, I will outline several stances whose critique faces, to some extent, in the opposite direction: namely, by seeking to position problems of theoretical interchange, in different ways, as a function of the current state of theory in the TEL field.

I shall refer to the first of these positions using the label

empirical disengagement, by which I mean to implicate a concern with the utility of current theoretical formulations for 'engaging' those researchers in the field who carry out empirical work.

Positions of *empirical disengagement* typically start out by emphasising that the lack of theoretical interchange in TEL research should not be understood one-sidedly; as *only* the fault of those researchers who, while undertaking empirical work, fail to engage with theory. Instead, it is suggested, we need to grasp the situation from the vantage point of those researchers, and thereby register that many theoretical discourses surrounding the TEL field are constructed in ways that are both (1) difficult for empirically-oriented researchers to use, and (2) inadequate for persuading those researchers of the benefits of theoretical engagement. Goodyear, Ellis and Marmot (2018) suggest that such issues are really about "fitness for purpose":

The problem has become something of a blind spot. We lack theoretical ideas, methods and modes of explanation that are fit for the purpose of constructing a research-based understanding of a range of fundamental, complex phenomena that are core to education. (p. 226)

Even *prima facie*, it seems unlikely that hard-pressed TEL researchers will incorporate theoretical concepts into their practice, unless they see them as useful for their actual research labour and relevant to their actual research objects[12]. *Empirical disengagement* positions, for this reason, typically start out by dwelling on the contention that theory in TEL, to a considerable extent, fails these tests of perceived usefulness and relevance. West, Ertmer and McKenney (2020), for example, set up their argument for such a position in the following way:

To advance the field, our theoretical scholarship must be more than simply reflective practice or editorializing opinions. We must be able to demonstrate how this kind of work is sufficiently rigorous to nourish research and practice. But what are the qualities of rigorous theoretical scholarship? (p. 594)

Thus, while the *empirical disengagement* position shares, with those of *researcher insularity* and *structural disincentive*,

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12 The fact that researchers might come to use theory to *challenge* their existing research objects, rather than merely pursuing them in slightly different ways (cf. Bligh & Flood, 2017), is likely to remain a moot point if present circumstances continue. In other words, I see addressing the issues described subsequently as a necessary prerequisite for such challenge to develop.

the notion of a mismatch between theory and the field, it differs in suggesting that, to some extent, it is theory that should be challenged to better match the requirements of empirical research in the field. We might, at the risk of oversimplification, contrast this position with the previous two in the following way: the *researcher insularity* position is concerned with the extent to which researchers are capable of meeting the requirements of theory; the *structural disincentive* position is concerned with the extent to which the structure of empirical work in the field allows researchers to meet the requirements of theory; and this *empirical disengagement* position is concerned, by contrast, with the extent to which theory meets the requirements of researchers and the structure of empirical work in the field. For West, Ertmer, and McKenney (*ibid.*), theory that does meet these latter requirements can be given the moniker *rigorous theoretical scholarship* (p. 594). The latter is subsequently characterised in their argument in the following way:

> First, theoretical work must be original; it must contribute new ideas to the academic discourse by providing original synthesis, applications to practice, methodological development, or wholly new conceptual understandings about the variables and influences related to teaching and learning. Second, theoretical scholarship must be useful, particularly in a discipline such as ours in which scholars see themselves as educational design researchers, seeking to influence local practice as much as create knowledge that can advance the work of others (McKenney and Reeves 2019). (*ibid.*, pp. 594-595)

That such statements advocate particular 'roles' for theory highlights a link between this position and those wider points of debate that I shall refer to, in a subsequent section, as *functions disputes* (section 4.3). Yet the more pertinent aspects of this position, for present purposes, are those related to what I have, above, called the requirements of researchers and the structure of empirical work in the field. Where this position is put forward concretely, however, it would be remiss to caricature it as inadvertently assuming that the latter requirements and structure are static (and it is for this reason that the preceding paragraphs are, where researchers and the field are implicated, littered with caveats of the form "to some extent", "start out by", and "at the risk of oversimplification"). Adopting an *empirical disengagement* position typically indicates, on the contrary, a desire to interconnect with empirical researchers and thereby, to some extent, to challenge aspects of the wider field. In this sense, *theoretical fitness* positions attempt more than simply reversing the polarity of *researcher insularity* and *structural disincentive*.

From this desire it follows that, for those critical scholars who wish to promote better theoretical interchange, the challenge posed by *empirical disengagement* positions involves an element of persuasion, with a particular yardstick of success being proffered: namely, the extent to which the field *comes to* treat empirical and theoretical work as "integral parts of the same endeavour" (Bennett & Oliver, 2011, p. 180). In turn, there is a need to suggest means by which such a yardstick might be pursued, with West, Ertmer, and McKenney (2020) discussing these means of persuasion and challenge using the metaphors of *provocation* and *guidance*, as in the following text:

> As Whetten (1989) explained, such scholarship not only identifies the variables involved in a research agenda, but also explains, contextualizes, and critically analyzes the relationships between these variables. We need this kind of theoretical work to *provoke robust empirical scholarship* and *guide quality design and practice*. (p. 594, emphases added)

An *empirical disengagement* stance, then, broadly involves addressing the relations between theoretical and empirical scholarship. While examples of the position put forward a nexus of overlapping points, a consistent object is the reformulation of theoretical scholarship, which needs to 'provoke' and 'guide' empirical forms of work in the field by being 'useful' and 'original'—with the overarching outcome sought being the production of 'robust' empirical work and 'quality' educational design. Presumably, when considering more granular issues of process, those goals concerned with theoretical scholarship will be pursued, in part, via more specific forms of advocacy within theoretical papers themselves; and we might be able to judge our success by determining the extent to which both empirical and theoretical researchers in the field come to treat their respective work as integrated. One appropriate object for such advocacy, as evidenced in the preceding quotation, appears to be the field's *research agendas*, which are thereby positioned as a boundary object between theoretical and empirical scholarship.

4.2.4 Theoretical widening

We now turn to consider two distinct stances within *interchange disputes* which, in turn, address the different practices of 'researchers' and 'practitioners'. I shall refer to these positions, respectively, as *theoretical widening* and *research-practice theorisation*. In common with the *theoretical fitness* stance, advocates of both of these positions suggest that we need to understand problems of theoretical interchange in TEL as arising, at least in part, from the ways in which theory has historically been constituted within the

field. By contrast with that position, however, our attention is not drawn to a distinction between 'empirical' and 'theoretical' research, but rather to the relationship between 'research' and 'practice'.

At heart, the position of *theoretical widening* is a claim that TEL researchers can, by making use of theoretical approaches that are more descriptive of actual practice, better influence that practice. *Theoretical widening*, therefore, sits in close relation to several other positions considered elsewhere in this analysis. On the one hand, in recognising that a narrow emphasis on 'learning' is negatively constraining the influence of research on practice, *theoretical widening* builds on those *canon disputes* analysed earlier, in section 4.1. On the other, in debating whether the attendant 'theoretical approaches that are more descriptive of actual practice' should be developed within the field or draw on outside influences, *theoretical widening* positions reproduce aspects of those *exceptionalism disputes* that I shall consider in section 4.4.

A well-known example of work that adopts a position of *theoretical widening* is that of Dillenbourg (e.g., 2013). The underlying idea of this argument, developed over some time, is called 'classroom orchestration'; though it has sometimes, in turn, come to be generalised by other authors and discussed simply as 'orchestration'[13]. As we shall unpack below, Dillenbourg's argument, in counterposing learning against a range of other counterbalanced issues, corresponds to a *canon juxtaposition* position (cf. section 4.1.5); while, in seeking to further the development of theory from labour within the field, rather than working from outside influences, it corresponds to a *phenomenal distinctiveness* position within the *exceptionalism disputes* (cf. section 4.4.1). Dillenbourg's work serves as a useful example of *theoretical widening*, since its argument is explicit and contained, and because it has been widely influential in the TEL field[14]. We should be clear from the outset, however, that, in relation to the *canon* and *exceptionalism* disputes, not all positions of

13 Dillenbourg, in turn, has come to be a critic of the use of the term 'orchestration', and seems to regret choosing that particular label for their metaphor, though they continue to propound the underlying ideas. In the present analysis, however, it will be sufficient to consider Dillenbourg's own argument in relation to 'classroom orchestration', since doing so can amply illustrate those *theoretical widening* positions that I seek to emphasise in the section.

14 The EU STELLAR project, which, as I noted above, was pivotal in developing the identity of "Technology Enhanced Learning" in Europe, positioned *orchestration* as one of three core concepts for the field, alongside *connection* and *context* (cf. Sutherland, Joubert, & Eagle, 2012).

theoretical widening are instantiated in these ways.

Dillenbourg (2013) commences their argument by setting up the importance of research-practice considerations in a particular way: namely, by observing that there is, among researchers, a common sense of "frustration" about the limited extent to which those projects on which they work come to influence practice, in broad and sustained ways, within institutions. Dillenbourg advocates, in turn, that such frustrations should be used to stimulate a conceptual, rather than vituperative, response:

> Instead of blaming teachers and institutions, it makes sense to ask if is there something about the technology we develop that discourages its usage? (p. 485)

Dillenbourg's approach to pursuing this line of inquiry involves reflecting on a range of projects, conducted over a number of years, and trying to conceptualise those key issues that "emerged through frequent interactions with teachers while designing activities and from experiments in which these activities were, as often as possible, conducted by the teachers" (p. 490). In this way, Dillenbourg turns the *experiences of researchers working with teachers* into a particular object for *analysis by researchers*.

Out of this analysis, Dillenbourg proposes that researchers typically emphasise the design of "learning scenarios", while teachers have a wider emphasis on what gets termed as "classroom life":

> Designing effective learning scenarios is and will remain a priority. However, classroom life is populated by activities or events that are not part of the scenario, such as collecting response sheets. There is indeed a continuum of activities from those intrinsic to the scenario to activities extrinsic to learning. (p. 485)

Dillenbourg's subsequent argument, as the above quotation already implies, proposes that classroom life needs to be conceptualised as encompassing a "continuum of activities" (p. 485), which are labelled, in turn: (1) core activities, (2) emergent activities, (3) envelope activities, (4) extraneous events and (5) infra activities (pp. 485-486). The key point, for present purposes, is not so much the precise meanings of these terms, but rather that Dillenbourg regards the continuum as moving "from the center to the periphery". In other words, Dillenbourg regards categories 1 and 2 as "intrinsic" to learning scenarios, and thereby relatively well understood by researchers using predominant conceptualisations from the research literature. By contrast, Dillenbourg regards categories 3-5 as "extrinsic"; thereby, it suggested, those

categories are, typically, not accommodated by TEL researchers when producing intervention designs. For Dillenbourg, therefore, if their designs are to successfully grapple with the wider aspects of classroom life, then researchers need access to extra knowledge: over and above that focussed on learning scenarios.

Dillenbourg (2013) conceptualises classroom orchestration as an intellectual project that aims to "retroactively extract [some 'commonalities' of the experiences of researchers working with teachers] as design principles" (p. 490). Those particular design principles highlighted by Dillenbourg's work are concerned, primarily—and perhaps unsurprisingly, given the object of analysis from which they are derived—with supporting better relationships between technology and teachers. Dillenbourg suggests, for example, that instructional technologies need to be designed in ways which:

- *enable* teachers to undertake the full continuum of activities that constitute classroom life;

- allow teachers to *monitor* classroom life via the provision of "simple indicators"; and

- provide for *adaptation* of activities in real-time, such as by "adding or skipping exercises or examples, changing the difficulty level, etc." (pp. 488-489).

To concretely illustrate their arguments—those concerned with both the continuum of activities and the design principles thence derived—Dillenbourg considers a range of examples of classroom technology in use. Four of those examples (concerning, in turn, *ConceptGrid*, *ArgueGraph*, *Lantern*, and *TinkerLamp*) draw on experiences with the classroom deployment of technology designs developed and trialled by Dillenbourg and colleagues over preceding years; while a fifth, which analyses the use of *paper*, considers a very longstanding classroom technology in widespread use. Paper is argued to have 'affordances' that are substantially different from those of most technologies designed by TEL researchers; and the fact that it has been successful as a technology—in that it has been in widespread use in educational settings over a long period of time—is set up as a salutary lesson for TEL researchers.

Dillenbourg concludes their argument by suggesting that the design principles, as they are currently constituted, "do not *yet* constitute a theory […]" (p. 491, emphasis added). However, it is suggested that the outlines of such a theory, which might be constructed in the future, can already be discerned from those principles established in the paper. Some of the more important contours of that theory, it is suggested (p. 491), are that it will likely involve emphasising

(1) the empowerment of teachers "as drivers of classroom activities", (2) the importance of supporting flows of information between different technologies (whether digital or otherwise), and (3) the valorisation of digital minimalism (wherein particular technologies have "simple effects" rather than being "'intelligent' in the AI sense").

There are, of course, a number of peculiarities with Dillenbourg's arguments, over and above those mentioned at the outset of this section. That Dillenbourg positions the primary work of TEL researchers as 'technology design' is one such idiosyncrasy—while that emphasis is legitimate, it emerges from particular geographical and disciplinary traditions within the field, and is not shared by all TEL scholars. For present purposes, however, the key point is that Dillenbourg's argument places emphasis mainly on developing the knowledge of researchers. Indeed, in addition to the explicit advocacy for the development of what I am calling 'widened' theory, that latter emphasis is visible, in ways that are telling, across Dillenbourg's argumentation, in at least three places. Firstly, the starting point for conceptualising knowledge, which conceives the 'continuum of activities' as moving "from the center to the periphery", actually serves to position those aspects of classroom life historically emphasised by researchers at the "center", with others (those mainly recognised by teachers) positioned at the "periphery"; such an argumentational move seems calibrated for its appeal to a researcher audience. Secondly, the 'widened' analysis of classroom life at the centre of the orchestration metaphor is positioned as a task to be carried out *by* researchers. And furthermore, as Dillenbourg's argument makes clear, the ultimate aim of their argument is to produce a framework that can be used by researchers, in their role as technology designers, to *better influence* actual practice with the designs they produce.

It is this valoriation of research knowledge that differentiates this position of theoretical widening from the next, which I shall call *research-practice theorisation*.

4.2.5 Research-practice theorisation

The final stance that I wish to consider, in relation to *interchange disputes*, shares with the *empirical disengagement* and *theoretical widening* positions an emphasis on problematising theoretical knowledge; it also shares, with the latter in particular, an emphasis on the distinction between 'research' and 'practice'. Yet the position I consider in the present section differs, from those preceding stances, in insisting on understanding (1) the different practices of 'researchers' and 'practitioners', and thus (2) the different forms of knowledge that are mobilised in support of those practices. This stance,

which I shall refer to as *research-practice theorisation*, thus prioritises the theorisation of these different forms of practice[15] and knowledge which, it is suggested, is a necessary pre-requisite if they are to come to influence each other. To my mind, such views invite the TEL field to belatedly valorise what has long been denoted, in other fields, as *praxis*: the generation and refinement of practical-theoretical concepts through ongoing attempts to change the world.

One particularly sophisticated example of what I label a *research-practice theorisation* stance is provided by Goodyear and colleagues (notably Markauskaite), who, over some time, have laboured to problematise these different practices by deploying and developing the concepts of 'actionable knowledge' and 'knowledgeable action' (cf. Markauskaite, Goodyear, & Sutherland, in press). Goodyear et al. (2018) set out the starting point for their stance in the following way:

> One approach to this conundrum involves becoming more sophisticated about the forms of knowledge and ways of knowing that are most closely associated with the main kinds of practice in the area concerned. […] The forms of evidence and reasoning used in resolving a design are not identical to those involved in understanding students' learning experiences, or the forces shaping them. Many areas of complex practical work have well-articulated epistemic architectures: there is a working consensus about the kinds of knowledge that are most relevant to each major phase in a process. This does not rule out innovation or obviate all arguments. But it does provide a shared framework on which new ideas can be hung and it allows researchers to see *how* they

can empower practitioners, should they wish to do so. (p. 222, emphasis in original).

The emphasis placed, in the above passage, on conceptual working across epistemic architectures diverges, to a considerable extent, from many of those other stances on theory in TEL scholarship outlined in the present analysis (cf., for example, the obvious prioritisation of researcher knowledge even in stances of *theoretical widening*; section 4.2.4). *Prima facie*, that such points are rarely emphasised might be considered surprising. We might recall, for example, that how researchers and practitioners sometimes seem obliged to communicate—often, as discussed in section 3, via the use, within an overarching framework sometimes disparaged as *folk pedagogy*, of what Drumm (2019) calls "clichés" and "simplified maxims"—is a key source of frustration for many scholars within the field. Might not such communication be conceptualised as a nascent attempt to work across epistemic architectures; and then, in turn, problematised as a basis for such labour that is somehow inadequate?

In fact, however, Goodyear et al.'s (2018) starting point for understanding this inability to communicate focusses not so much on scholars' attempts to simplify inappropriately, but instead on their common *reluctance* to engage in simplification. Goodyear et al.'s critique, for example, characterise the kinds of knowledge that researchers routinely produce in the following way (*ibid.*):

> […] many educational researchers are allergic to the formulation of actionable knowledge. They value the addition of nuance in the interpretation of what exists more highly than they value the paring back of detail that is a prerequisite for thoughtful action. Of course, we do not mean that this is universally true. But it is sufficiently powerful in shaping perceptions of the field of educational research that outsiders often struggle to find the knowledge they can use. (p. 222)

While several explanations might be offered for this particularity of emphasis, those most pertinent for present purposes concern the professional and disciplinary heterogeneity of those researchers working in the field, and the different nexūs of power relations into which they enter as a consequence.

The work of Goodyear and Markauskaite seemingly assumes, in particular, that those researchers being addressed are "educational researchers" and implies, moreover, that such researchers are either (a) more powerful than or (b) have no formalised professional obligation to, those practitioner stakeholders with whom they interact. Such assump-

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15 I am perfectly aware that asking readers to distinguish between the 'practices of researchers' and the 'practices of practitioners' is an awkward formulation of language. The issue arises because identities such as 'researchers', 'scholars', 'practitioners' and others are socially produced, validated and labelled; and furthermore, because, particularly in some strands of educational research, the term 'practitioner' has become used quite prominently as a polite synonym for 'teacher', in the context of a 'learner-centred' downplaying of 'teaching'. Yet it is perfectly acceptable, from my vantage point, to observe that all are engaged in practice; they are simply engaged in different kinds of practice. Such relations are further complicated by the social production within the TEL field of "researcher-practitioners", as discussed earlier, and also by the fact that many PhD students in TEL are also experienced 'practitioners'. A PhD student in TEL, for example, might often be someone who has an established professional career (and thus has a degree of expertise in particular practices), who is now is engaged in *learning the practices of scholarship* within TEL as a research field.

tions may well hold in particular circumstances—such as, of course, those considered by Markauskaite, Goodyear, & Sutherland (in press), in which a group of academic scholars works with pre-service teachers, in a project resourced via a research council grant, to develop multimodal approaches to the teaching of scientific inquiry. Under such circumstances, any engagement by researchers in conceptual work across epistemic architectures might certainly appear to be an intellectual choice: driven by the personal values and commitments of the researchers involved. Yet such assumptions may be less safe in other contexts, especially since (as noted in section 3) many TEL researchers are *not* located disciplinarily as 'educational researchers', and especially in places where a significant proportion occupy interprofessional and interdisciplinary positions of considerable fragility. An example of the latter circumstances, of course, is provided by the latterly cited work of Drumm (2019), wherein educational developers work alongside disciplinary academics, as 'practitioner-researchers', within projects whose mandate often comes from institutions, rather than funding councils. In such cases, conceptual work across epistemic architectures is quotidian, albeit in highly problematic and policed ways, and those overly contemplative forms of knowledge production that Goodyear et al. deride are less likely to predominate in already-existing practice.

My purpose, in drawing attention to these matters, is not to imply that the argument of Goodyear and colleagues is invalid. On the contrary, I contend that their work makes a distinctive and valuable contribution to what I characterise as *interchange disputes*. Instead, my wish is to draw attention to the dangers of TEL researchers 'idealising' particular forms of knowledge production that exist elsewhere within the field. Drumm's hard-pressed practitioner-researchers, for example, might be tempted to look at Goodyear's "educational researchers" with considerable envy, imagining them as harbingers of a more *bona fide* strand of TEL research, and hence overlooking those attenuated forms of knowledge they often generate; while it is also too easy to romanticise practitioner-research in ways that overlook its frequent concessions to power, conceptual *over*simplifications and scholarly parochiality. In my view, a successful basis for *research-practice theorisation* needs to differentiate between the roles played by different researchers in relation to scholarly knowledge objects, just as it also—as Goodyear et al.'s argument, as elaborated below, already suggests—needs to account for the different roles of a range of other decision-making and 'user' stakeholders. In turn, acknowledging these heterogenous starting points implies, if we take seriously the notion that changes in practices arise out of attempts to overcome those real dilemmas that people face in their historically constituted activities, confronting the fact

that the avenues 'towards' what are here being positioned as more attractive forms of knowledge production will also likely be highly varied. In principle, of course, such observations could have been wielded in relation to several other stances within the *interchange disputes* considered above; yet the reason for raising them here is because it is this stance of *research-practice theorisation* that most directly identifies an imperative towards *changing* the practices of knowledge production, which thereby places a particular onus on these issues. Those caveats aside, it is worth dwelling in some detail on the stance of Goodyear and colleagues, since it constitutes perhaps the single most theoretically sophisticated attempt to deal with those *interchange disputes* arising in the literature on TEL.

Fundamentally, Goodyear et al. (2018) advocates that a core departure point, if we are to overcome problems of interchange between research and practice, is that we aim to construct, in relation to some particular knowledge domain, what is termed an "actionable knowledge base" (p. 223). For such a construct to be regarded as actionable it must both accommodate, and differentiate between, knowledge that addresses the following four distinctions (pp. 223-231):

- *the roles of those involved*: since different stakeholders have disparate purposes for relating to the research object, it is argued, they also have different knowledge needs; Goodyear et al. distinguish usefully between stakeholders such as "designers, managers, teacher-users and student-users" (p. 223), though of course my preceding frame for this narrative also invites supplementary distinctions between those "researcher stakeholders" whose purposes and knowledge needs might also diverge in important ways;

- *analysis and design*: while analytical knowledge, it is argued, emphasises the understanding of existing situations, and thereby invites the description, explanation and/or identification of causal relationships between entities, within methodologically bounded units of analysis, design knowledge, by contrast, emphasises the ability to represent what is desirable, and to resource choices between different candidate solutions; to some extent, this distinction implicates what I shall later label *functions disputes* (section 4.3), but, for present purposes, the key points are that analysis and design are conceived in this account as practices which, while depending on each other in complex ways, are actually very different, and hence it is posited that quite distinct forms of knowledge will be useful in relation to each;

- *fast and slow cognition*: the distinction 'slow cognition' concerns those deliberative processes,

such as reflection, where relatively explicit forms of knowledge are likely to be useful, whereas 'fast cognition' refers to those more routinised forms of sense-making that are likely to draw on prior experience and tacit knowledge; Goodyear et al. emphasise, in particular, that this distinction should not be confused with that between analysis and design—designing a task specification, for example, might deliberately seek to provoke slow cognition in students, whereas designing a classroom learning space might involve activating forms of fast cognition that enable students to make sense of how that particular space is supposed to be used;

- *ontology and epistemology*: Goodyear et al. highlight a range of ontological and epistemological issues, some of which will be examined in more detail below in relation to *functions disputes* (section 4.3); however, for present purposes the most pertinent distinctions are concerned with (1) acknowledging knowledge constraint and dependency, since making commitments to producing certain forms of knowledge serves to constrain, for better or worse, those forms of knowledge production that are subsequently undertaken, and (2) identifying 'connecting constructs' that can help to meaningfully combine ostensibly very different forms of knowledge; though Goodyear et al. do not use the term directly, this latter emphasis implicitly disparages those way in which different forms of knowledge are often positioned as entirely 'incommensurable' within research discourse, suggesting instead a need for actively seeking to make connections between different forms of knowledge.

It is important to emphasise that the construction of 'actionable knowledge bases', which is positioned as a form of epistemological work, is only one part of Goodyear and Markauskaite's response to the challenge of research-practice interchange. As I alluded to above, developing the 'conceptual resourcefulness' of practitioners also forms part of this picture, with Markauskaite, Goodyear, & Sutherland (in press) providing a worked example of how such resourcefulness was developed within research collaboration with pre-service teachers. Such issues of what might be called boundary-crossing, or relational working, have also been considered through alternative frameworks, including by myself, in ways that could easily be rendered applicable to the contours of the detachment dispute. Hasted and Bligh (2020), for example, suggest—in a way directly inspired by earlier work in the activity theory tradition, and particularly by the work of Anne Edwards—that the key problems requiring consideration are the extent to which the motives of those involved are mediated (via 'common knowledge'),

the object of activity is jointly interpreted (via 'relational expertise'), and those involved can succeed in aligning their unfolding practices (via 'relational agency') (p. 3).

Attempts, of these differing natures, to examine relationships between both the practices and knowledge architectures of researchers and practitioners, and thus to consider how to make connections between them, constitute a very distinct contribution to interchange disputes in TEL. Among other things, stances of *research-practice theorisation* suggest, that in problematising theory, we also problematise our knowledge production practices—or, in other words, that the field's 'theoretical' and 'empirical' work will each need to change in tandem.

4.2.6 Synopsis of interchange disputes

A synopsis of *interchange disputes* is provided in Figure 2. In many ways, the format of the diagram is the same as for the preceding figure: the largest node, "interchange disputes", is located centrally, while the other nodes are positioned as relative to that central locus. The core question, as the analysis, above, has sought to make clear, relates to the relationship between theoretical and empirical work in the field; and, more especially, to a concern that, at present, such work is compartmentalised into relatively separate discourses.

The structure of the diagram, once again, represents each of those stances that have been discussed in this section. It is worth re-iterating the point that the short summaries of each position, provided in the diagram, are simplified considerably by comparison with their analysis in the above text. For a fuller discussion, the reader should refer to the respective sections, above, for a more nuanced analysis of *researcher insularity* (section 4.2.1), *structural disincentive* (4.2.2), *empirical disengagement* (4.2.3), *theoretical widening* (4.2.4), and *research-practice theorisation* (4.2.5).

The core purpose of the diagram is to highlight relationships between the various positions in a way that can sometimes be obscured when considering the detail of each position in isolation. One way in which this is accomplished, in this case, is by differentiating between those positions which primarily concern themselves with problematising empirical work and those that, conversely, seek to problematise the theoretical. The labels at the top of Figure 2 are intended to indicate that those nodes positioned on the left of the diagram (namely, *researcher insularity* and *structural disincentive*) explore interchange disputes by considering why empirical researchers do not make more extensive use of theory, while those on the right (*empirical disengagement*

Figure 2. Synopsis of *interchange disputes*
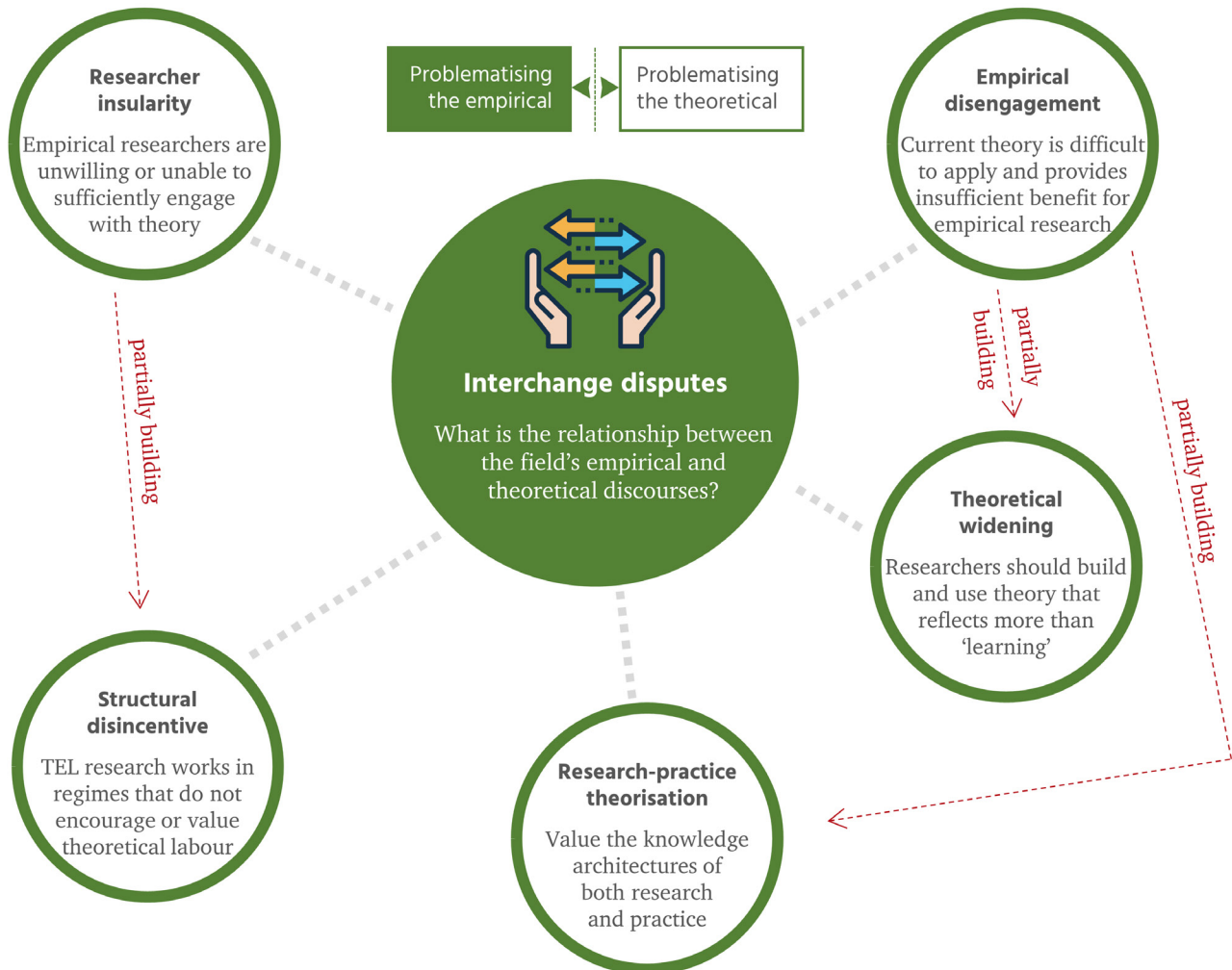
and *theoretical widening*) foreground that theory, at least as currently constituted, is unsuitable for use within empirical research. The stance of *research-practice theorisation* is oriented primarily towards the latter concern, but also highlights implications that are intended to destabilise empirical knowledge production, and so it is positioned accordingly on the diagram.

Three relationships between different pairs of nodes are highlighted on the diagram with the label "partially building". That label is intended to imply a strong relationship between those positions, as they are constructed in the source materials; it is difficult to find, for example, an example of a *structural disincentive* position that does not invoke *researcher insularity* as a precursor, with the latter typically wielded to suggest the importance of understanding the former. Yet the relationship is not so argumentationally dependent as those highlighted in Figure 1. To reprise the same example,

one could certainly make a coherent argument in favour of a *structural disincentive* position, oriented towards *interchange disputes*, without stating a *researcher insularity* position. It is also worth highlighting that, unlike for Figure 1, there are no relationships labelled "opposed" in Figure 2, since none of the positions illustrated are mutually exclusive. To make the same point in a more general way, while the fact that the different stances foreground the problematisation of 'the empirical' and 'the theoretical' certainly indicates a difference of emphasis, those imperatives are not incompatible. One could argue, perfectly coherently, for example, in favour of both *researcher insularity* and *empirical disengagement* stances in the same piece of writing, and draw out how each relates to the other.

Considering the relationship between 'empirical' and 'theoretical' discourses in this way does, of course, pose questions about the roles that theory might play within

research. How particular theories might mediate between these discourses is the issue to which I turn in the next section.

4.3 Functions disputes

By *functions disputes*, I refer to those discussions which concur that better use of theory is desirable—highlighting, for example, that better use can serve to develop the field (de Laat & Lally, 2004) and forge links with other proximate fields (Bennett & Oliver, 2011)—yet which project different conceptions of what that "better use" might entail. *Functions disputes* thus encompass discussions of the 'roles' that theory plays (and might play) in research, as well as attempts to differentiate between different 'forms' of theory, which are positioned as having different relationships with (and roles within) research practice.

While there do exist occasional statements within the literature about the relative importance of different roles (such as 'prediction') as necessary prerequisites for defining something as a theory, such points mostly end up briefly rehearsing long ossified debates from across the social sciences; indeed, they usually take the form of throwaway sentences backed up by one or more citations to papers from outside the field. Where such instances occur, I shall not dwell on them in the analysis that follows, for a number of reasons. In particular, such reasons include that those points are positioned marginally within the debates themselves; that the attendant debates have been described perfectly adequately elsewhere (e.g., by Maxwell & Mittapalli, 2008); and that I have already subjected to analysis, under the heading of *canon disputes*, those more substantial debates about the constructs that are actually taken as theories within the field. Instead, issues of theory definition will only be raised where they are underlined centrally within the source material, and where they are positioned as consequential for research practice in TEL.

In the account that follows, I wish to emphasise the co-existence of three clusters of narratives whose content bears more direct relevance to research practice in the TEL field, yet whose objects have rather different levels of granularity. Such stances foreground, in turn, the functions of theory within particular research projects; the different forms that theory takes in such projects; the notion that researchers' choice of theory can make the field seem more relevant to its stakeholders; and the roles of theory in advancing the research field, or particular sub-fields within it. I shall refer to those positions, in turn, using the labels *role strengthening*, *mode distinguishing*, *field pertinence*, and *field development*.

4.3.1 Role strengthening

The first cluster of stances that I shall consider seeks, firstly, to problematise the roles that theory plays within particular research projects (or, sometimes, articles arising from projects) and, secondly, to advocate that, when working on particular projects and articles, researchers should acknowledge and reflect the importance of a wider range of those roles. In the present analysis, I shall refer to such positions as *role strengthening*. Such stances, in substance, resonate to a considerable extent with discussions of a topic which, in other fields, is often referred to as 'theory-method relations' (cf. Ashwin & Case, 2012).

Much useful critique has focussed on problematising the roles of theory within the TEL field. For example, Jones and Czerniewicz (2011), drawing on earlier work by the realist scholar Andrew Sayer, highlight that "theory" is often taken as relating "the empirical and the conceptual" via three "dimensions"—concerned, respectively, with (1) ordering, (2) conceptualisation, and (3) hypothesis or explanation (p. 174).

That 'theory' is here projected as a singular category, rather than being pluralised and thus particularised, I regard, in this case, as an idiosyncrasy of expression rather than a core matter of argument; and I also shall not dwell, in this instance, on the structure of Sayer's underlying categorisation, wherein "hypothesis" and "explanation" are regarded as part of the same theoretical "dimension". It is certainly possible to conceive the particular functions of theory in empirical work in alternative ways. Indeed, I have presented such an alternate categorisation schema myself (Bligh & Flood, 2017), in which I draw on the ideas of Martyn Hammersley to suggest that theory can play the following roles (outlined, with examples, on pp. 132-133):

- *Abstracting*: Categorising phenomena by highlighting and/or discarding particular detail;

- *Explanatory*: Providing names for concepts taken to underpin some phenomenon;

- *Contextualising*: Positioning phenomena within some wider spatio-temporal totality;

- *Paradigmatic*: Establishing a paradigm for investigation;

- *Hypothetical*: Providing speculative idealisation whose validity is to be tested;

- *Normative*: Ascribing value to, or indicating ideal, forms of phenomena;

- *Predictive*: Asserting causality or forecasting outcomes.

These caveats aside, the argument of Jones and Czernie-wicz (2011) does encompass both elements that I regard as the core indicators of a *role strengthening* stance. First, some attempt is made to distinguish between the different functions of theory, in this case via the metaphor, outlined above, of "dimensions". That move to distinguish between different roles is seen as important in itself, but it also serves a broader purpose: to set up the stance's second element. That second element, in turn, is an argument that focussing too narrowly on particular theoretical roles, to the neglect of others, has negative consequences for research projects. Jones and Czerniewicz (*ibid.*), once again drawing on the work of Sayer, instantiate their version of that point in the following way:

> Sayer criticises the ordering framework (1) and hy-pothesis and explanatory views of theory (3) for their failure to deal with the indirect nature of our knowledge of the world. In his view conceptualisation lies at the heart of observation, a point of contact made famous in Einstein's comment that it is theory that decides what we observe. Data is not neutral, its very selection indicates a theoretical perspective. Data does not produce facts that are direct reflections of the world, rather facts about the world, like theory, are constructs of human cultural engagement with the world and are never direct. In our view theory can generalise across a variety of contexts and across time and at its best can compress experience into robust, considered and usable forms. (pp. 174-175)

The above argument, among other things, highlights how focussing on only particular roles (in this case, the first and third of Sayer's "dimensions") leads to an inability to interrogate the nature of data. On the contrary, we are led to take data for granted. That is an important point, and one commonly made, albeit in different ways, where *role strengthening* stances are deployed[16]. Indeed, other examples of role strengthening stances seem to construct their entire argument around highlighting that theory must be con-cerned with more than data analysis.

The work of Antonenko (2015) furnishes one such example. In adopting what they call an "instrumental view" of theory, by which is meant a thought system based on the work of John Dewey, Antonenko seems to accept a world-view broadly compatible, for present purposes, with the 'realism' underpinning the argument of Jones and Czernie-wicz. Yet Antonenko's narrative elaborates a considerably

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16 Indeed, something like *role strengthening beyond data* would be a good descriptor for this category of argumentation, which I avoid only because I find it too unwieldy for repeated use as a signifier.

more complex structure, the purpose of which seems to be to *define* for researchers the use of 'theory'—by suggesting an alternate construct that is not seen as related to "data", but instead to "enquiry". To do so, in a move which, to a large extent, reflects those *mode distinguishing* positions I shall outline below, Antonenko first works to differentiate "theories" from "conceptual frameworks", and suggests that research projects and papers are conceived more properly in relation to the latter. Next, and importantly, Antonenko provides a definition for "conceptual framework": as "*a process and a product for organizing and aligning all aspects of empirical enquiry*" (pp. 54-55, emphasis in original).

By formulating the definition of conceptual framework in that way, of course, Antonkenko has set themselves the task, among other things, of elaborating further the notion of "aspects of empirical enquiry". On that basis, Antonenko (2015) concludes that conceptual frameworks have five key functions:

> to justify the significance of the problem, define relevant concepts, establish theoretical and empirical rationale, guide selection of appropriate of the methods, and scaffold data analysis and interpretation (p. 57)

Such arguments dovetail, in part, with some of my own prior work, where I came to argue that it was important to consider how "theory might frame research design rather than simply data analysis" (Bligh & Flood, 2017, p. 125). In the latter paper, the direct emphasis of critique was not so much on problematising the nature of data as on concep-tualising the research object. I highlighted how a particular theory—activity theory—was often, in a data set of empirical papers, being used to contextualise some given research object and to highlight some particularly important aspects; yet that it was seldom used to challenge the research object itself. In different ways, therefore, the various *role strengthening* stances discussed in this section all position the function of conceptualisation as a particularly important role that researchers cannot afford to neglect.

4.3.2 Mode distinguishing

Antonenko's (2015) distinction between "theories" and "conceptual frameworks", outlined in the preceding section, also hints at another position within what I characterise as *functions disputes*: the argument that, if researchers are to make sense of those different roles that might be played by theory, then different conceptions of 'theory' itself need to be disaggregated. I shall refer to this stance as one of *mode dis-tinguishing*, by which I mean to express the idea that 'theory' occurs in a range of disparate forms, each of which we must

understand as relating differently to research practices.

The emphasis placed by Antonenko (2015) on the importance of different theoretical 'modes' can be grasped by expanding, very slightly, the bounds used to demarcate a quotation already reproduced once before (in relation to *role strengthening*), so that the definition of "conceptual framework" becomes rendered as follows:

> *a theory-based and evidence-driven argument that is developed to* justify the significance of the problem, define relevant concepts, establish theoretical and empirical rationale, guide selection of appropriate of the methods, and scaffold data analysis and interpretation (p. 57, emphasis added)

In this way, Antonenko places a particular emphasis on how researchers within particular projects *actively* frame particular problems; indeed, they regard the very distinction between 'theoretical frameworks' and 'conceptual frameworks' as one in which the former references constructs that "have emerged from prior empirical work" while the latter points towards those that are "custom designed by researchers" (*ibid.*). While I take issue with Antonenko's concrete statement that theoretical frameworks must always have "emerged from" work regarded as, in particular, as *empirical*—a formulation that, in my view, concedes too much to narrow empiricism, thereby undervaluing that 'conceptualising' dimension of theory whose importance, emphasised by Jones and Czerniewicz, was discussed in the preceding section—the notion that we need to distinguish between theory as something *inherited from* previous projects and *constructed within* present ones highlights, nonetheless, a fundamentally important point. Indeed, elsewhere I have previously argued in favour of a similar distinction: sketching, for an audience of early career researchers, the urgent need to construct specific instantiations of theory, within the context of a particular research project, from within that broader tapestry of stances to which those researchers engaged in the project are committed (cf. Bligh, 2020).

That my narrative raises, on that occasion, the important distinction as one between "theories" (labelling the inherited) and "theoretical frameworks" (the presently constructed) is, of course, inconsistent with Antonenko's terminology. My argumentation highlights not so much a distinction between conceptual and theoretical frameworks, but rather one between 'theories' and 'frameworks'. More specifically, I place emphasis, in that resource (Bligh, 2020), on thinking of the word "framework" by analogy with those literal painting frames—usually grids built out of wood and wire—used to support the introduction of perspective into

art several centuries ago; the purpose of doing so being to emphasise that frameworks, while arising within a wider conceptual constellation, are specific tools that must be simple enough to use, and also that they are used consciously, with consequences both positive and negative. That the terminology of Antonenko and myself is inconsistent is a phenomenon reflected, more broadly, across the field. Crook and Sutherland (2017), for example, also make an analogous distinction, in their own a specific way, between labels for constructs intended to highlight quite different granularities of thinking: in their case, the contrast drawn is one between "conceptual frameworks" (as "umbrellas") and "theories" (which fall under conceptual frameworks, yet which have a more "principled construction") (p. 18). The key point, for present purposes, is that while the distinctions being invoked are important, the associated use of terms is not standardised. Instead, the onus is currently on researchers to be clear about the different modes of theory used in their projects, using whatever terminology they prefer, and to chronicle, diligently and meaningfully, the attendant distinctions when reporting their research to others.

It is noteworthy that each example of a *mode distinguishing* position that I have considered hitherto has distinguished between theoretical modes for a particular purpose: to foreground one in particular. Thus, Antonenko (2015), having presented a definition of conceptual frameworks, takes *using the latter* as the main focus of their subsequent narrative (the content of which has already been elaborated in section 4.3.1). A similar point could be made about my own contribution (Bligh, 2020), where, having demarcated a meaning for the term, "theoretical frameworks", much of the discussion explores how to use them. This observation highlights a somewhat dependent relationship between *mode distinguishing* and *role strengthening* stances: in particular, while not all positions that I would characterise as *role strengthening* make reference to *mode distinguishing*, many *mode distinguishing* stances do explicitly, albeit in quite disparate ways, gesture towards some variant of *role strengthening*. Yet not all *mode distinguishing* contributions to what I label *functions disputes* have such a singular goal, and in some cases the attendant argument does encapsulate some more comparative consideration of the purposes and merits, in relation to research practice, of different theoretical modes.

One useful example of a more comparative argument is put forward by Passey (2019)[17], who advocates that

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17 While revising this paper, I became aware that Passey would expand on these points further in the present special issue. The present comments concern the formulations of Passey's arguments in their

TEL researchers should more clearly discriminate between 'models', 'conceptual frameworks', 'theoretical frameworks' and 'theories' (p. 979). Each of these four categories, Passey suggests, are "forms" of a more generalised consideration, which he labels "background underpinnings"; the distinctions between them, while numerous, broadly hinge on the different extents to which each strives to be explicit, exhaustive, and detailed, and also on their temporal relationships to research practices (with some constructs, for example, positioned as inputs or outputs from the vantage point of particular projects).

While Passey, presumably for reasons of space, does not elaborate systematically on all possible permutations of the factors they express, several examples are provided that highlight some key contours of their thinking. One such example is the distinction between the terms 'model' and 'framework', which is discussed in the following way:

> […] a model is concerned with summarising findings in a visual way. It might then be used as a model for exploring practice or further research, but it should be recognised that its specific context and summarisation of factors or features might not be exhaustive. A framework, on the other hand, tends to be more flexible and descriptive, as it usually identifies factors or criteria that have influence on a particular field (whereas a model might not do this in such a detailed way). Such a framework can be used as a means to underpin a research study, and may be used as a starting point, since it can offer a thematic view for creating research instruments or methods. (p. 979)

That Passey here distinguishes a model as something represented "in a visual way" draws attention, very usefully, to the idea that 'theories', in a range of different forms, have a communicative function; which implies, in turn, a practical need to express them in some way. More generally, we might come to understand theories as artefacts that mediate research activities: like all artefacts, therefore, they get designed, refined, reinterpreted, discarded and supplanted within and across successive research projects. The various graphical representations I use throughout the present paper, of course, constitute 'models' in precisely the sense designated by Passey. They are intended to summarise the findings I express within particular sections, thereby helping the reader to keep track of my argument; to demonstrate how my narrative cumulatively builds towards the more overarching conclusions suggested in the paper's latter stages; and to provide readers with a summary of key points

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2019 paper only.

that they might retain, and return to, in their own future work. On the other hand, those diagrams can hardly present a "summarisation of factors" that is "exhaustive"—even of those various issues and nuances that are discussed, in the section text, in each case, let alone those my present analysis might inadvertently overlook—without jeopardising their communicative usefulness. Such observations reinforce the point, briefly outlined earlier, that actively constructing instantiations of theory often requires a degree of simplification: such that the artefact is "simple enough to be used".

Subsequently, Passey (2019) distinguishes between 'theoretical' and 'conceptual' frameworks in the following way:

> A theoretical framework, however, arises from outcomes beyond a single study, based on one or more theories, which might be social constructivism, constructionism, behaviourism, social learning, discovery learning, experiential learning, etc. A conceptual framework, by contrast, is different, in that it selects concepts that are used to frame or provide background for a research study. It does not need to be based on a theory, although it certainly might take theory or theoretical elements into consideration as a part of the background concept(s). (*ibid.*)

In this instance, Passey's discussion discloses two further aspects of *mode distinguishing* stances that are useful for thinking about theoretical *functions disputes* in TEL research: each concerned, in different ways, with the source material recruited where frameworks are generated within particular projects. Passey emphasises, on the one hand, that constructing conceptual frameworks does not necessarily entail selecting some sub-set of notions already pre-packaged within some inherited theory; on the contrary, concepts might be selected from more than one underpinning framework. On the other, it is acknowledged that conceptual frameworks might not *only* get derived from theoretical frameworks; they might, instead, borrow notions derived from reviews of empirical literature, and even derive concepts from reflection on professional practice or personal experience. That concepts might be selected from such varied underpinnings in these ways underlines the *active* process that framework construction entails. Such active conceptual labour, in turn, places an onus on researchers both to ensure that their concepts can reasonably be used together—that they do, in fact, form a *framework*—and to explicitly argue the case for such coherence to their audiences. Such issues resonate with the issue of commensurability, which, as I discussed before (section 4.2.5) is also raised within *interchange disputes*.

At the risk of labouring the point, I find such distinctions useful where they render explicit a necessary but often

underappreciated aspect of actual research practice: the need to construct specific instantiations of theory, for the context of a particular research project, from within the broader underpinnings to which the researchers are committed (cf. Bligh, 2020). In my analysis of theory use in empirical papers (Bligh & Flood, 2017, which has been cited previously), for example, in activity theory papers it was nearly always the "activity system" diagram and its constituent elements that were used in relation to the "abstracting" function of theory (Bligh & Flood, 2017, p. 133). It seems likely, therefore, that that diagram is being instantiated as a particular 'form of underpinnings' within those papers, yet the evidence for that having arisen from a process of explicit reflection was vanishingly small. The implication is that the construction of a conceptual framework for some given project can benefit from reflection and explicit argumentation *even where* those underpinnings being recruited have already been, ostensibly, suitably packaged by others into forms suitable for wholesale importation.

That Passey's elucidation of these points invokes the familiar categories from the standard theoretical "canon" (i.e., those discussed and problematised throughout section 4.1) indicates, however, that, in this account, the very broadest theoretical modes are being taken as relatively static.

What remains to be problematised, therefore, is how these different constructs are transformed and developed over time—including how they mutually influence, or even develop *into*, each other within research practice—across the range of theorical modes that are being distinguished. Presumably, such development could also be traced for the 'roles' of theory; one might examine, for example, how instances of using theory for 'abstracting' leads to particular kinds of 'explanation'. Yet the issue seems more pressing in relation to those stances that I refer to as *mode distinguishing*, precisely because Passey's and Antonenko's labels for what Passey calls 'underpinnings' seem explicitly less permeable and implicitly more hierarchical. In my view, that accords a developmental resonance to questions about how contiguous forms of underpinnings influence each other. According to this view, for example, can the efforts of those empirical researchers using a specific 'model' ever hope to contribute, perhaps cumulatively, towards developing a given 'theoretical framework'? That sense of hard-won cumulative progress is often viewed as important when progress in the field is described—for example, it is precisely what Bennett and Oliver (2011) value when examining the decades of work by Richard Mayer and others on multimedia learning (p. 183). There certainly seems a danger, when differentiating between different 'forms of underpinnings',

that conceptual transfer might come to be viewed directionally within the hierarchies of underpinnings that are set up, thereby stunting this kind of potential for theory to be developed dialectically within, and longitudinally across, empirical work.

Passey's (2019) discussion hints at this problem; for example, where they argue that "originating authors of these forms of underpinnings often state which form they are proposing or using" and that it is "clearly important that researchers using these background underpinnings respect these originating forms, for good reasons" (p. 979). Certainly, I concur that it is important, when appropriating a given form of background underpinning from elsewhere, that researchers strive for awareness of the authorial intentions behind the construct (cf. "respect" as having *due regard*); and I would also advocate them being explicit about the relations between those intentions and their own (cf. "for good reasons"). Indeed, *not* doing so can have deleterious consequences, such as where—to reprise the example I mentioned above—in the empirical papers I studied (Bligh & Flood, 2017), the activity system model was (a) used as a stand-in for the entirety of activity theory and (b) deployed to produce labelled models lacking precisely the sense of dynamism the original model strived to illustrate (cf. Engeström, 1987/2015, Ch. 2). Yet "respect" need not constitute obedience or replication, and it thus seems urgent to understand what might constitute "good reasons" for choosing whether or not to *vary* from what was intended elsewhere. It is at this point, in my view, that we need to confront how focussing on the roles and identity of theory in particular research projects, conceived narrowly, leaves unproblematised an important issue: how 'better' use of theory might cumulatively serve to advance and develop TEL as a *research field*.

4.3.3 Field pertinence

The third and fourth positions that I shall consider, in relation to *functions disputes*, are primarily concerned with suggesting that the object of benefit, where theory is used more effectively, might be *the TEL field* (or some sub-field of scholarship within it). By contrast with the varied discussions, outlined above, of *role strengthening* and *mode distinguishing*, these subsequent arguments have a broader scope and degree of granularity. Indeed, by analogy with how I invoked the notion of 'theory-method relations' in relation to *role strengthening* stances, the focus of the present arguments might be thought of as concerned with 'theory-domain relations'[18].

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18 I am instinctively unhappy with that formulation since it immedi-

To label the first such stance, I shall use the term *field pertinence*. By contrast with many of the other labels I proffer throughout the analysis in this paper, this term might seem generic: concerned as it is with issues of 'what', rather than, as for other examples, such as *role strengthening* and *mode distinguishing*, with issues of 'how'. That discrepancy is no mere accident. Instead, it reflects the extent to which the underlying arguments themselves are often aspirational rather than concrete. Indeed, with notable exceptions, they are often deployed, as elaborated below, as rhetorical devices for bolstering other arguments, in instances where it is the latter that seem more central to the particular focus of some given author. Nonetheless, *field pertinence* positions do indicate a genuine locus of discussion in relation to *functions disputes*—suggesting, in particular, that where we consider what the "better use" of theory entails, our purpose in doing so should be, in some way, the furtherance of the field.

Let us begin our analysis of *field pertinence* stances, then, by considering how such stances often serve in auxiliary positions within larger arguments. The reader may recall how I previously invoked the work of Harasim (2012), in relation to *canon disputes*, as an example of what I called a *theoretical advance* position; the purpose of which is to argue that the field's predominating standard canon of theoretical categories can be understood as a trajectory of progression, on which Harasim's own theory of Online Collaborative Learning (OCL) builds. For present purposes, it is worth examining, in more detail, how that underlying theoretical trajectory is conceived in relation to the research field. Harasim, drawing on the work of Thomas Kuhn, conceptualises research as a collection of "knowledge communities", which they elaborate in the following way:

> Knowledge communities are scientists or leading thinkers gathered or clustered around a theory and represent the state of the art in that discipline. A particular knowledge community represents the theory of the discipline, how it is defined and articulated in practice, and how it is substantiated. (p. 9)

ately suggests a new dichotomy: between (research) projects and (research) domains. My own preferred solution would likely involve re-conceptualising research projects in ways that better appreciate how they *encompass* their relations with other projects, allowing us to conceive a given research domain as an aggregate of research projects with relevant objects. However, given that I find little evidence of such thinking in the TEL literature, and also given that such conceptions are deeply antagonistic to how I think most TEL researchers currently conceive of research projects, I shall defer that argument to future papers. Here, I opt to make use of a distinction that labels those *actual* discussions, evident in the field, that are relevant to the topic.

Starting from such a formulation, which asks us to picture knowledge communities of researchers "clustered around" a theory, Harasim makes it apparent that developments in theory are, in their view, both reflective of, and to some extent driving, shifts in their attendant knowledge communities. Perhaps unsurprisingly—given that I have, above, characterised Harasim as adopting a *theoretical advance* position in relation to *canon disputes*—Harasim draws out the implications of their position in a way that emphasis the necessity of such "advances":

> The four major learning theories discussed here represent the state of the art as articulated by particular knowledge communities, which flourished at particular points in time. Theories exist in context, and both reflect and illuminate that context. Theories change and improve over time. Knowledge in a field does not merely accumulate, it advances. (*ibid.*)

What we see foregrounded in Harasim's position, therefore, is a desire to see the research field (or particular knowledge communities—presumably those intersecting with TEL concerns) "flourish" in relation to some particular "context", and a recognition that, in order to do so, those communities will need to be "gathered or clustered around" some theory that can "reflect and illuminate" that context. The implications are that *particular knowledge communities must develop*, and that *particular researchers must select for use in their projects*, theories that can substantiate the relevance and importance of those communities in the wider context. If they neglect to do so, it is purported, then the consequences, for the flourishing of their community, will be deleterious. Furthermore, it is highlighted, via the contention that knowledge "does not merely accumulate, it advances", that such knowledge development will, sporadically, require ruptural change in those theories that are being developed and selected. That Harasim promotes their own theory of OCL, of course, indicates a desire to position OCL theory as the latest product of such ruptural change—one well suited to the present "context". And it is, to reprise our notion that these *field pertinence* positions are typically deployed in a role auxiliary to other purposes, towards documenting OCL theory itself that Harasim devotes the bulk of their narrative.

Not all examples of that 'auxiliary' deployment of *field pertinence* stances, of course, carry forward Harasim's explicit commitment to what I term *theoretical advance* (in the sense previously described in section 4.1.1). Yet what does seem fairly common is a desire that, by developing and using particular theoretical stances, the research field might 'reflect' those developments occurring 'outside' it—thereby

attaining greater relevance or influence. For example, the work of Dillenbourg (2013), on classroom orchestration, previously described in section 4.2.4, declares a desire to better reflect that tacit knowledge which teachers develop within their routine practice; while the work of Mayes and de Freitas (2013), previously described in section 4.1.3, seems motivated, to undertake the work of *canon integration*, by a desire to accommodate recent developments in what is taken as an adjacent research field (i.e., learning sciences). While the particular instantiation of "knowledge community" and "context" highlighted, in each case, differs, what is present throughout is the notion that the research community's theory should reflect its wider context, thereby bolstering the relevance and influence of the former in the latter.

One work that takes such formulations to their logical conclusion is that by Passey (2019), whose paper is an outlier, by comparison with most others considered in the present section, in the sense that the *field pertinence* argument is positioned as primary rather than auxiliary. Passey's narrative takes, as a starting point, earlier work, such as that by Garnett and Ecclesfield, which suggests that the developing possibilities associated with digital technologies are "affecting the boundaries of the key areas of scholarship" associated with the phenomena being studied (p. 973). The latter formulation, of course, seems a reasonable approximation for the prior terminology of 'knowledge communities', while the former might be understood as an instantiation of the wider 'context'. Passey subsequently provides a conspectus of a range of ways in which, by contrast with the historical focus of the TEL field, contemporary attempts to study educational technology in use are forcing what they call "a wide expansion of scope" (p. 976). In turn, Passey suggests that "a *delineation* is fundamentally important from the perspective of theoretical underpinnings" (p. 978, emphasis added).

The core point that Passey wishes to make, if reinterpreted through the quasi-Kuhnian prism introduced above, is seemingly that the TEL field, as a knowledge community, is attempting to position itself in relation not to one wider 'context', but to several wider 'contexts', whose stark disparities pose particular challenges for developing and selecting those theories that the community might become clustered around. Passey's response to that situation, therefore, is to advocate the "delineation" of separate knowledge communities, each of which might be clustered around different theories. In particular, Passey (2019) suggests that we need to consider delineating six such communities, for which they propose the labels, in turn, of "Technology-Enhanced Education (TEE)", "Technology-Enhanced Management

of Education (TEME)", "Technology-Enhanced Teaching (TET)", "Technology-Enhanced Management of Teaching (TEMT)", "Technology-Enhanced Learning (TEL)", and "Technology-Enhanced Management of Learning (TEML)" (p. 979). Passey makes it explicit that, in their view, it is differences in theoretical background which lie at the heart of this delineation:

> The importance for separating these aspects of concern and study focus becomes clear when theoretical underpinnings are considered in each case. (*ibid.*).

Passey subsequently goes on to suggest possible candidates whose purpose is to "exemplify how the delineation of specific research inquiries of TEL can critically affect the choices that are possible" (p. 980). For example, since Passey takes Technology-Enhanced Education (TEE) as concerned with technology provision in institutional and systemic contexts, they propose that suitable underpinnings might include Rogers' theory of diffusion of innovations, or Hooper and Rieber's model of step-wise implementation in organisations (p. 980). In each case, of course, the purpose is to ensure that the theory used is relevant to the wider context, or, as Passey puts it:

> Any specific context being researched needs to be delineated carefully, so that areas where technology enhancement might arise can be more clearly understood and defined. As a consequence of delineation, application of theoretical underpinnings can be more pertinently appropriated. (p. 982)

4.3.4 Field development

Like that of *field pertinence*, the final position that I shall consider, in relation to *functions disputes*, is concerned with those prospects offered by the better use of theory for the *field* of TEL, whether in whole or in part. Yet, by contrast with those former positions, which typically suggest that the field should seek to develop, and then use, particular theories on the grounds of their *relevance to* some wider context, the arguments I consider in the present section are more centrally concerned with how the field might come to develop its own distinctive stances. Given that such a position fundamentally concerns the TEL field's development and sense of identity, I shall use the label field *development* to denote it.

Perhaps the most obvious characteristic shared by both the *field development* and *field pertinence* stances, as they are evident in the source materials, is unfortunate: both former and latter are often manifest in ways that seem auxiliary

to some other concern. That observation should not be misunderstood as a criticism of those works that I shall cite below; on the contrary, I would suggest that their authors have correctly drawn attention to an important issue that is, elsewhere, too often neglected. It would, however, seem fair to say that the TEL field, as a whole, has inadequately conceptualised, at least explicitly, the use-value of theory for field development.

Conversely, one particularly obvious characteristic which delineates *field development* from *field pertinence* lies in how they problematise, quite differently, that wider context in which research occurs. While *field pertinence* stances often, as I discussed in section 4.3.3, consider relations between scholarship and context using metaphors like 'reflection', such ideas are not reproduced where *field development* stances are stated. Instead, the core aspiration, where the wider context is considered, might better be characterised as one of 'reconceptualisation' or even 'challenge'. That distinction is reflective, to some extent, of those broader *interchange disputes* that have been considered more extensively in section 4.2. Indeed, one instantiation of that aspiration for 'reconceptualisation' and 'challenge' can be found in a statement already considered in relation to those *interchange disputes*; albeit here I wish to focus on a different aspect of the text. In relation to the phenomenon of big data, as previously elaborated, Jones and Czerniewicz (2011) make the following claim:

> In a world of big data the idea that theory is at best irrelevant and at worst counterproductive is extremely dangerous. In educational technology the idea of learner analytics could easily be developed to suggest that if we simply collect enough raw data on students then theory will become irrelevant. […] In a world in which there is a data flood in which new data sources impact on all the disciplines that learning technology draws on, a renewed engagement with theory will be essential to ensure that the data we collect for analysis is not garbage so that the answers derived from it are not just as poor. (p. 175)

From my overview in section 4.3.1, the reader may recall how Jones and Czerniewicz, drawing on previous work by Sayer, position "conceptualisation" as a key "dimension" of theory (alongside others, such as "ordering" and "explanation"). By considering that dimension in relation to the statement above, we can see how particular aspects of theory might come to be be regarded as central to field development. The key point, for present purposes, is that Jones and Czerniewicz' argument serves to position "theory" as a key locus of "conceptualisation"; noting, on this basis, that we will need a "renewed engagement" with such theory

if we are to withstand predominant discourses from that wider context in which TEL research operates. One corollary of the argument, of course, is that we will also need to actively avoid any temptation to disparage theory ourselves, as researchers—especially where those other stakeholders, with whom we work, might encourage us to do so (in the example given, by promoting some variant of a 'data-driven' agenda). Arguments of this nature that serve to demarcate, most starkly, *field development* positions from those of *field pertinence*.

Subsequently, Jones and Czerniewicz go on to argue that, if we are to respond to challenges such as those identified in the above quotation, then there will be an attendant need to "demonstrate how theory can locate discussion and research in a broader academic and scholarly discourse" (p. 176). That 'locative' question is an important issue: it lies at the heart of field development positions, and, for that reason, it is worth exploring how TEL theory serves to locate work within scholarly discourse.

One analysis that is highly instructive, in this regard, is that provided by Bennett & Oliver (2011). Their paper—one of the few to position the issue of *field development*, in the sense I define it here, relatively centrally—furnishes three accounts, which collectively examine the extent to which theoretical work can "advance knowledge" in the TEL field. One of those accounts, as I briefly alluded to above when discussing *mode distinguishing* positions, concerns that extensive body of work on 'multimedia learning' most often associated with the theories of Richard Mayer. Such work, in Bennett and Oliver's telling, certainly has numerous limitations: not least of which is its emphasis, to the detriment of sociocultural considerations, on the design of instructional content. Yet it also has, it is suggested, a number of distinct strengths: most notably, a strong emphasis on theory *development* across a trajectory of empirical work, rather than, as is more common, using empirical work to 'apply' or 'exemplify' some theory positioned, whether more or less explicitly, as established or fixed. Bennett and Oliver (*ibid.*) conclude that:

> Mayer's work thus has something important to offer a discussion of the role of theory in learning technology research. Mayer has achieved a coherent, interconnected body of work that is informed in every way by the theory in which it is located, from its conception (building directly from unanswered questions raised by past research and under-developed theory), to execution (the methodologies used), and to interpretation (what it means in relation to the questions asked, earlier findings and future research). […] In sum, Mayer's work demon-

strates how theory can inspire, frame and guide research that cumulatively builds knowledge in a highly focused area. (p. 183)

The sense in which Mayer's work is, here, lauded for its coherence, interconnection, posing of questions, and interpretation, all within a body of work that conveys a strong ethos of cumulative progress, is important: indeed, it is central to how *field development* is usually conceptualised. West, Ertmer and McKenney (2020), for example, make a broadly congruous argument (though with one important difference, as elaborated below) where they position "rich, critical, and thought-provoking scholarship" as that which "not only identifies the variables involves in a research agenda, but also explains, contextualizes, and critically analyses the relationships between these variables" (p. 594). The sense that theory might get embedded in a "research agenda", in this account, is also an important consideration for *field development* stances; and, once again, the work of Mayer and colleagues can serve as an object lesson for how such embedding might work in practice.

Yet there is an important sense in which the historical example of Mayer's 'multimedia learning' theory is *not* a good example of *field development*, at least in the way that contemporary narratives indicate a desire to promulgate the idea. That sense can be found in the very limited extent to which the associated body of work engages with the wider context of the phenomenon it studies; in other words, it does not, to reprise the terminology of West, Ertmer and McKenney (2020), above, have a strong 'contextualising' component. That the lack of "relevance to real classrooms" has become, by now, the standard critique of this body of work itself serves to illustrate the point (Bennett & Oliver, 2011, p. 183), and acknowledgement of this limitation seemingly lies behind Bennet and Oliver's use of the formulation, in the quotation reproduced above, of "in a highly focused area". Mayer's work is certainly not, then, an example of the "reflecting" approach to the wider context that characterises *field pertinence* positions. Yet it *also* does not seek directly to challenge that wider context; arguably, we might characterise the relation between 'knowledge community' and 'wider context', in this case, as one of studied neutrality (or disinterest).

Having offered their own critique of this work, Bennett and Oliver subsequently go on to examine other examples of theoretical work in TEL that do seek to engage with wider contexts. One such example is the work of Chen (cf. *ibid.*, pp. 185-186), where it is theory that is seen as helping relate the findings of the study to the broader context, thereby—by highlighting that they implicate a nexus of issues whose im-

port is much wider than the research site—rendering those findings relevant to a broader audience. Bennett and Oliver's analysis goes on to suggest, in part, that it is the borrowing of the theories in question (in this particular case, from both psychology and sociology), which gives Chen's study its explanatory power; an observation that resonates with the kinds of issues I shall further consider, below, in relation to *exceptionalism disputes* (section 4.4). For present purposes, the important point is simply that particular roles of theory, as they are used in a particular study (cf. section 4.3.1), are being highlighted as important in serving a 'locative' goal in relation to *field development*.

Let us take stock. My analysis, thus far, of *field development* positions has, among other things, highlighted arguments that we need to problematise our relationships, as researchers, with those broader 'contexts' in which our work gets situated; that we need, if we are to do so successfully, to avoid the temptation (very real in some cases) to neglect theory; that some of those distinct roles that theory serves within particular research projects have, more than others, considerable importance for advancing knowledge in the field; that theory needs to become embedded within cumulative processes of knowledge production (perhaps 'research agendas'), if we are to realise, to the fullest possible extent, those opportunities for knowledge production arising from theory use in particular, bounded projects; that the theory we use itself needs to be seen as developing, with its categories problematised dynamically, rather than deployed statically, within such research agendas; and that theory can serve a useful role, under certain conditions, in communicating and amplifying the importance of findings, which might otherwise be taken as having a relatively parochial set of implications. Furthermore, while it is certainly possible to highlight particular strands of work in the field as exemplifying some of these beneficial practices, most such examples are lacking—sometimes abjectly so—in other such respects.

These are, in my view, important points. Yet they are, when compared against many of the arguments I have analysed previously, remarkably silent about theory itself. With the obvious exception of the (valuable) argument that theoretical categories must be viewed dynamically, many of these contentions either recapitulate, reframe, or synthesise points already made in relation to other stances. Doing so is, in my view, useful to a certain extent. For example, if I were interested in addressing the question *what should we be doing with theory if we want to better develop the field?* then the preceding paragraph might offer some useful answers. Yet there are limits to such stances. If I were to take seriously the above points and pose, in turn, a question like *in what roles might theory serve to develop the research field, or a*

given 'research agenda' within it, rather than some particular research project? then I might find that answers are less forthcoming. This suggests, in my view, a reluctance, across the TEL field, to think (or at least write) about theory in terms of broad trajectories of research ('research agendas') rather than granular projects; the former, instead, get positioned, perhaps unintentionally, as corollaries of the latter.

To understand better the limitations of this situation, it is worth considering one paper—an outlier in the source materials—that does discuss a concrete research agenda. That paper is a book chapter by de Laat and Lally (2004), which discusses their trajectory of research on the topic of 'tutoring' in higher education networked learning communities: and placing a particular emphasis on understanding how tutors might support individual and collaborative learning within such communities. For present purposes, I wish to downplay the relationship between this work and the 'networked learning' knowledge community in particular; while the paper does explicitly position the work within that community, no argument is put forward that the experiences described are idiosyncratic to that field, by comparison with, for example, 'TEL'. Instead, I wish to emphasise, primarily, that the account successfully highlights how theories can play significant roles in *developing* research agendas (and, secondarily, that, in order to do so, the narrative draws extensively on examples of thinking from outside the TEL field).

The starting point for the trajectory of research discussed by de Laat and Lally is consideration of a Masters-level programme in E-Learning, delivered in an 'online workshop' format to part-time students who are working professionals. The aim of the programme, via the establishment of an online 'research learning community', is taken as fostering "an action research approach to professional development" (*ibid.*, p. 19). A body of research centred on this programme increasingly sought to problematise, in particular, the integration of learning and tutoring, and the attendant shifts in the role of the 'teacher'; processes of tutoring, it was being recognised, were being undertaken by a range of course participants, with interesting implications for the roles of the 'designated tutor'. At the outset, a mainstay of the research involved constructing coding schemes, based on existing models of 'tutoring', to interrogate, using a content analysis approach, the extent of 'knowledge construction' manifest in selected online workshops (pp. 20-22). While de Laat and Lally's narrative draws out a range of interesting issues, I shall focus, for present purpose, on their analysis of the roles of theory in this developing research agenda.

De Laat and Lally (2004) commence their paper by

highlighting their "concerns about the complexity of the interactions of theory and praxis" (p. 12). That a range of 'theoretical models' are currently being used by researchers and practitioners in relation to similar objects; that many such models are regarded as useful; and that each has different methodological implications, are each taken as characteristics of that complexity (pp 12-14). What is posed for researchers, under such circumstances (which are, of course, far from unique), de Laat and Lally suggest, is the challenge of apprehending the "fundamental differences between these models in terms of focus and power" (p. 12).

To apprehend such fundamental differences, de Laat and Lally (2004) draw on prior work by Halverson (2002), which, de Laat and Lally suggest, "has cogently articulated four ways in which theory might contribute to this conversation" (p. 12). Halverson's work, it should be noted, is not a contribution to theoretical debates in TEL, but instead is located within the field of Computer Supported Cooperative Work (CSCW). The latter—another interdisciplinary research field, whose scholars are, most typically, affiliated to academic departments of organisational studies, engineering, and computer science—has, since the 1980s, examined how workplace computer systems can co-ordinate and support aspirations for people to labour more collaboratively19. Halverson's paper has a slightly different focus to that of de Laat and Lally: while the latter discuss one ongoing research agenda in a way that usefully highlights the roles of theory, the former explicitly compares two theories—activity theory and distributed cognition—and seeks to consider their use-value across their research field (their abstract, p. 243, poses the question as concerning "what each can do for CSCW"). Given the close pertinence, for present purposes, of Halverson's emphasis, I shall use their formulations as a supplement, below, to those of de Laat and Lally; notwithstanding that their 'workplace' orientation might seem unfamiliar to many TEL readers.

De Laat and Lally (2004) and Halverson (2002), then, suggest that theories should have four "attributes" if they are to be useful in making sense of what Halverson calls a "domain" (p. 243). Those attributes are as follows:

- *Descriptive power*: "providing a conceptual framework that helps us to make sense of and describe the phenomena we are engaged in" (de Laat and Lally, 2004, p. 12); Halverson's original formulation also emphasises that this attribute of theory "includes describing a work setting as well as critiquing an

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19 Jones (2015) notes that CSCW has historically had "little overlap" with those research domains more usually considered part of the TEL tradition (p. 60).

implementation of technology in that setting" (p. 245);

- *Rhetorical power*: "helping us to talk about these phenomena and speculate about ways in which the theoretical ideas 'map' onto our experience of them" (de Laat and Lally, 2004, p. 12); Halverson additionally emphasises the naming of a "conceptual structure", and that the attribute is directed towards "both how we describe things to ourselves and how we communicate about it to others" (p. 245);

- *Inferential power*: "providing us with ways of advancing our understanding by helping us to ask new questions and intervene in creative ways, as educators, in the contexts that we are investigating and in which we are participating" (de Laat and Lally, 2004, p. 12); Halverson additionally emphasises the attribute as encompassing the property of helping us realise that "we have not yet understood sufficiently to know where or how to look" (p. 245);

- *Applicatory power*: "informing the ways in which we design and engage in pedagogy to support learning" (de Laat and Lally, 2004, p. 12); from their different disciplinary perspective, Halverson renders this attribute as being concerned with being able to "describe and understand the world *at the right level of analysis* in order to bridge the gap from description to design" (p. 245, emphasis added).

By analysing their own trajectory of work, longitudinally, using such attributes, de Laat and Lally (2004) notice, among other things, that their trajectory of research has involved repeatedly re-evaluating their theoretical frames; having spent several pages (pp. 15-19) describing the different "perspectives" that influenced their work at different times—clustering them under the headings "Constructivism, situativity and group learning" and "Socio-cultural theory", where it is made clear that each contains a wealth of quite different stances—they conclude that this "complex collection" of ideas is "necessary to take account of the real complexities of individual and group processes" their work wishes to examine (p. 18). In turn, this process of repeatedly engaging with, and critically evaluating, theories, led, in their account, to repeated struggles with methodology. If theory is to support a "conversation" within a field or research agenda, it is suggested, then methodology needs to be viewed as the "*syntax*" (p. 14, emphasis in original); in other words, the principles governing the structure of knowledge production within that conversation. Developing some new theoretical perspective, within some trajectory of research, will challenge those methodologies that have previously become established there; while attempts to

derive a specific methodological syntax from that new perspective will, in turn, present challenges that ought to be harnessed as key resources for reflection by those involved in the knowledge community. Finally, de Laat and Lally notice that the core focus of their research agenda also developed over time: from the beginnings described above, the work developed to encompass a more expansive focus on *agency* in online communities of professionals.

The points raised by such a discussion constitute a valuable, albeit less frequently articulated, accompaniment to those preceding discussions of *field development* positions. They demonstrate the real value that can be added by stepping back to reflect on how theory can be evaluated as contributing to the development of wider research trajectories within the field.

4.3.5 Synopsis of functions disputes

A synopsis of *functions disputes* is provided in Figure 3. Given that the format is the same as for the preceding two figures, I shall assume that readers will readily recognise the basic intention: to position the "functions disputes" node as the central locus of discussion, and the others as distinct stances taken in relation to that locus. Once again, the textual summary in the diagram is a simplified summary of the preceding discussion, and readers are directed to the relevant sub-sections, above, for more nuanced analysis, respectively, of *role strengthening* (section 4.3.1), *mode distinguishing* (4.3.2), *field pertinence* (4.3.3), and *field development* (4.3.4) stances.

In the case of *functions disputes*, the set of relationships highlighted within the diagram, between the different positions, is relatively simple. There is often a relatively direct sense in which positions of *field development* build on arguments about *role strengthening*: i.e., by highlighting that some of those roles that theories might play in research projects have, in turn, a particular import for how those projects contribute to developing distinctive positions and agendas. Yet the label "partially building" is intended, in the same way it was used in Figure 2, to convey that the relationship between the two positions is not one of total dependence; *role strengthening* positions are not taken as a prerequisite for *field development* stances in all cases. Indeed, section 4.3.4 considered examples of scholarship wherein the roles played by theories in constructing research agendas and developing the field was conceived rather differently from those put forward, within discussions of *role strengthening*, in relation to research projects.

Figure 3. Synopsis of *functions disputes*
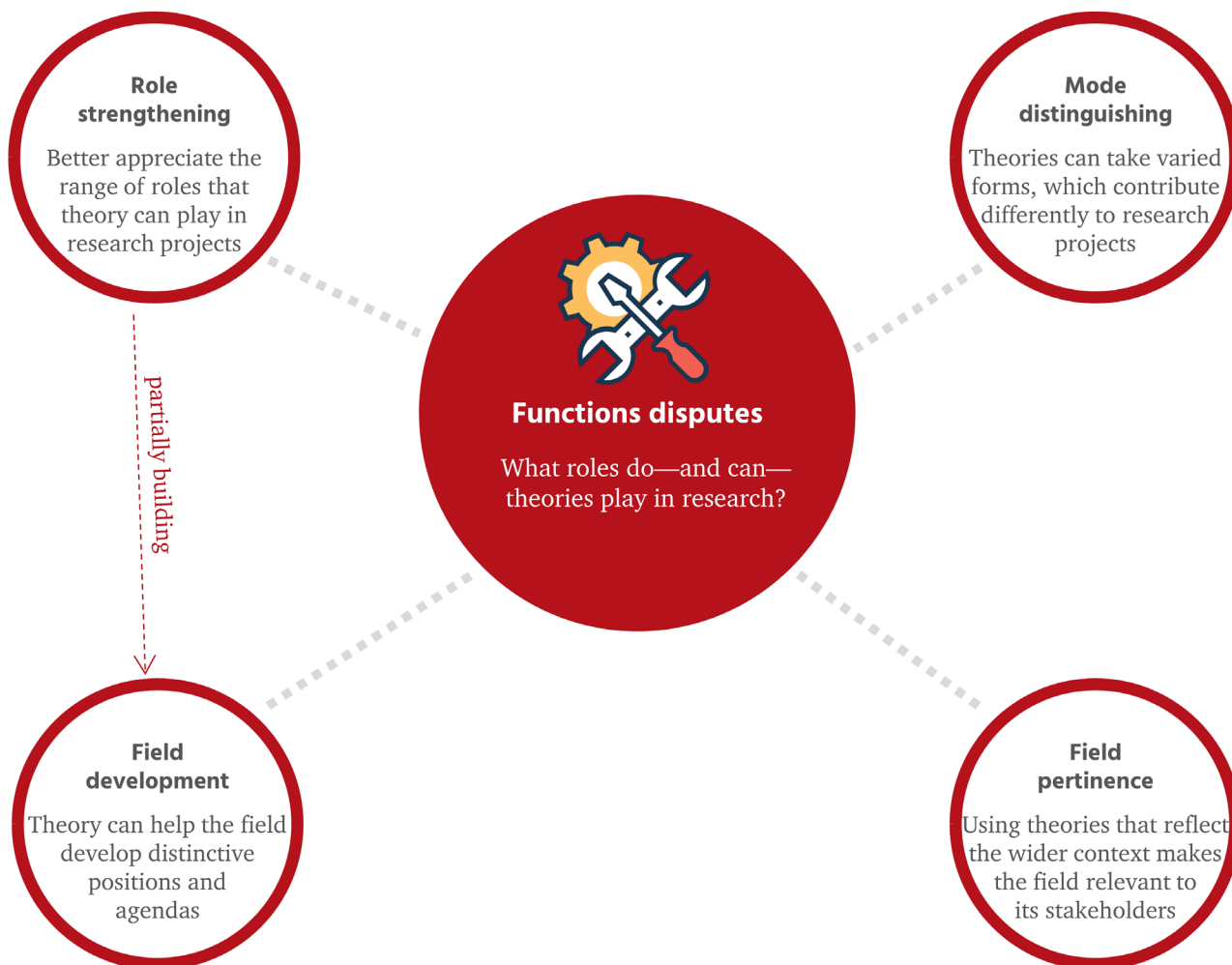
One aspect of the diagram that is worth highlighting is the *absence* of explicit connections, in some cases, between positions that would appear, *prima facie*, to be closely related. That *field development* positions do not get labelled as building on *mode distinguishing* stances, for example, might be considered surprising, since it would seem plausible that the various theoretical 'modes' might contribute quite differently to the development of the field. Yet extant examples of what I would characterise as *field development* stances do not foreground such a point; and, so, the absence of such a connection in Figure 3 represents, in this case, a lacuna in the source materials. Those source materials also, moreover, under-problematise the relationship between what I call *field pertinence* and *field development*: in other words, the extent to which initiatives to make the field theoretically more 'relevant' to stakeholders, on the one hand, and those concerned with developing the field's distinctive positions, on the other,

might be mutually supportive or in tension with each other.

Several of these positions do, however, implicate the need to make distinctions between different theories; thereby suggesting, in turn, a need to consider what our priorities might be when developing new theories or borrowing existing ones from elsewhere. Those questions are considered more fully by the analysis in the next section.

4.4 Exceptionalism disputes

By *exceptionalism disputes*, I refer to discussions concerning the sources of the theories that should be used in TEL research. Those disputes are, as I shall elaborate below, often framed by a concern with the extent to which the field should "borrow" from other sources, and also by a concern about the nature of the sources themselves. The use of the

terms like "should", in those preceding sentences, is quite deliberate; it indicates that *exceptionalism disputes* have, by and large, an aspirational, future-oriented, and normative character.

The historical situation, with regard to the source of those theories to which the field has usually paid homage—the formulation indicates some scepticism about the extent to which those theories were, in some cases, really used—is, of course, relatively clear. As discussed, and problematised extensively, in section 4.1, the TEL field has long referred extensively to a definite "canon" of theoretical categories: derived from a particular reading of paradigmatic developments, within Western academic psychology, concerned with conceptualising the phenomenon of 'learning'. Those categories, it should be emphasised, continue to be extensively referenced in the field; indeed, that section 4.1 provided such an extensive overview of disputes related to that canon of "grand theories" is itself indicative of the gravitational pull they continue to exert on discourse in TEL. Yet a range of tensions—for example, concerns about the limited *interchange* that has resulted from a reliance on theories of 'learning' (cf. section 4.2), and a desire to render the field relevant to more disparate stakeholders (cf. 4.3.3)—has been manifest, in some cases, via an impulse to break away from these canonical theoretical categories.

In short, any examination of that body of literature which takes 'theory', in TEL, as its object of enquiry will quickly discern that there is a strong impetus to move away from disciplinary psychology as the sole fount of conceptual inspiration. That impetus leads, in turn, to significant questions: most immediately, about what sources might be drawn upon in its stead. Sometimes, such questions are addressed by scrambling for disciplinary alternatives. Jones and Czerniewicz (2011), for example, whose article serves as the introduction to a previous journal Special Issue on theory in the field, put forward the following observation:

> It is interesting that the call for papers for this special issue on theory in learning technology drew few papers with an emphasis on learning theory and that there is little evidence of a strong psychological, computer science or educational research influence. […] There is a sociological bent indicative of what we perceive as a general shift to the socio-cultural context of learning. (pp. 175-176)

In my view, Jones and Czerniewicz usefully highlight an important aspect of theoretical disputes in TEL; which is that certain disciplines get promoted as suitable sources of influence for TEL scholarship, while others are (often implicitly)

disparaged. Indeed, it can occasionally seem as if advocates for a variety of academic fields are jostling to best occupy what they identify as a nascent power vacuum. Yet not all writers concerned with this topic demonstrate a specifically "sociological" inclination and, where particular disciplines are put forward as suitable substitutes for the established order, that is usually done in the pursuit of promulgating some specific theory from within that discipline.

In my view, therefore, when considering theoretical disputes in general, we need to examine a set of *exceptionalism disputes* whose fulcrum is the concept of "borrowing" from outside the discipline. The core question might be phrased as follows: if preceding generations of TEL researchers have largely borrowed from the academic discipline of psychology, and if we are no longer content with that state of affairs, then to what extent should we be looking to borrow from elsewhere instead?

It is towards such issues that the analysis below is oriented. In what follows, I shall demarcate three positions, evident in the source materials, that I shall characterise using the labels *phenomenal distinctiveness*, *horizon broadening*, and *conceptual imbrication*.

4.4.1 Phenomenal distinctiveness

One stance sometimes taken, in relation to *exceptionalism disputes*, invokes a notion that TEL's research objects are, in important respects, quite unlike those of the other domains from which the field has often sought to borrow. As a consequence, it is suggested, we need to develop our own theoretical approaches. I shall refer to such stances using the moniker *phenomenal distinctiveness*.

The reason for emphasising the word "phenomenal", in naming this stance, derives from the fact that such positions usually start out by orienting themselves towards *what the field is studying*, rather than the field *per se*. When considering the territory of the TEL field (in section 3), I previously considered claims that the TEL field is, in the words of West, Ertmer and McKenney (2020), "unique among academic disciplines"—for example, because it sits at complex interdisciplinary and interprofessional nexūs. Yet the claims from which *phenomenal distinctiveness* positions proceed have, typically, a rather different character. For example, Haythornthwaite and Andrews (2011), whose work constitutes a usefully explicit instance of this kind of position, start out by suggesting that "conventional learning and scholarship" is fundamentally delineated by hierarchical relationships of engagement between learners and knowledge, in which teachers are positioned as powerful mediators, whereas

"e-learning", by contrast, constitutes a quite distinct object of research:

> We suggest that engagement in e-learning makes for a different kind of learning. In conventional learning and scholarship, there is an authoritative, hierarchical power system at work. The teacher acts as mediator for the student between the body of knowledge, as enshrined in books, journals and other forms of print. 'Knowledge' is seen to exist, to be 'added to' by research, and to be guarded by editors of journals who, among others, protect and preserve the discourses of induction into that community. The student voice is always subservient to the authoritative power, unless, through debate and discussion, a critical stand is taken and then committed to print. By engaging with print, the authoritative voice of knowledge is *taken on in its own terms* (e.g. in book reviews, in replies to journal articles, in letters, in books that provide a counter-argument). No amount of talk or blogging will dent what appears to be a hegemony of knowledge that is reified in print. (pp. 57-58)

One core aspect of Haythornthwaite and Andrews' claim, then, is that *bona fide* "e-learning" constitutes a phenomenon of study which is distinct from conventional learning, notwithstanding that the latter might have incorporated various technological means over the recent period (cf. "No amount of […] blogging will dent…"). Existing theories of learning have, in this telling, been developed to study a different phenomenon; for which reason they are inextricably accommodated to the hierarchies of conventional learning. That accommodation, in turn, raises "epistemological concerns" (p. 57) for scholarship in the TEL field, since the phenomenon of "e-learning" has quite different characteristics:

> In e-learning, however, the canonical texts are themselves committed to digital format and thus become at once more malleable, more open to critique that is actioned on the same level as the original text. A digital electronic text can more easily be broken up, annotated, re-aligned, and incorporated as part of a dialectic or at least dialogical exchange. The 'voice(s)' of the original author can be placed alongside the student voice or voices. The learning process becomes more like speech, is more democratic, and is less hierarchical than one based conventionally on print. (p. 58)

A number of peripheral observations could be made about the above argument. That the introduction of digital technologies into human practices constitutes a fundamental 'rupture', for example, is a much-contested point. Furthermore, a desire to relate the categories of 'learning' and 'knowledge' in different ways does not lead inexorably to such an epistemological critique (cf. the work of Scardamalia and Bereiter, as discussed in section 4.1.5).

Yet, for present purposes, the more important point is that, for Andrews and Haythornthwaite (2011), bases of this nature *are* taken to suggest that "new theory" is needed. As the quotation below makes clear, that is not a decision that these writers have arrived at quickly:

> In the Introduction to *The Sage Handbook of E-learning Research* (Andrews and Haythornthwaite, 2007), while charting some of the constituent elements and factors in building a theory of e-learning, we backed off on whether a 'grand theory' of e-learning was needed. At the time, we felt that the field was not in a sufficiently mature state for such theorizing. However, we now say in our 'answer' to the question posed by the present section, yes, new theory is needed, and e-learning as an activity and as a way of learning requires its own theoretical treatment. (p. 56, emphasis in original)

It should be emphasised that, in suggesting that a "new theory" be developed, on the basis of what I am calling *phenomenal distinctiveness*, Andrews and Haythornthwaite are not advocating that a hermetic seal be placed around the work of the field. On the contrary, they provide a lengthy conspectus of those theoretical underpinnings from which any new theory might seek to derive inspiration (pp. 47-55). "New theory", therefore, seems to imply, in this instance, that some synthesis of prior positions be undertaken, as a pre-requisite for developing some distinctive new formulation. Nonetheless, in this view, that eventual formulation *will* be distinctive to the field; and, moreover, it will constitute what is referred to in the quotation, above, as "a 'grand theory'".

Andrews and Haythornthwaite are quick to concede that their new theory has yet to be formulated in a mature fashion. Yet they do provide a sequence of indicative questions; addressing which, it is suggested, will help in demarcating the contours of this future "new theory". Nine such questions are presented: in two clusters, related, in turn, to 'digitally mediated communities' and 'the social control of learning'. For Andrews and Haythornthwaite, a "new theory" is certainly required and is already being "brought about" (p. 62): they are confident that, when that theory is more fully developed, it will emphasise that TEL scholars should approach the phenomena they study, distinctively, as "(a) a psycho-social construct, (b) an epistemologically informed entity, and (c) a multimodal process" (*ibid.*).

4.4.2 Horizon broadening

Another position taken, in relation to *exceptionalism disputes*, has almost diametrically opposite implications. Rather than seeking, as advocated by *phenomenal distinctiveness* stances, to break away from the theoretical inheritance offered by other research fields, this position involves advocating that we should seek to *embed our work more deeply into* those theoretical constellations being proffered from elsewhere. As elaborated below, such stances often position endogenous TEL concepts as narrow and intellectually myopic, and argue that the field would benefit from drawing, instead, on critical theorising from more established fields.

At the risk of labouring a point already registered above, at the outset of this discussion of *exceptionalism disputes* (section 4.4), it should be stated that anyone making a list of those "more established fields" being advocated would notice a significant omission. Absent from the source materials, in other words, are any examples that advocate embedding our work more deeply into the framework of what I have, above, repeatedly referred to as 'Western academic psychology'. Instead, it is typically advocated that we should become more aware of theorising in *other* fields. Such advocacy, of course, typically serve as a precursor to making more specific recommendations, which accord with the preferences of some given author. For this reason, I shall refer to such stances as concerned with *horizon broadening*.

One example of such a *horizon broadening* position is put forward by Selwyn (2010), who suggests that the field needs to engage in "what can be termed the *critical* study of educational technology" (p. 66, emphasis in original). Selwyn encapsulates their argument in a way that (1) chronicles a retreat from a previously narrow emphasis on 'learning', and (2) suggests that we broaden our emphasis along what is termed "social scientific lines", as follows:

> […] the academic study of educational technology has grown to be dominated by an (often abstracted) interest in the processes of how people can learn with digital technology. While issues relating to the design, development and implementation of 'effective' learning technologies will continue to be of central importance to the field, it is reasoned that greater attention now needs to be paid to how digital technologies are *actually* being used—for better and worse—in 'real-world' educational settings. In this sense, it is contended that the academic study of educational technology needs to be pursued more vigorously along social scientific lines, with researchers and writers showing a keener interest in the social, political, economic, cultural and historical contexts within which

educational technology use (and non-use) is located. (p. 66, emphasis in original)

Substantially the same points are made by Johri (2011), and by Howard and Maton (2011). In each case, the concept of 'learning' is negatively problematised: by Johri (2011) as emphasising tasks and outcomes, to the detriment of an emphasis on "everyday aspects of life" (p. 209); and by Howard and Maton (2011) as "limit[ing] the range of positions" seen as legitimate for research, thereby artificially ventilating research agendas that are blind to important issues outside those limits.

Advocates of what I call *horizon broadening* often bolster their stance by reference to conjunctural observations: they put forward reasons why the field, as it has been historically constituted, is *no longer* able to address the challenges it faces. Selwyn (2010), for example, addresses this issue by suggesting, in a way that will surely serve to flatter the egos of those TEL researchers who constitute their core readership, that the phenomena studied by the field have increasing "societal significance":

> Put bluntly, as technology-based education and 'e-learning' continue to grow in societal significance, then it follows that the use of technology in education needs to be understood in societal terms. For instance, this includes acknowledging the clear linkages between educational technology use and 'macro' elements of the social structure of society such as global economics, labour markets, and political and cultural institutions. Similarly, at the 'micro' level of the individual, the act of technology-based learning also needs to be understood as being entwined with many other dimensions of social life. (p. 68)

Thus, the core suggestion here is that those phenomena studied by TEL researchers are increasingly societally 'significant', and that their investigation should, consequentially, become more entwined into research discourses more often associated with 'societal' phenomena. That narrative presents, of course, a very different emphasis on the object of study from that put forward in relation to *phenomenal distinctiveness* positions: where TEL is seen as studying something that is, in important ways, unique. It is perhaps unsurprising, therefore, that the course of action being suggested, in relation to theory, also differs.

The actual solutions preferred to this state of affairs, within those papers that I consider as countenancing a *horizon broadening* stance, are somewhat disparate. Johri (2011), for example, elaborates the advantages of "so-

cio-material bricolage", drawn from the traditions of practice theory, as an analytical framework (pp. 212-215), while Howard and Maton (2011) advocate that TEL researchers adopt "Legitimation Code Theory", which they position as "a central conceptual framework of social realism, a broad 'school of thought' that offers a means of moving beyond social constructionism" (p. 195).

The common thread is a rejection of scientism (the privileging of forms of knowledge and investigation on the basis that they are 'scientific'), with the field encouraged, instead, to more fully embrace what might be called *bona fide* 'social science'. Selwyn (2010), for example, makes this point in the following way:

> The study of educational technology should therefore be seen in profoundly social scientific terms—moving beyond making sense of the 'science' of learning, and pursuing what can be termed the *critical* study of technology-based social action and social life within the social world of education. (p. 68, emphasis in original)

In relation to *exceptionalism disputes*, therefore, what *horizon broadening* stances present is a view that fundamentally *downplays* the 'exceptional' nature of TEL. Yet such suggestions are not meant to suggest that TEL is become less important. On the contrary, the use of technology for educational purposes is positioned as an *increasingly* noteworthy aspect *of societal life*, and, on that very basis, it is suggested that TEL research becomes more integrated into those branches of scholarly endeavour that already study that life. To a considerable degree, such integration seems to position the TEL field, at least at the present juncture, as a knowledge 'taker', rather than an active contributor to wider fields of enquiry.

4.4.3 Conceptual imbrication

The final position that I wish to consider, in relation to *exceptionalism disputes*, proceeds by acknowledging the validity of those initial premises deployed by proponents of *both* preceding positions. In other words, it is suggested that the phenomena studied by TEL researchers really are societally embedded and significant, but also posited that our research objects are, in certain respects, distinctive. Conversely, where this stance differs from both of those positions is in denying that it is desirable for the field to adopt a single framework for investigation or understanding. Where advocates of what I term *phenomenal distinctiveness* might pursue the objective of constructing what Haythornthwaite and Andrews (2011) call a "theory of e-learning", and where those advocating *horizon broadening* often propose specific

disciplinary sources from which the field might borrow in broad swaths, for proponents of this final position the key point is that the search for grand theories is illusory. Instead, it is advocated that TEL researchers *recognise* that they have a range of distinct interests and study disparate phenomena, and, on this basis, (1) actively appropriate aspects of theories from elsewhere and (2) work to combine and arrange them in new ways. I shall refer to this position as *conceptual imbrication*, where I intend the word 'imbrication' to draw attention, by analogy with processes of construction in built environment professions, to both the materials from elsewhere that are being appropriated and to their arrangement in adjacent or overlapping configurations[20].

One particularly explicit example of what I consider to be a stance of conceptual imbrication is a chapter, in a book by Jones (2015) on *Networked Learning*, called "Theories of Learning in a Digital Age". Jones commences their account with a narrative, reminiscent of those already considered in the preceding section, which sets out the societal implications of the "rise of digital networks" (p. 47). In particular, Jones highlights that learning, in the digitally networked society they describe, is heavily influenced by those forms of labour upon which the economy places value. That reality, in turn, has consequences for the social forms taken by learning, which track those forms of labour over time:

> A starting point for this chapter is the term learning and the way digital and networked technologies intertwine with social forms in contemporary universities, corporate training and continuing professional development. Digital and networked technologies play a part in forming and reforming work, social life and higher education. It is this complex and dynamic mix of work, social life and the higher education system that we need to understand alongside the different theories of education and learning. (p. 47)

Prima facie, the formulation "alongside" in the above quotation resonates, to some extent, with those *canon juxtaposition* positions (section 4.1.5): which posit, in relation to *canon disputes*, that some accepted body of knowledge on 'learning' needs to be counterposed against other, similarly mature, bodies of knowledge concerned with other pertinent topics. Yet this is not the substance of the argument that Jones wishes to make. Instead, Jones highlights that the particular field of enquiry they are interested in—Networked Learning—has been influenced, for some time, by

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20 An alternative metaphor might have been *bricolage*, but I avoid this term here because it has become widely used already, in the field, to refer to particular methodological approaches to research projects.

conceptions of learning arising from outside the "Accepted Canon" (p. 49). The reason, Jones suggests, is that, over a considerable period, networked learning scholars have been engaging in work that foregrounds a particular educational sector (university-level and other post-compulsory settings, rather than learning in and around schools); a particular scale (from tens to thousands of students, not individuals or small groups); and a particular emphasis on technology (the appropriation of everyday technologies, rather than the design and use of 'the novel'). Doing so has, in Jones telling, long served to demonstrate not only the entwining of education and society, but also the inadequacy of the historical theoretical canon:

> […] learning at the post compulsory level is concerned with *more than* the transfer, transmission or internalisation of knowledge that is already in circulation in society. (p. 47, emphasis added)

As I mentioned in section 2, Jones' text is, by contrast with most other source materials I analyse in the present paper, an outlier. Jones explicitly relates their argument about theory to a particular knowledge community (Networked Learning), whose formulations are considered preferable to others, such as "educational technology" and, indeed, 'TEL'. For Jones, the particular focus of networked learning, and the attendant recognition of the stark limitations of established theoretical underpinnings, has long encouraged a way of thinking that Jones characterises using the term "flexibility":

> […] one of the strengths of networked learning is its flexibility in allowing for different ways of thinking about learning. (p. 48)

For Jones, that principle of "flexibility" should also be applied when thinking through that broader range of issues highlighted in the preceding section—those concerned with what was referred to there as "wider societal life". Jones wishes to discourage researchers from believing that they can simply 'import' theoretical frameworks from elsewhere, since both the precise phenomena they study, and their own research purposes, are likely to differ, in important ways, from those of scholars working in other fields. Such a position leads Jones, in turn, to directly address the notion of exceptionalism; in relation to which they continue to advocate the benefits of 'flexible' thinking. In another instance of argumentation whose character is unusual by the standards of the source materials—in this case, for the way it *explicitly* draws distinctions with a position advocated by another scholar working in the field—Jones considers the work of Haythornthwaite and Andrews (2011). The

argument of those latter authors, of course, furnished my own key example, in section 4.4.1, of a *phenomenal distinctiveness* position. Jones (2015) explicitly notices that their respective stances differ, and emphasises the core distinctions in the following way:

> My conclusion differs to that of Haythornthwaite and Andrews because I do not think that networked learning requires a new 'grand theory' but I do concur that there are new elements to learning that uses information and communication technologies and that these new elements may require new theories. My disagreement is in terms of an encompassing theory of e-learning or networked learning. My view is that learning is too slippery and complex a term to have a single theoretical solution and the addition of networked and digital technologies only adds to that complexity. (p. 67)

Jones text provides a lengthy excursus of different theories that might be used as the basis for understand Networked Learning; indeed, at least 150 pages within their book consider, in varying ways, the range of different theories from which network learning scholar might derive particular aspects of their own frameworks. Those theories are disparate: ranging across topics such as learning, human practice, networks, institutions, infrastructures, and knowledge production in higher education. I shall not attempt to provide a conspectus of those discussions here. For present purposes, the core point is not so much the particular theories that Jones highlights, but rather the active and relational way in which Jones advocates that scholars of networked learning engage in their appropriation.

The fundamental point, in terms of what I characterise as *exceptionalism disputes*, is that researchers are urged to characterise their research objects as comprising multiple, overlapping "elements"—many of which are already studied productively in other disciplines—and to commit to actively appropriating aspects of theories from elsewhere in ways that they deem to provide insight into those elements; all the time recognising that the precise ways in which they imbricate the concepts they borrow will be, in some sense, exceptional.

Jones, having differentiated networked learning from other traditions, such as TEL, early in their book (pp. 3-11), does not explicitly relate their stance back to those other traditions; instead, Jones' project is substantially oriented towards formulating a future research agenda for networked learning scholars in particular. Yet it seems reasonable to infer that, in Jones view, scholars of TEL would benefit, just as much as those networked learning researchers who they

address in their work more directly, from what I refer to as *conceptual imbrication*.

4.4.4 Synopsis of exceptionalism disputes

Figure 4 provides a synopsis of exceptionalism disputes in what should, by now, be a familiar format. The node "exceptionalism disputes" is presented as the central locus of discussion, and the other nodes, representing the three distinct positions outlined above, should be understood as relating to that locus. Once again, the textual summary in the diagram is a simplified summary of the preceding discussion; readers are directed to the relevant sub-sections, above, for a more nuanced analysis, in turn, of *phenomenal distinctiveness* (section 4.4.1), *horizon broadening* (4.4.2), and *conceptual imbrication* (4.4.3).

In the case of *exceptionalism disputes*, the set of relation-ships highlighted in the diagram is simple. The two positions of *phenomenal distinctiveness* and *horizon broadening* express a very different logic, with the latter highlighting what TEL scholarship has in common with other disciplines and the former emphasising what is distinct about research in the field. Those two stances are not labelled as being "opposed" in Figure 4, as was done for some stances taken in relation to other points of dispute, however, on the grounds that neither position explicitly disavows the other and that phenomenal distinctiveness positions do usually involve taking some existing theory as a starting point for some process of building or variation. That decision was not easy to make, and indeed an earlier draft of this analysis did involve labelling the relationship as one of opposition. That it would, in principle, be conceivable to construct an argument encompassing both positions was, in the end, crucial to the decision to construct the present version of the diagram. The

Figure 4. Synopsis of *exceptionalism disputes*
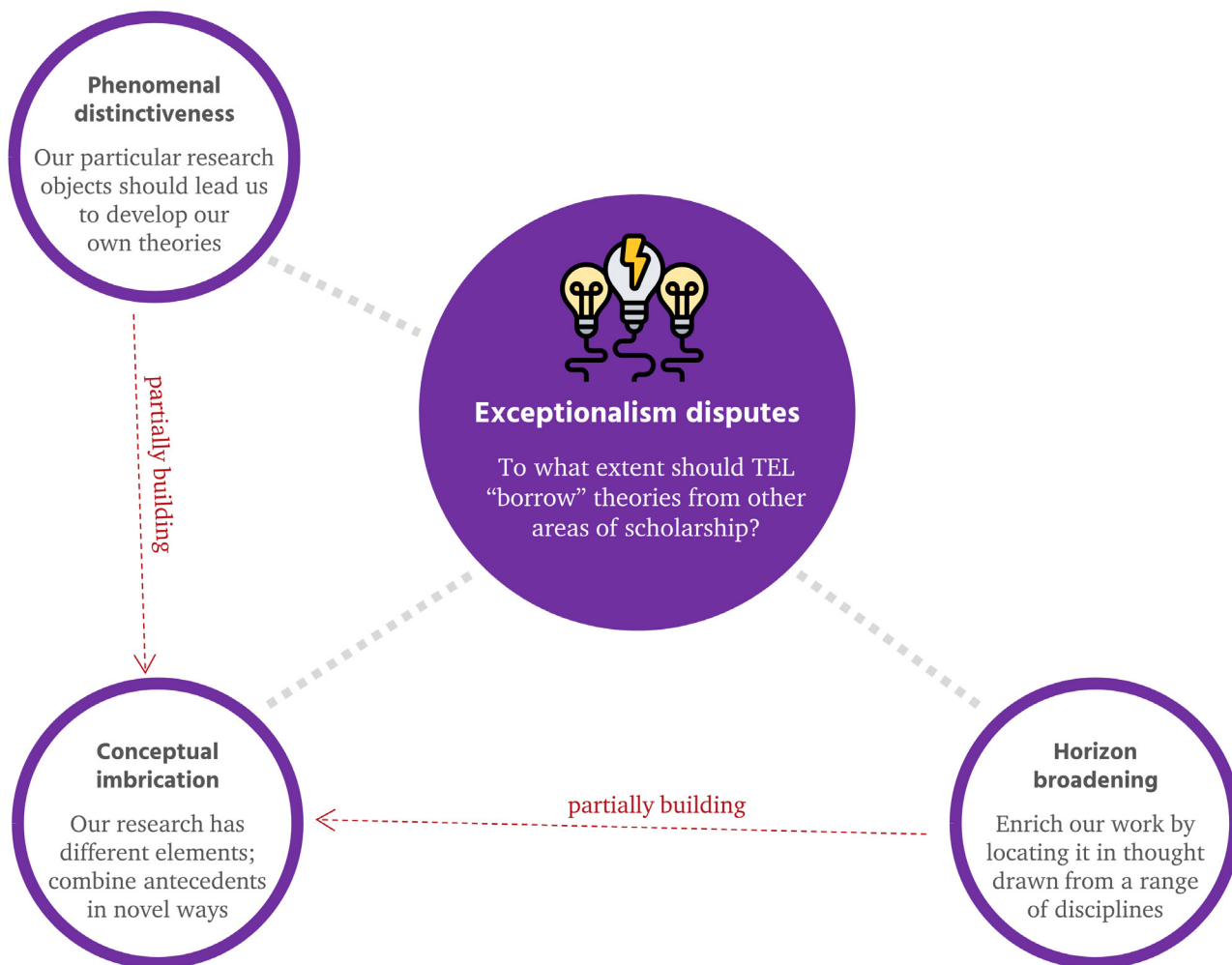
latter might be accomplished, for example, by first suggesting that we borrow more extensively from some given discipline, such as anthropology, before going on to acknowledge, for the purposes of appreciating some TEL phenomenon more fully, the need to develop some distinct variant of a given theory proffered by that discipline. Doing so would not be argumentationally incoherent.

The stance of *conceptual imbrication* is, of course, positioned as "partially building" on both other categories. In concert with how that label was used in the preceding diagrams, the intention is to convey that conceptual imbrication positions do, in practice, typically accept some of the premises of those other two positions—and wield them in support of their argument—but without being logically dependent on them. Furthermore, and importantly, the position of *conceptual imbrication* projects, on the grounds that their arguments are inappropriately totalising, an explicit rejection of aspects of both *phenomenal distinctiveness* and *horizon broadening* stances. As section 4.4.3 explains in more detail, at the heart of a conceptual imbrication position are the notions that our research objects are composed of distinct "elements", in relation to which we need to conceptualise with an appropriate degree of "flexibility".

This emphasis on 'exceptionalism' constitutes the fourth and final point of dispute that I wish to analyse. In the next section, I will pivot to consider, in turn, how the four points relate to each other, and the implications of this analysis for the 'territory' of technology enhanced learning.

5. Discussion

Two of the core goals of a 'discussion' section, within a scholarly paper, are (1) to bring together the main findings and (2) to consider the relationships between those findings and that body of literature within which the authors intend to situate their work. Each of those goals is, in turn, subordinate to a broader, overarching objective for the paper: which is to demonstrate that the work contributes something distinctive to one or more named areas of academic scholarship.

The present work, of course, is a narrative literature review; it aims, as I stated in section 2, to synthesise and systematise those debates occurring, in the scholarship associated with what might be broadly termed 'the TEL field', about theory application. For that reason, the body of knowledge, to which I aim to contribute, corresponds, in many ways, with the 'data set' that was analysed in the paper. That has implications for the present section, in which

I wish to discuss my findings, because, with reference to the two goals mentioned above, the main "relationship" between my findings and the underlying body of literature is that the former is a systematised representation of the latter. In what follows, therefore, I position the act of bringing together my main findings as a contribution, in itself, to the body of knowledge I have analysed in the paper.

I attempt to demonstrate that contribution, primarily, by drawing together the four points of dispute I analysed in section 4, and by highlighting some moments of commonality and difference between them. Throughout my exposition of those commonalities and differences, I shall reprise my account of how the state of the field (the "territory" of the argument, as described in section 3) is represented in this body of knowledge, and consider the implications of my analysis for its development. While doing so, I shall attempt to keep in mind the two audiences I addressed at the outset of the paper. On the one hand, to address those (relatively inexperienced) researchers who might wish to further engage with theoretical issues in their work, I shall provide some reflective comments: the purpose of which is to draw out some of the implications of my analysis for their own practice. On the other, to address those scholars interested in the topic of theory in technology enhanced learning research as a research object in its own right, I shall attempt to highlight where my analysis has highlighted points of tension, or issues that appear to have received insufficient attention, in the underlying the source materials.

A synopsis of the various theory disputes, which have been emphasised in the preceding analysis, is provided in Figure 5. Though the graphical format of the diagram varies slightly from the previous four figures, its benefits and limitations, in respect of its source material, are similar.

What the diagram aims to provide, most fundamentally, is an *overview* of the four points of dispute and of the various stances associated with each of those points. The diagram positions the four points of dispute as being concerned, respectively, with issues of 'canon', 'interchange', 'functions' and 'exceptionalism'. The various stances, arranged around the periphery of the diagram, are deliberately connected to those points of dispute; the reason being to underline that the meaning I intend to convey can, in each case, only be properly grasped by considering the stance *in relation to* the respective point of dispute. The sense of relationality and connection, across all four points of dispute in Figure 5, differentiates the diagram from the preceding narrative, which, necessarily, emphasised different points of dispute in turn.

Figure 5. Synopsis of theory disputes in TEL

Theoretical advance
The canon is a trajectory of advance we can build on

Theoretical co-existence
The underpinnings all have continuing relevance

Canon integration
Cohere disparate underpinnings into an overarching theory

Canon disaggregation
The categories are too broad; examine their concrete use

Canon juxtaposition
The knowledge is valuable, but needs supplementing

Canon expansion
Reconceptualise the debates and categories

Canon disputes
How should we relate to long-established discussions of the field's theoretical underpinnings?

Phenomenal distinctiveness
Develop our own theory to fit our own agendas

Horizon broadening
Enrich our work by locating it in thought from elsewhere

Conceptual imbrication
Combine antecedents in novel ways

Exceptionalism disputes
To what extent should TEL "borrow" theories from other areas of scholarship?

Theory **disputes** in TEL

Role strengthening
Appreciate the diverse roles that theory plays in projects

Mode distinguishing
Theories take varied forms and so contribute differently

Field pertinence
Using certain theories can make the field more relevant

Field development
Theory can help develop positions and agendas

Functions disputes
What roles do—and can— theories play in research?

Interchange disputes
What is the relationship between the field's empirical and theoretical discourses?

Researcher insularity
Researchers are unwilling/unable to engage with theory

Structural disincentive
Research regimes do not encourage/value theoretical labour

Empirical disengagement
Theory is difficult to apply and of insufficient benefit

Theoretical widening
Theory that reflects only 'learning' is inadequate

Research-practice theorisation
Value different knowledge forms from research and practice

Conversely, the diagram has some core limitations. Unavoidably, the structure of the diagram is somewhat simplified, and, by comparison with the preceding narrative, some considerable nuance of meaning has been lost. That the diagram encompasses four points of dispute and 18 stances, positioned in relation to those four points, already qualifies Figure 5 as a complex graphical representation, and yet a considerable degree of abstraction has already been introduced to reduce the complexity of the overview even to that degree. In particular, the relationships between the various stances *within* each point of dispute have been abstracted away. Those relationships have, of course, previously been discussed in earlier sections and represented graphically in earlier figures; a fact that might, to some extent, compensate for how they are obscured here. Nonetheless, the reader is reminded that the relationships between the various positions and their respective points of dispute have been discussed previously: for *canon disputes* in section 4.1.7, *interchange disputes* in section 4.2.6, *functions disputes* in section 4.3.5, and *exceptionalism disputes* in section 4.4.4. The present comments, which will primarily focus on emphasising points of resonance between different points of dispute—whether in terms of commonality or distinction—should be understood in conjunction with those made earlier in these other sections, which consider, in more detail, the relationships between different positions at each loci of discussion.

The first relationship that I wish to consider is that between the *canon* and *exceptionalism disputes*. *Prima facie*, these two points of dispute are closely related, and, indeed, absent a consideration of the wider context, the distinction between them might appear puzzling. That the points of dispute are separated in my analysis, however, reflects that they are, in the underlying source materials, discussed and debated in rather different ways. The reason for that, of course, is largely to do with the history of research in the topic area. Dominant trends within TEL, as a research field, have, for a long time, looked for inspiration towards to what I have, above, repeatedly referred to as a particular reading of 'Western academic psychology'. Doing so has led the field to experience a variety of problems, which have become increasingly visible and have prompted a range of reactions. Among other things, over a long period there has gestated a sense that 'theory' (conceived in these very particular ways), while perhaps serving some purpose when studying some very particular problems, is nonetheless both (1) impotent as a tool wielded in pursuit of "application-oriented" research and (2) an obstacle to effective communication with stakeholders. Given that both of those latter objectives have long dominated the moral economy of the field, it is unsurprising that TEL is, in some quarters, a relatively anti-theoretical

pursuit. The core implication that I wish to draw out, on this occasion, is the relationship between theory development and the identity of TEL research—whether expressed via the research identities of particular researchers, or via the relations between the field and its disciplinary neighbours.

The core distinction between *canon* and *exceptionalism disputes*, in this regard, is a difference in orientation towards the relationship between TEL research and that (previously dominant) particular reading of 'Western academic psychology'. The former emphasises, in relative terms, the canon as a basis (howsoever problematic) for moving forward, and the latter, more or less explicitly, denies that basis. (There is, it should be noted, a telling absence of any position that seeks to defend the established canon *as it stands*). While the stances of *canon juxtaposition* and *canon expansion*, attempt to reconcile, in different ways, sources of knowledge external to the canon, though without discarding it entirely, an evident undertone within all *exceptionalism dispute* positions is, seemingly, a desire to escape from the prison of disciplinary psychology.

In other ways, of course, there are several points of resonance, evident across the two points of dispute. The positions of *theoretical advance* and *phenomenal distinctiveness*, for example, each share the urge to take only what is deemed necessary from whatever theoretical antecedents are being considered, before urging the field to strike out on its own in a distinct (yet, typically, univocal) direction; *horizon broadening* shares with both *theoretical co-existence* and *canon integration* a desire to locate the research of TEL within some greater intellectual enterprise; and *canon disaggregation* and *conceptual imbrication* each display reservations about the transfer of broad categories between different research endeavours.

Overall, in my view, these points reflect a three-way tension: between a desire to forge more throughgoing links between TEL and other, presumably more fully established, academic disciplines; an aspiration to support the development of TEL as a *bona fide* discipline in its own right; and a compulsion, whether from conviction or necessity, to develop better relations with those others who might be considered the field's 'stakeholders'. The observant reader will notice that there is, in turn, some discernible resonance between these tensions and the *field pertinence* and *field development* stances sometimes taken in respect of *functions disputes*. At this moment in the discussion, however, I wish to remain focussed on canon and exceptionalism disputes—since it is my contention that researchers might more usefully reflect on which of these functions theory might play, in their own research, once they have decided what they want that

research to express about their disciplinary identity.

From the vantage point of those empirical, and perhaps relatively inexperienced, researchers who might want to engage with theory more extensively, it is difficult to avoid the conclusion that important stimuli for reflection are dual questions concerning not only *what they can contribute to the development of TEL research*, but also (and I am aware that this is a slightly awkward formulation) *what researching TEL phenomena can contribute to the development of themselves as researchers*. In other words, researchers should consider, in a multifaceted way, how their theoretical choices reflect the research identity they are striving to construct for their future. As I outlined in section 3, TEL researchers are employed disparately: even those engaged within universities are located across a broad swath of disciplinary departments and service units, with different mandated job priorities and levels of employment security. That TEL is not, in most places, anything like an established academic discipline, means that relationships between theoretical development and disciplinary identity need to be engaged with urgently, as matters of practical import rather than merely as matters of disinterested contemplation.

If, as Bulfin, Henderson and Johnson's (2013) work suggests, it is those in "non-promoted" career positions who demonstrate most enthusiasm for the use of theory in TEL research, then it is important to consider how such enthusiasm might best be harnessed in pursuit of explicit objectives. Such objectives, to reprise the tensions I gestured towards above, might include (a) developing the TEL field, (b) communicating with stakeholders, and (c) developing the researcher's own scholarly identity. It is quite possible that, under particular circumstances, those objectives might be in an acute state of tension. Those TEL researchers employed in "non-promoted" positions in disciplinary healthcare or engineering, for example, might well be researching issues that most directly contribute to the literature on *education in that discipline area* just as much as to the scholarship on TEL; they might be well advised, accordingly, to reflect on their disciplinary choices when engaging with theory in TEL. Their choice to select and develop particular theories ought to reflect their *considered* choice to align with some disciplinary heritage, to emphasise the distinctiveness of TEL research, or to prioritise engagement with particular stakeholders; considerations which, in turn, might plausibly depend on their intended career trajectory at least as much as on their personal commitments to underlying theoretical paradigms. Those employed in other settings—academic social sciences departments, 'information technology' or 'library services' support units, and so on—will confront many of the same dilemmas, but might reasonably be expected

to make different particular choices in response. Of course, choosing to prioritise the furtherance of TEL, as a *bona fide* research field in its own right, is a perfectly legitimate response to such dilemmas, but it is not the *only* legitimate response, and its implications for researcher identity and career trajectory need to be carefully considered.

From the vantage point of those researchers taking the topic of theory in technology enhanced learning research as, in itself, a research object, the core question must concern what we want to field of TEL to develop *into*. Evidently, the field is moving (or has moved) away from a self-conception as an appendage of 'Western academic psychology'; the latter being viewed as an unsuitable basis for, among other things, understanding technological practice in context, pursuing imperatives for design and change (whether in respect of technological tools or infrastructures, or of technology equipped practices), or engaging with stakeholders. Academic psychology, it seems, operates at a different analytical level of granularity than TEL, and, furthermore, is not, itself, static. Indeed, 'Western academic psychology' is currently developing in disciplinary directions which might increasingly emphasise concerns, such as those of 'neuroscience', increasingly distant from those of TEL scholars (for a disciplinary critique of psychology, see Parker, 2007).

While the above comments might seem good reasons, among others, for problematising the existing canon, they do not, in themselves, proffer a definite direction for the future development of the field. Instead, it seems incumbent on those researchers considering this issue to reflect on the consequences of the field's decades-long disciplinary dalliance, and how those negative consequences might be ameliorated in future. Such a framing seems, at present, alarmingly rare; where Jones and Czerniewicz (2011), for example, correctly highlight, within the field, a trend towards what they refer to as a "sociological bent" (as discussed in section 4.4), advocates of that trend seldom seem to consider how positioning the field as an appendage of sociology might avoid some of those problems that are motivating the slow divorce from psychology. How, for example, might sociology offer a better theoretical basis for understanding local practices (sociologists, for example, are routinely criticised by cultural anthropologists for taking actual humans as static), technology design (not a core seam of expertise for sociologists), or engagement with stakeholders? How might sociological theorising overcome the problems of 'interchange' between empirical and theoretical work that have so bedevilled the field hitherto? Advocates of more "eclectic" positions, by contrast, must grapple with the reality that, precisely because its predominant underpinnings have been long recognised as irrelevant in many cases, much of the field *has*

actually been working eclectically, sometimes *sub rosa*, for a considerable amount of time; with deleterious effects for cumulative knowledge building, the field's internal coherence, and its esteem in the eyes of its stakeholders. None of these dilemmas has easy answers, to be sure, but we should at least be grappling with questions of these kinds.

The second relationship that I wish to consider is that between the *functions* and *interchange disputes*. The core point of commonality between these points of dispute is exceedingly obvious and reflects one of the very starting points for this paper: namely, that the use of theories within the empirical work occurring in the field is highly attenuated, as is, increasingly, the degree of influence of those theories on the development of the field as a whole.

Each of these points of dispute aims to problematise that situation, and to extend, in distinct ways, the attendant discussions in the research literature. Once again, the various stances taken, in relation to each point of dispute, to some extent mirror each other. *Role strengthening*, for example, mirrors *researcher insularity* where it invokes the notion that many researchers underappreciate how they already, and inexorably, engage with the world in theoretical ways; *mode distinguishing* and *empirical disengagement* converge where they highlight the necessity of considering those affordances and constraints stemming from what our theories actually 'look like'; *field pertinence* reflects *theoretical widening*, in that each expresses a desire to make research narratives better reflect the vantage points of key stakeholders; and so on. On the other hand, the relationships between the overall points of dispute are many, complex and nuanced—especially since each operates across multiple levels of granularity in different ways. In particular, while *interchange disputes* are set up in a way that directly addresses broad swaths of the field as a whole, that is done in a way that deliberately emphasises the need to overcome one particular shortcoming; functions disputes, by contrast, sometimes emphasise more granular issues (such as theory application in research projects), but do so in a relatively open-ended way.

One core point of tension that is evident from the relationship between *functions* and *interchange disputes* concerns the extent to which the core issue of theoretical 'interchange' can be addressed by reflecting more extensively upon those roles that theory plays in research. As section 4.2 has made clear, not all stances taken in relation to *interchange disputes* directly attribute blame in the same direction, and so we should not overgeneralise this point. However, it does seem incumbent on those active in researching TEL, as they proceed through their work, not only to think about this issue, but also to talk and write about it.

From the vantage point of those researchers wishing to engage more extensively with theory, the core points to reflect on might encompass, most immediately, the relationships between their 'empirical' and 'theoretical' priorities. In many cases, doing so will necessitate explicitly problematising what they mean by 'empirical' and 'theoretical', and how their conceptions relate to what others mean by those same terms. When engaging with 'theory', for example, it must be consciously appreciated that this term can, for better or worse, sometime be wrongly assumed to have meanings that are either deceptively narrow or debilitatingly intimidating; while, when engaging with the 'empirical', it will be worth unpicking how those "future priorities" being advocated (whether within scholarship, institutionalised practice, or policy imperatives) already come embedded with theoretical assumptions that might usefully be either built on or challenged. Subsequently, it will be worth reflecting, on an ongoing basis, on how theory is influencing the 'unfolding' of empirical work, both within particular research projects and between different projects undertaken either concurrently or in sequence (the latter formulation of course, hints at what has occasionally been positioned in the preceding analysis as a 'research agenda'). Doing so might involve integrating theoretical observations into research logbooks: an aspect of reflective practice which is often advocated, already, in relation to empirical aspects of research, but which is not so often emphasised in relation to theoretical development[21]. Furthermore, researchers might productively engage more in expressing to others, in their project reportage, the contributions made by theories to their empirical research. Doing so would have the dual aims, optimistically, of both enriching their own research practice and of stimulating a virtuous cycle of research communication across the scholarly domains in which they work.

From the vantage point of researchers engaging directly with the topic of theory in technology enhanced learning research, core questions must also be concerned with scholarly reflection and communication, albeit at a different scale of analytical granularity. In terms of particular research projects, it must be recognised that, with particular exceptions, the field's journals enforce writing formats that restrict, very considerably, the extent to which theoretical contributions can be considered *within empirical research reports*. Rigid guidelines, which sometimes even include heading templates; stringent wordcount restrictions; an editorial

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21 One instantiation of this idea might involve playing the "Theory Robot" game, which I advocate for early career researchers in an online video discussing "the 'theoretical framework' question" (Bligh, 2020, starting at 01:15:08). The word 'game' here is, it must be quickly admitted, being stretched to the limits of its common meaning.

aversion to the "salami slicing" of research reportage—each can contribute, in different ways, to restricting the scope for representing theoretical reflection when empirical reports are published. Furthermore, the TEL research field seldom engages in explicit scholarly discussion *in relation to research agendas* in a way that would encourage and foster extended bouts of theoretical debates and development (cf. Fischer et al., 2014). Each of these are open questions which, of course, fundamentally problematise scholarly communication in the field[22].

The third and final relationship that I wish to consider relates, in many ways, to the two paired points of dispute that I have considered, in turn, above: namely, *canon* and *exceptionalism disputes*, on the one hand, and *functions* and *interchange disputes*, on the other. While these four points of dispute encompass a wide range of differences (and the bulk of the paper constitutes an exposition of those differences!), one point of their commonality is that they each address, in different ways, the positioning of theory as something forbidding, even alien. If we consider the history of the field, and, in particular, the repercussions of that history as expressed via the *canon disputes*, then it is easy to understand how such a position has been reached; but, even now, this aspect of theory goes largely unquestioned. In my view, and notwithstanding that the difficulties will be considerable, that perception of theory must be challenged.

That, as discussed in section 3, "non-promoted" scholars are typically the most *enthusiastic* about theory is one indicator, among many, that those interested in research careers do not arrive already jaded about theory. That other disciplines and fields sustain active theoretical debates over extended periods—the interrogation of scientific models, the jockeying for position of different social-scientific schools of thought, and so—is, moreover, an indicator that those knowledge communities that can make theory seem *relevant* are also more successful at making it seem *interesting*. My own fascination with theory was initially animated, for example, by a concrete examination of how the 'same phenomena'[23] might be analysed via different theoretical lenses; the particular chapter I encountered, at a formative moment for

my own intellectual development, appears within a book by Kaptelinin and Nardi (2006), though I have since encountered more extended examples: such as those provided by Engeström (2008, Chapter 6) and Nicolini (2012, in a rolling case study that runs across several chapters). Such examples—which are, it should be emphasised, taken from across the fields of human-computer interaction and organisational studies, rather than from TEL—serve to brilliantly illustrate not only how different theories *highlight different aspects of important problems*, but also how those theories highlight *important aspects that might otherwise have been missed*. Where stances taken in relation to particular points of dispute seek to formalise or place precise bounds around our theoretical work, I view that as useful to the extent that doing so can serve as a locus of reflection and genuine *curiosity*, and detrimental to the extent that it serves to reinforce theory as a 'regime' to which all researchers must be subjected. The *canon disputes* are a stark reminder of the eventual outcomes of such regimes, in which researchers feel compelled to pledge allegiance to an edifice whose relevance they do not fully understand, and which fails to reflect their own curiosities and interests. Where we seek to develop, in tandem, both the field and its (new) theories in new ways, it seems imperative to strive to avoid recapitulating the same errors.

6. Concluding comments

The present paper, as outlined in the Introduction, proceeded from two departure points: the fragmentary nature of that scholarship which critiques theory application in TEL research, and a widely acknowledged sense that the actual use of theory in the field continues to be problematic. The current work was, on those bases, conceived as contributing to a project of synthesising and systematising those materials already extent within the field. Doing so would, it was hoped, help to both (1) move forward the debates themselves and (2) provide suggestions for those undertaking empirical work who might desire to engage 'better' with theory.

My initial analysis, whose exposition can be found in section 3, sought to convey the sense that theory application in TEL was not, in the critical scholarship, being positioned as a research object of interest for its own sake. Instead, the issue was being conceived in ways fundamentally entwined with a wider concern: to develop the identity of the field, as a *bona fide* scholarly enterprise. The analysis presented in that section, of what I refer to, following Andrews, as the "territory" of the argument, is necessarily one-sided. It sketches how the TEL field *is conceived in papers whose core*

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22 The present journal, *Studies in Technology Enhanced Learning*, of course, is a new initiative that does explicitly aim to allow for more 'varied' forms of research reportage in the field.

23 The scare quotes here indicate that, when we view a given phenomenon through a theoretical lens, one outcome may well be to challenge the conceptual boundaries we have intuitively placed around that phenomenon. In turn, we may come to understand it as a different phenomenon entirely. While completely true, I do not think that caveat invalidates the point I am making at this moment.

concern is theory application, with the corollaries that (1) doing so likely places a greater emphasis on the importance of theory than a different summary, drawing on more varied source materials, might have done, and (2) the account has a necessarily "incomplete" and "slippery" quality, since it analyses aspects of narratives that are quite often treated as auxiliary in the source materials themselves. Nonetheless, the narrative in that section is important to the overall argument developed in the paper, since it says something about the basic motives and concerns of those who take the time to write about theoretical issues—in other words, it elaborates what is taken to be at stake when theory application in TEL is discussed. Moreover, most authors do seemingly agree, albeit sometimes briefly, that a great deal *is* at stake. It would, of course, have been possible to produce an analysis that considered only the points of *dispute* emphasised in the extant materials. Yet doing so would, in my view, have been undesirable: since it is only in relation to the various lenses set up in section 3—the priorities that are emphasised of, for example, field development, escaping prior constraints, and nurturing an 'academic' identity for the field and its attendant profession—that the points of dispute considered subsequently can be fully understood.

Inevitably, however, the section comprising the bulk of the paper was that concerned with the four particular points of dispute that are evident in the underlying source materials. Section 4 positioned those points of dispute as being concerned, respectively, with issues of 'canon', 'interchange', 'functions' and 'exceptionalism'. Eighteen distinct stances were considered in relation to those different points of dispute; each is a distinct position, with a different argumentational goal, but each should be understood as subordinate to that wider point of dispute to which it is addressed. The form taken by my analysis, therefore, in presenting those debates within a particular structure, attends to my initial motivation for "synthesising and systematising" the various debates occurring in the field. The points of dispute, it is suggested, can only be understood against the backdrop of field development, and, in turn, the various stances that are elaborated can only be understood in relation to those points of dispute. The various diagrams offered throughout the paper, and the references to other sections highlighted within the exposition, are provided for the purposes of making those dependencies clear. That mapping, it is claimed, is a distinct contribution to the debates themselves, and hence to the development of the field. Among other things, my analysis suggests, as has been argued in section 5, a number of new avenues of exploration and investigation; avenues addressed both to individual researchers looking to engage more with 'theory', and to those scholars engaged in debating the issue. By addressing the fragmentary discussion

of theory application in TEL research, it is hoped, we can, in turn, better intervene in shaping the future of TEL research as an emerging field of scholarship.

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About the author

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