# Can Inferentialism help to re-vision existing modes of thinking about historical knowledge building?

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# Abstract

Distinctions - curriculum and pedagogy; propositional and procedural knowledge; facts and reasoning – frame thinking and discussion in education. The terms 'substantive' and 'disciplinary' (or first and second order) are often used within history education to distinguish knowledge about the past from knowledge about how we investigate and structure our thinking about the past. What is being separated by such couplets, how, and with what effect, deserves attention. While distinctions are helpful, once established, educators can fail to probe the basis and nature of the proposed separation and this intellectual complacency can bring detrimental consequences for teaching and learning. Teachers are ill-equipped without these couplets, but the central argument here is that they are also ill-equipped if these couplets are only understood as interdependent, complementary or indivisible. We impoverish teaching and learning without adequate appreciation of how these couplets only become distinguishable analytically and in retrospective commentary. Knowledge types in history education, are not separate in the act of knowing but in the description of the act and this insight matters to teaching and learning. This thesis explores how existing commentary about knowledge leaves educators vulnerable to the possibility of misconstruing knowledge distinctions. Inferentialism, a philosophical account of how words mean anything at all, developed by Robert Brandom (1994, 2000), is used to explore how analytical distinctions breed confusion if we fail to heed how what something is, differs from our descriptions of it. I argue that an Inferentialist account of conceptual knowledge enables us to discuss confusions arising from our analytical distinctions, and to see why this matters.

# Reflective Statement

From my early EdD modules to my Institution Focused Study and Thesis, the chief and persistent learning for me has been how very difficult it is to convey meaning with one's use of words; how difficult to impose a linear structure upon thoughts that come on top of each other, layering and reaching out in all directions; how difficult to take up barely a handful of those thoughts to share, all so fascinating, all so integral to understanding any part; how difficult to cease an activity I feel suited to, in order to force out a commentary on that activity. I have learned just how ill-prepared I am to turn knowledge into words that fall in a sequence compliant with the conventions required for communication. learned have I how write am I to ill-suited. I have sat with the tension between the activity which exists, as yet untouched by expressions about it, and what can and cannot be said about it. But I am not the whole problem. I have also considered just how ill-suited words are to convey knowledge, but also, that said, how we cannot do, would not want to do, without them.

This thesis examines how considering the nature of conceptual understanding sheds light on why teaching for historical understanding sometimes falls short and it suggests an alternative way of thinking about that teaching. Inferentialism, an account of meaning drawn from philosophy developed by Robert Brandom (1994, 2000), can contribute to current thinking in education. Brandom argues that humans are sensitive and responsive to *incompatibilities* and *consequences* that situate phenomena in relation to other phenomena and that it is helpful to take this rational or sense-making capacity as a starting point for understanding how our words or representations are meaningful. What Brandom provides is the intellectual resources to understand common classroom occurrences, resources that are not available if the question of meaning is not considered, or if educationalists rely on alternative accounts of meaning which underplay our sense-making capacities. I do not intend to imply that our sense-making capacity offers a *sufficient* account of how our words or representations are meaningful; rather, I show the educational implications of considering our sense-making capacity as *essential* to our account of how our words or representations are meaningful. I argue that the intellectual tools afforded by the Inferentialist account of meaning enable us to see how common distinctions in education, especially between knowledge types in history

education, are helpful but can also obscure understanding leading us to miss helpful ways of thinking about knowledge and teaching.

How can distinctions in education obscure understanding? A narrative of knowledge types in history education is illuminating. Before now, in an earlier context in which history education was commonly construed as teaching pupils about the past, key theorists, notably Peter Lee, Roz Ashby, Denis Shemilt and colleagues, drew attention to the way in which what we explicitly say *about the past* depends upon, and is indicative of, *our ways of thinking about how history works*, thinking that varies in appropriateness. Our view of what is, is already shaped by our conceptions of what can be. Taking learners' claims about the past as a window onto the thinking that shapes those claims, was a seminal move in advancing educationalists' understanding of history education. But decades on, this thesis explores how, if we lack an adequate account of meaning, the capacity to talk about different aspects of knowledge, its content and its form, risks an unhelpful reifying of the nature of knowledge. Unless we are mindful of the nature of conceptual understanding, the aspects of knowledge that we distinguish from each other can distort rather than enhance our discussion of knowledge and of teaching and learning. If we fail to distinguish the activity of knowing from features of our description of the activity of knowing, we can fail to see how, on the one hand, it can be helpful to talk about knowledge but on the other hand, knowledge is also inadequately construed in commentary about it. It is unhelpful for educationalists to lose sight of the sense in which couplets such as substantive and disciplinary knowledge refers to an activity which does not entail the blending of complementary knowledge types at all. An unhelpful reification of knowledge, partly the result of an obscuring of the nature of knowledge, may be evident when pupils appear to have knowledge '*of*' concepts such as cause, or change, but not the ability to use these concepts to inform the quality of their claims '*as*' historical thinkers who explain or characterise past phenomena. Knowledge reification may also be evident when an educationalist thinks exclusively in terms of reasoning as an activity performed *upon first-order* or *substantive* knowledge, thus imposing an unwarranted temporal sequence upon learning. As just one example of its affordances, Inferentialism enables educationalists to reassess the reasoning involved in what is currently classified as *first-order* or *substantive* knowledge to show how ultimately, it is not simply that we need both *substantive* and

*disciplinary* knowledge in learning history (a dominant understanding derived from existing discussion), it is that we need to understand the way one entails the other.

Exploration of the nature of conceptual meaning not only reveals how muddle can occur, but it also suggests helpful alternative ways of thinking about knowledge and teaching. For example, it may help to break overconfidence in the communicative power of explicit utterances, refocusing the teacher on how such utterances must be understood as involving the necessary learner responsiveness to the world. Inferentialism allows us to consider the qualities of pupils' learning and to identify the problem with teaching which is overly reliant upon what is uttered explicitly rather than seeing what is said as a window onto the implicit of what is understood. For the educationalist, getting beneath the explicit utterances from what is said to what is meant applies in both the case of teacher's words to students and teacher's understanding of students' words. In these ways, teaching and learning stand to be enriched by sensitivity to the *conceptual how* by which I mean a better understanding of the nature of words and concepts and how they mean anything at all.

# Impact Statement

I have presented aspects of this work at multiple conferences over the past few years (including BERA, EARLI SIG, and NOFA 7). I have also published aspects of this work such as McCrory (2015, 2017) and this work has been cited, for example Derry (2018, 2019). This work has informed my practice in history teacher education, to the benefit of my student-teachers and their pupils. I believe that if the fruitful line of enquiry pursued here is taken up, it has the potential to contribute to the work of other educationalists.

# Contents

# Chapter 1. Introduction

Chapter 1, begins by clarifying my professional context and interest, then sets this investigation within its broader educational landscape and concludes by illustrating the challenge of attempting to understand *what* we teach separately from the principles and practices *through which* we teach.

## 1.1 Interest, professional context and approach

Diverse factors make learning to teach difficult, not least that there is a lot to learn. In a prominent Anglophone tradition within the history education community, knowledge is described as entailing substantive and disciplinary, or first and second-order knowledge. As a teacher educator, I have been privy to how teachers' understandings of the nature of knowledge bears upon how they carry out their role of enhancing pupils' knowledgeability. In this thesis I use philosophical ideas examining the nature of concepts and my professional experience as a history teacher and teacher educator to discuss how student teachers seem to make sense of such distinctions and how conceptions of knowledge seem to manifest in teachers' decision making.

As a professional doctorate, my institutional setting is central to this thesis. This research was undertaken in my capacity as a history teacher educator in England. I am a lecturer in history education in a large university in the UK capital and this thesis relates to my work designing and teaching on the university-based Post Graduate Certificate of Education (PGCE) course which qualifies teachers to teach a subject specialism, typically, to 11-18-year olds.[1] Student-teachers spend two-thirds of their PGCE time on placement in school and one-third of their time in university-based study, with colleagues working on the PGCE course ascribing to the view of teaching as practical theorising (Hagger & McIntyre, 2000).

This investigation arises from my interest in understanding variation in learners' knowledgeability and teachers' influence upon learners' knowledgeability. There are two prongs to my own involvement in learner outcomes. First, I and my student-teachers were

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[1] The PGCE on which I teach is a one-year university based higher education course in England, Wales and Northern Ireland which allows graduates to become teachers within maintained schools.

often frustrated by pupil outcomes arising from student-teacher teaching. Second, and paralleling the first consideration, I, in my own capacity as a teacher educator, was frustrated by the limitations in student-teachers' understanding arising from my teaching on the History Post Graduate Certificate of Education (PGCE) programme. Although different, it seemed to me that the two concerns were intimately related. In my work, I could feel a clear distinction between teaching which seemed to fall on deaf ears and teaching were learners' (both pupils and student-teachers) became increasingly adept in the rich responsivity entailed in concept formation and use. It also seemed to me that our theorisation of knowledge, what we think concepts are, as expressed indirectly through what we say about knowledge and how we treat learners' conceptual development in our teaching, contributes to strengths and limitations in resultant learning, both in pupils' historical knowledgeability and in student-teachers' history teaching.

Educational literature acknowledges a range of influences when discussing why teaching is as it is, or how it should be. Frequently, instructional design and enactment is said to be a certain way because of the nature of the discipline being taught, or because of what we know about features of novice learning, or because of what we are educating young people for. Typically omitted is consideration of what conceptual knowledge *is*, or rather, what educationalists think it is to know conceptually. I take up this gap in current theorisation about what it is for concepts to be meaningful. How educationalists seem to think and talk about the nature of knowledge is taken here as a theoretical not empirical question. I explore educationalists' theorisation by comparing our stories about knowledge and knowledge development to practice-based occurrences. As a professional doctorate, the practice-based occurrences I use are illustrative of considerations and are drawn from my current experience working as a history teacher educator.

The philosopher Robert Brandom's work on Inferentialism, his account of how we can think of our concepts as constituted by our responsiveness to implicit inferential relations, struck me as a helpful way to think about my every day professional experiences of teaching and learning. Jan Derry (2008; 2014; 2017; Bakker & Derry, 2011) has broken new ground in examining the educational implications of developments in philosophy which explore what concepts are, specifically Robert Brandom's (1994, 2000) work on *Inferentialism.* Brandom's work is considered significant, as Derry (2017:404) explains, "inferentialism offers a powerful

analytical tool to examine human activity through a more fine-grained account than is generally available within social scientific research. Indeed, Stekeler-Weithofer sees Brandom's major work *Making it Explicit* as developing a new perspective that sets a standard for "a whole field of knowledge, thinking, and research" (Stekeler-Weithofer, 2008, p. 1)." It seemed to me that I was reading in Brandom the words that helped to give voice to my experiences. But an intuitive recognition that someone else sees as you see is not an articulation of what might be going on in my professional experiences.

This study is undertaken from a realist perspective. To my mind, Inferentialism helps articulate knowledge and knowledge development without over or under playing the learner's activity of thinking, without either losing sight of the world beyond the individual's cognitive *activity* or reducing knowledge to an *entity* existing beyond knowers and their knowing activity. Moreover, Brandom's work offers a new perspective with which to scrutinise common theorisation, including the couplets such as curriculum and pedagogy, procedural and propositional knowledge, substantive and disciplinary or second-order knowledge, which are commonly used to frame discussion of knowledge and knowledge formation in education. For example, existing theorisation invokes two distinct knowledge-types to explain shortfalls in learners' understanding; learners might be said to know facts (one type of knowledge) but are unable to reason with those facts (another type of knowledge), but Inferentialism enables us to see how classifying knowledge into such types can be helpful but can also be unhelpful, requiring a better articulation of how these knowledge types can be understood.

This study is pragmatic in stimulus, outcome and approach - to create a theoretical account that arises from, and can inform, teaching and learning in the classroom. Inferentialism matters in the classroom in so far as Brandom's consideration of how a representation is thought to represent can help educationalists to foster pupils' conceptual knowledge. The aim is to add clarity to discussions occurring in my daily work, through what the philosopher Richard Rorty (1980) would refer to as a new 'vocabulary', so that discussion, including disagreement, can be based on understanding not misunderstanding. As a teacher-educator, I am interested in exploring a vocabulary to articulate that which some practising teachers undoubtedly already understand tacitly in their work, but may not have the words to talk about, in order to facilitate the knowledge development of those who wish to understand

and discuss more. I conclude that a new 'vocabulary', or way of talking about knowledge and knowledge development, arises through giving greater attention to conceptual meaning and how it is constituted.

Part 1 of this thesis (Chapters 1-3) identifies how knowledge and knowledge development are construed in history education. I explore the current limits of prominent knowledge theorisation drawing upon the literature of the history education community (literature which is commonly available to student teachers and the school-based mentors who support them on placement) and my own professional experience of teaching history and of history teacher education. Part 2 of this thesis (Chapters 4-5) investigates how the philosophy of Inferentialism, developed by Robert Brandom (1994, 2000), can help identify and account for current limits in existing theorisation while offering an alternative.

Having introduced the interest, context and approach of this thesis in Chapter 1, Chapter 2 begins to examine the limits in existing theorisation. It explores how knowledge and knowledge development has been theorised in history education within an influential Anglophone tradition as entailing substantive and disciplinary or first and second-order knowledge. Chapter 3 continues an exploration of the existing theorisation by exemplifying problems evident in teaching that is informed by this tradition. Chapter 4 shows how Inferentialism offers educationalists a theoretical basis for thinking about the role of *content* and cognitive *activity* in knowledge development. Chapter 5 uses an Inferentialist-informed perspective of knowledge and knowledge development to attend to crucial yet often underexamined teaching considerations. I then suggest a re-visioning of knowledge in teaching and learning, afforded by an Inferentially informed theorisation of conceptual content.

As a professional doctorate, my investigation arises from, exists in, and will be applied to a broader educational landscape. The diverse and changing ways educationalists construe knowledge and knowledge development is not just situated in this context, this context shapes and reveals these theorisations. Education in England occurs within a turbulent and influential political context. Government is a major driver of educational reform in the UK, thus changes in government usher in changes in regulations governing national examinations,

curricula and accompanying recommendations and policy. Whether acknowledged or not, these changes reveal something of what is understood by the concept of knowledge and knowledge development in education. These diverse views can be said to belong to a time, a place, and sometimes to a group within society. Thus, the remainder of Chapter 1 contextualises this professional doctorate introducing key issues through a brief discussion of the broader educational landscape before offering a concrete example of how knowledge theorisation manifests in the classroom.

## 1.2 Current educational context: separating content from activity

The following section does not survey the educational context but gives a sense of current contextual issues pertinent to knowledge theorisation as it relates to my thesis.[2] I suggest this context is one of uncertainty about the nature and interplay between educational *content* and *activity*.

### The 'knowledge turn'

Within the English context, government, perhaps more than any other single influence, has the power to determine the shape of education. A change in England's leading political parties means a change in education. For example, since 2010, the Government has used its influence to undertake what has been described as the 'knowledge turn' in education in the United Kingdom (Lambert, 2011:243). The DfE framed this change as a move *away from* a generic, content-blind, skills curriculum taught through wasteful discovery techniques such as enquiry and *towards* learning disciplinary facts taught through direct instruction (Gibb, 2015; Yandell, 2017; Cain and Chapman, 2014; DfE, 2018). Describing its intent, the Government has said (DfE, 2018:4),

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[2] Key perspectives needed for a comprehensive summary of the contemporary landscape would include the influence of cultural literacy models of what education should be (Hirsch 1987, 1999). Another key component of that landscape is the strong emphasis on content knowledge understood as propositional knowledge derived from elements of cognitive science (Kirschner et al. 2006). I have selected one influence on the current context, the idea of 'Powerful Knowledge' from the sociology of knowledge, which allows me to discuss key issues which would be fleshed out but not significantly altered by including the other influences.

> As part of the last review of the National Curriculum, we benchmarked our curriculum against those of high performing jurisdictions and found that they set higher expectations without compromising curriculum breadth. The Department therefore reformed the National Curriculum in 2014, and subsequently the GCSE qualifications, so that we set world-class standards across all subjects.

The Government has been explicit in its promotion of three 'pedagogical considerations' which it sees as a 'coming with' these changes, namely, 'a 'knowledge-rich' curriculum, whole-class teaching and teacher-led instruction' with 'teacher-led instruction' juxtaposed against 'enquiry based or child centred approaches' (DfE 2018:5).[3]

The extent to which this 'knowledge turn' (Lambert, 2011:243) is positive is a matter of debate. The Annual Historical Association Survey conducted by Harris and Burn (2011) collects information about attitudes and practices in history departments across England, making it possible to track changes, many of which may be attributed to government initiatives. At the time of writing, their most recent surveys chime with my own experiences as a teacher educator. Anecdotally, from the scores of history departments that I visit in London, teachers report how changes to national examinations taken by 14-16-year olds has led to their teaching being increasingly caught up in covering factual content at pace, at the expense of pupils' having adequate time to think about the nature or significance of that content.

Much impetus for this latest curricular change, or 'knowledge turn' (Lambert 2011:243), has been garnered from the work of Young and Muller within the sociology of education. From 2008, Young, Muller and colleagues have helped to draw attention both in the UK and internationally to the role of knowledge in the school curriculum (Young 2008, 2009, 2013; Young and Muller 2010, 2013; Muller 2009, 2014; Young, et. al 2014). Their work provides a helpful way to describe the issues at stake in the educational context of my discussion. Working within the sociology of education, they characterised three broad curricular scenarios or 'Futures' (Young and Muller 2010, Young, et. al 2014):

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[3] These latest changes to curriculum, pedagogy and assessment can be seen as one example of a broader traditionalist versus progressive debate spanning numerous countries, from the UK (Guyver 2011; Lee 2014), to Australia (Taylor 2004; Yates, 2017), Canada (Peck 2005), the United States (Hirsch 1999), and South Africa (Hoadley 2011).

**Future 1.** Teaching dominated by conveying the *what* of disciplines reified into their products, that is, a curriculum said to be comprised of what historians or mathematicians or geographers and so on, hold to be true. In 'Future 1' the *how* of knowledge-building or meaning-making risks being side-lined by an emphasis on the *what* of disciplinary products.

**Future 2.** Teaching dominated by concern for the methods of teaching and a focus on the processes by which pupils would learn to develop new knowledge (given the importance of the transferable skills that they would need to face the unknown challenges of the future). In 'Future 2' the *what* of disciplinary knowledge risks being side-lined in favour of the *how* of pupils' social co-construction of knowledge.

**Future 3.** Teaching disciplinary knowledge to all, including the practices and heuristics of the disciplines. 'Future 3' involves Young and Muller's concept of 'Powerful Knowledge' (2013). [4] 'Future 3' was proposed as the most empowering curricular scenario given the more authentic disciplinary basis of the curricular offer.

The Futures 1-3 framing facilitates discussion of how educationalists describe or think of knowledge. For example, a subject like school history can be thought to consist in a discipline's *product* as in Future 1 when pupils are taught to understand what historians hold to be true about the past; or school history can be thought to consist in the discipline's *product and practice* as in Future 3 when pupils are taught to understand what historians hold to be true about the past *and* how historians arrive at and revise what they hold to be true about the past. I use this '3 Futures' framing below to introduce education's political context in the UK, but also to identify problems with attempting to attribute these 'Futures' to broad eras in UK education and to discuss the problematic way in which the relationship between education's *what* and *how* receives inadequate attention.

The '3 Futures' do not correspond to political eras

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[4] The phrase 'powerful knowledge' was intended in contrast to earlier concerns about curricular approaches through which only a small proportion of pupils seemed to gain access to what was described as the 'knowledge of the powerful'.

Young, Muller and colleagues' curricular question of *what* subject-specialist knowledge should be taught in schools was welcomed by those who felt that a concern for the substance of the curriculum was overlooked in Labour Government reforms (Standish & Cuthbert 2017). Thus, one might associate the Conservative-led governments' education initiatives described above as the 'knowledge turn' (Lambert 2011:243) with Future 3. Accordingly, Future 2 may seem to correspond to the Labour Government (1997-2010) education policy which promoted teachers' concern for pedagogical knowledge and sought to support pupils' cross-curricula thinking. There are, however, a number of problems with attributing the 'Futures' thus. For instance, any perceived lack of subject-specialist focus during the Labour Government era from 1997-2010 (Standish & Cuthbert 2017) was not experienced equally by all teachers or across all subjects. Some teachers operating with access to strong subject communities, such as history education, generated and sustained robust curricular thinking about *what* knowledge mattered (the product *and* the process of historians' work) and what such knowledge development in learners entailed (Counsell 2011), despite contextual pressures or governmental interests (Harris and Burn 2011).

Another problem with imagining a most recent, Conservative-led government Future 3, Labour Future 2 and a pre-Labour Future 1 is that what Young and Muller mean by Future 3 and the idea of Powerful Knowledge, is not a feature of the last decade but has a long heritage in history education (Shemilt 1980; Lee 1991, 2011, 2014; Seixas 1993). Decades earlier, Shemilt (1980:26) captures something of the spirit of what Young and Muller would later distinguish as Powerful Knowledge, or as the contrast between Future 1 and 3:

> Whilst children can be more or less well informed about the
> conclusions of expert enquiries into the past, they are only educated
> to the extent that they possess understanding of the methods, logic
> and perspectives proper to these enquiries.[5]

History's subject literature reveals something of a watershed beginning during the 1970s and 1980s, when the distinction 'New History', for example, marked a change in mainstay education from knowledge conceived as 'body' (historians' product, or subject content to be learned) to knowledge as 'body *and* form' (what is already known *and* a way of knowing, of

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[5] Shemilt (1980) was reviewing the Schools History Project's first systematic attempt to teach for pupil understanding of disciplinary knowledge.

finding out and structuring knowledge).[6] Long before the introduction of a national curriculum in the 1990s, the maturation of pupils' own disciplinary heuristics and methodological practice had become recognised as important for historical learning (Kitson et al., 2011: 44-52). Proponents characterise the 1970s 'new' theorisation of knowledge in school subjects as allowing history education to be about more than the extent to which students can recall other peoples' knowledge of the past (body of knowledge or product of historians' work). By this reading, there is little recent, about Future 3 or the importance of disciplinary knowledge within history education.

Perhaps the most pressing issue with imagining a post-Labour Future 3 (subject-specialism as *product* and *practice* or knowledge with body and form) is the current category conflation. Problematically, folks of quite different persuasions all claim to be advocating for Future 3's 'powerful knowledge' (Gibb 2015; Yandell 2017; Lambert 2018a; 2018b). Gallingly for Young (2018), the aspiration to teach learners to develop a disposition to ask particular sorts of questions related to particular facets of the world and to pursue their answers in particular discipline-informed ways (Future 3), has been reduced in some instances to the recollection of reams of content (Future 1) in the name of a 'powerful' or knowledge-rich curricula (Gove 2008, 2013, Young 2018). Those in academia, such as Young, Muller and colleagues, who favoured problematising the role of knowledge in education took pains to define Powerful Knowledge as open, contested, socially constructed yet subject to the rules of the relevant disciplinary community (Future 3). To their minds, the revival of interest in curriculum over pedagogy was not envisioned as a return to the transmission of a fixed canon (Future 1). Young, Muller and colleagues have lamented the ways in which their advocacy for the role of subject-specialised knowledge in education has been taken by some, in government and in some high-profile schools, as an invitation to promote a curriculum closer to Future 1 than 3.

## Category confusion and contestation

Reflecting on the characteristics of the current discussion of knowledge in education, there is much simple category confusion and a lack of basic understanding. See, for example, the recent misunderstanding of the role of enquiry-based lesson sequences in history education

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[6] Whilst Lee (2014) draws attention to the way in which 'New History' was interpreted diversely, in broad terms, 'New History' turned attention towards knowledge as a form and not just a body of knowledge.

(HA News, 2018; Chapman, 2018). Crude confusion arises if someone assumes that the *activity* in the lesson is a *pedagogical* concern while the *content* in the lesson is a *curricular* concern. Since the curricular *what* or object of teaching and learning has expanded beyond the *product* of historians' work to include *practice* or disciplinary dispositions and reasoning, some commentators confuse activity in a pedagogical guise with activity in a curricular guise. For example, if a teacher is pedagogically motivated to set source questions to make the facts in the lesson more interesting, working with sources is considered in a *pedagogical* guise. The evidential understanding that may be secured through source handling is not the teacher's curricular point. The source handling is simply one of a range of potentially suitable pedagogical means (creating interest) to achieve a different curricular end (learning facts). One could argue that pupils might be just as interested and knowledgeable about the facts had the activity selected not been source questions but teacher exposition. Lesson activity is framed here as a pedagogical consideration – *how* best to learn something and not a curricular point about *what* is being learnt.

On the other hand, if a teacher sets the same source questions because they want their pupils to understand something of how historical accounts are constructed, the activity is not just a *pedagogical activity,* it is simultaneously a *curricular activity*. In this example the teacher may believe that one learns to better handle sources through handling sources, but this is not simply a pedagogical consideration. The teacher's choice of activity is informed here by what it is about the practice or activity of history that they want pupils to learn to do. The activity is simultaneously the *what* and the *how* of the lesson segment. The teacher may believe that pupils learning to better handle sources is a cognitive process in the practice of history that is *as* important for pupils to learn *as* learning the facts that historians have derived from their handling of sources. Framed thus, this is a curricular consideration about what should be taught.

At the most basic level of confusion, education's *what* and *how* terminology can become entangled because commentators miss how *activity* in learning appears in two senses in the discussion – the activity framed as pedagogical or as curricular considerations. The point is that when the curriculum includes historians' product *and* practice, when the activity is both object and means, teachers may consider lesson activity as a pedagogical activity and / or a curricular activity. Thus, in history education, when pupils learn to enquire, they are engaging

in a teacher's curricular choice about *what* to learn and not just a pedagogical choice about how to learn. A level of expertise and precision is needed if discussion of the educative pros and cons of teachers' choices is to be meaningful.[7]

Much is also contested within the educational context of this thesis. Beyond category confusion, there is much debate because discussants differ in their premises, for example, on whether or to what extent educationalists can or should teach for pupil comprehension of factual content versus for the thinking needed to use knowledge creatively and independently (Christodoulou 2014) not simply as a comment on what should be taught but also as a comment on how best someone learns something. Thus, even if discussants began from the assumption that education for both a discipline's *product* and *practice* is both valuable and achievable, and had a clear understanding of the concepts involved, dispute would continue based on different ideas about how to achieve such knowledge. Thus, rather than simply an aversion to knowledge of disciplinary practice, many who advocate learner memorisation of factual content believe it to be a temporal prerequisite for, and the means through which, disciplinary thinking emerges.

## Limitations of existing conceptions of conceptual knowledge

The previous discussion of how the current educational landscape in England is commonly framed and how it can be confused and contested, provides background; however, a further vital consideration arises from this contextual discussion. Having decades of experience of 'Future 3', that is, of teaching for Powerful Knowledge, history education provides a cautionary tale when it comes to splitting the curriculum into knowledge about the discipline's *product* and *practice*. Research within history education (as explored in Chapter 3), indicates the limitations that persist in pupils' disciplinary thinking despite an apparent adherence to a Future 3 or disciplinary based curriculum (Shemilt, 1980; Stoel, Van Drie and Van Boxtel, 2015, 2017; Reisman, 2012). I do not raise this point to undermine teaching for a disciplinary based curriculum but rather to further teaching for disciplinary understanding. My point is that if a significant number of those working in history education *already* subscribe to curricular models that seek to develop knowledge of both disciplinary practices and

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[7] I will argue that a consideration of the conceptual how, or the activity of making representations such as our words stand for something, sheds an entirely different light on the above discussion of category confusion.

products and yet the returns remain disappointing, adherents of 'Powerful Knowledge' or 'Future 3' must face that shortfall. What more needs to be done – or what needs to be done differently – in order for educationalists to achieve their ambition that all pupils should become knowledgeable or capable of disciplinary thinking informed by subject-specialist knowledge?

Learning has an emotive and regulatory aspect. Social relations and structural resources matter in education. But this thesis takes up the need for refinement from within curriculum theorisation, from within conceptions of knowledge and knowledge formation, to further our explanation of variation in learning. The thesis forwarded here explains how existing calls to integrate teaching for *both* knowledge of the discipline's *product* and *practice* will not suffice, how attempts to clarify the different possible classifications of knowledge and knowledge formation, without examining the foundations of such distinctions, will not suffice. England's educational landscape may seem confused and contested in the ways described above, but the ambition of those wishing to realise a disciplinary curriculum is not being held back simply by misunderstandings of existing theory or by theoretical differences about what should be taught and how. Rather, theorisation of what conceptual knowledge *is* must develop further for the purposes of teachers' decision-making if we are to realise the potential of disciplinary curricula or 'Powerful Knowledge' or 'Future 3' and understand the differences discussed above.

## 1.3 Knowledge theorisation and the chalk-face practice it seeks to theorise

The following classroom example illustrates the shortfall in existing discussion if it fails to adequately theorise the distinction it draws between curriculum and pedagogy, or content and activity. Later chapters explore the relationship between these distinctions, particularly the distinction between knowledge-types within school subjects, between *first* and *second-order* or *substantive* and *disciplinary* knowledge.

Choosing the content for a ten-minute segment in a Year 8 lesson, a history teacher has selected an engraving from the National Portrait Gallery depicting Charles I's execution in front of crowds of spectators outside Whitehall (Appendix 1). The image is the *content*. The teacher will ask pupils to work in pairs for three minutes, to look at the picture and identify

three things which they notice at first glance, for example, the building, the crowds, and so on, and three things that someone might miss if they only glanced at this image, for example, the number of parents with children, the number of people that are upset. The noticing details is the *activity*.

Consider various possibilities: the teacher may have paired this content to this activity as a stimulus or hook. As the class embarks on the new topic of the English Civil Wars, the teacher hopes to peak pupils' interest and encourage curiosity. By not supplying information about this episode before engendering a pupil demand for information, the teacher is using the lesson segment to create what the American philosopher John Dewey (1910) referred to as a 'felt difficulty'. *The purpose* of this *content-activity* pairing is increased pupil inquisitiveness.

A second possibility is that the teacher may have noticed the casual, throw-away manner with which the class disregard sources too quickly. By asking pupils explicitly to attend to the image details, the teacher wants to encourage pupils to linger over what they see. In this case, the segment has been designed to teach or test pupils' ability to look closely at each part of the picture and notice what they might otherwise miss. *The purpose* of this *content-activity* pairing is more attentive source scrutiny.

Alternatively, it is equally possible that the teacher has chosen this content-activity pairing because they want to help pupils to understand the very public nature of Charles' execution and the diverse response to it. In a society which attempts to impose age restrictions designed to shield its young from the portrayals of graphic violence, never mind their occurrence, this teacher may wish the class to encounter the foreign culture of their predecessors. *The purpose* of this *content-activity* pairing is a better sense of period.

As the teacher steers feedback in the remaining six or seven minutes of the activity, the direction of discussion and the quality of the pupil learning is influenced not simply by the teacher's content and activity choice but also by whether the teacher has made their selection because:

(i)     they want to draw pupils into their study, mindful of pupils' affective relationship to their learning;

(ii)    they want to encourage a more disciplined approach to source handling, or

(iii)   they want to convey factual details about the period.

Might the ten-minute segment achieve all three learning intensions simultaneously? Quite possibly, however, if the teacher were to write or enact such a plan, drawing explicit attention to all possible learning within all lesson content and activities, they would quickly find themselves running out of space, time, and most probably pupil attention too. This example helps us to recognise the challenge of asking where the *what* of teaching and learning ends and the *how* begins. Is the curriculum in this ten-minute segment the content-activity pairing for a purpose for *these* pupils towards a broader outcome, or is the curriculum some fraction of this combination, and what of the pedagogy? Which part of this segment is the pedagogy and not the curriculum? To extract one element of this scenario for attention in isolation from the others and without understanding that the knowledge taught is not one element but the result of the whole, is to risk distorting the curriculum. Change the content (the image), the activity (the noticing details), or the purpose (whichever of the three options the teacher selected) in this segment, and you have changed the curriculum.

Learners need educationalists capable of theorising, scrutinising and acting upon the whole. For the purposes of planning, teachers need to be able to make an analytical separation of *what* from *how* on a macro level, which describes lesson materials and activities, but without misunderstanding how content, activity and purpose in combination define '*what*' is being taught and learnt. This thesis sets out to explain how helpful it is for teachers to understand why it is, and why it matters, that conceptual understanding does not separate straightforwardly into couplets such as disciplinary *product* and *practice* or *curriculum* and *pedagogy* or *content* and *activity*. This thesis explores how the question of the relationship of *what* and *how* in education, as it appears in various manifestations such as *content* and *activity,* or disciplinary *product* and *practice,* or *substantive* and *disciplinary* knowledge, can be understood differently, through a consideration of the nature of conceptual knowledge. I argue that a consideration of the nature of representation breaks new theoretical ground in education and reshapes existing understanding of knowledge and knowledge formation, with a view to enabling teachers to optimise the effectiveness of their teaching decisions.

# Chapter 2. How has knowledge and knowledge development been theorised in an influential Anglophone tradition within history education?

Three important tenets to the theorisation of the nature of knowledge and knowledge formation in history education, as described by influential voices within the history education community in England, include:

(i)     Knowledge-types in history (*first* and *second-order* or *substantive* and *disciplinary* knowledge), that is, history as 'body of knowledge' but also as 'form of knowledge';[8]

(ii)    Learning as conceptual change; and

(iii)   Enquiry as teaching device and as disciplinary practice.

Each characteristic is discussed in turn and related challenges are discussed further in Chapter 3 before Chapter 4 and 5 show how new and helpful perspectives are made available through an explicit consideration of what concepts are. In the following discussion, knowledge-types receives most attention as it is pivotal to understanding knowledge theorisation in the history classroom. At issue is the nature of the knowledge-type distinction, not an enumeration of which concepts ought to be included in a curriculum or why. Before setting out the existing description of knowledge in an influential tradition of history education, there are five preliminary comments facilitating the subsequent discussion.

## 2.1 Preliminary clarifications and acknowledgement

First, **existing expertise and theorisation**: the authors writing within the history education community included below are taken as illustrative of an 'influential group'. I have selected leading academics in history education who have researched and written explicitly about the nature of knowledge in history education and whose commentary is typical of a broad

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[8] The 'body and form' knowledge-type distinction discussed in the first section relates to seminal research described in the second section on conceptual change. Early theorisation of *knowledge-types* is based on the empirical research of Lee and colleagues based in London, and Shemilt, based in Leeds.

consensus in the published discourse.[9] It is important to recognise, however, that this 'influential group' is not representative of history education as understood by all history teachers or experienced by pupils in all history classrooms in England. Although these influential voices do not represent *as* homogenous a group as implied in this section, nevertheless, much fundamental agreement exists on many of the broad principles discussed below.

Second, **ambiguous terms**: a challenge to be aware of in the following discussion is the varied use of terms in the literature. I use the term *knowledge-types* to capture the general idea which could be referred to as 'dimensions', 'aspects', 'components', or 'types' of knowledge in the literature. The suitability and parameters of the very notion of *knowledge-types* is the matter at hand in this thesis; it is difficult to begin with clear definitions because the point is that what is meant or understood by these ideas is insufficiently clear. Generally, *substantive*, *first-order* and historians' product or 'body' of knowledge seem to be used similarly in the literature to capture one type or aspect or facet of knowledge. Paired to these terms, *disciplinary*, *second-order* and 'form' seem to be used similarly to capture another, distinguishable type, aspect or facet of knowledge. The ambiguity and plurality in meaning is precisely the issue to be taken up below.

Third, **open and closed**: although not a pronounced or explicit feature of the existing discourse considered below, the notions of 'open' and 'closed' can be helpful when thinking about knowledge characterisation in history education and so warrant a brief description. 'Open' and 'closed' can be used to designate the difference between things about which experts within a field would consider there to be, or not to be, a fact about the matter. 'Who won the Battle of Hastings?' is a more 'closed' question, in the straight-forward sense of being something that has only one answer which typically has already been established and is part of the currently agreed 'body of knowledge'. Whereas a question on 'the scramble for Africa' such as, 'How different were the motivations of participants at the Berlin Conference in 1884-5?' is, on the face of it, a more 'open' question not only because there is not a fact of the matter but also because there never could be a fact of the matter. Questions considered more 'open' in history education are questions in which different answers can be substantiated and

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[9] I feel privileged to look upon these educationalists as respected colleagues.

justified without those answers being contrary to either reason or the available evidence base. It is not that answers are *yet* to be known, if only we had the means and will. 'Open' here does not describe a lack of answer to questions which are potentially knowable. It is that the subject matter under investigation is of a nature that precludes verifiably definitive answers. It would be unreasonable to assume such questions could be settled to the exclusion of other answers on the grounds of reason and evidence. No amount of investment will produce *the* definitive answer to an 'open' question because it is, by definition, about something that can rightly be variously answered through debate, argument and expression. As explored later, it is the 'openness' of some questions that brings benefits and it is unhelpful to characterise matters related to questions characterised as 'open' in contrast to 'closed' as inferior or simply unknowable.

Fourth, **disciplinary**: the characterisation of 'disciplinary' in history requires clarification.[10] The term *disciplinary* can be used in contrast to *substantive* knowledge to refer to knowledge related to the practice of history, as discussed at length after these preliminary clarifications; however, there are two further senses in which the term can be used. First, disciplinary can be used to suggest one relationship with the past. That humans frame *here* and *now* using individual and collective memories of the past and hopes for the future seems universal (Rüsen 2005). We are not, however, uniform in the way we situate ourselves and others in the temporal stories we tell about what has happened and why. 'Disciplinary' can be used in an effort to contrast different ways of relating to the past (Paul 2015). For example, communities commemorate and mythologize the past, they use the past to promote tourism or attempt to create group cohesion. For Wineburg (2007), a polite dinner conversation with a grandparent recollecting their childhood is a game played by different rules than the disciplined work of historians. A 'disciplined' approach to the past is one way we can relate to the past. Methods of disciplined enquiry replace memorisation and veneration in more disciplinary history. Historians are inducted into, maintain, and revise their methods of enquiry (Lorenz, 2001; Megill, 2007). Historians use enquiry to further the frontiers of knowledge about the past and our handling of it. They use enquiry to participate in existing

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[10] Whilst I acknowledge the difference between the two knowledge sites, school and academia, I am using the word discipline and disciplinary in this thesis not to distinguish academic disciplines from school subjects, but in the sense raised in Chapter 1, to capture the notion that school pupils are to be taught the product and *practice* of history.

discourse through understanding the status and warrant of each other's knowledge claims. It is through understanding the conventions of acceptable scholarship that historians can rely on the cumulative wealth of the community within which they work (Bernstein, 2000; Young, 2008). Some commentators include the word 'discipline' to signal this academically oriented relation to the past, while others reserve the word history for a disciplined approach contrasting it to other approaches which they refer to as heritage and not history. Whether school history ought to be occupied exclusively with disciplinary history, with this one, academically oriented way of relating to the past, is another area of debate. For some, there are other goals *within* history lessons such as redressing social injustices or educating for participatory citizenship (Barton and Levstik 2004).

There is another sense in which knowledge can be described as more or less 'disciplinary'. When the curriculum includes the notion of historians' *practice*, pupils' understanding can be thought of as *more* or *less* disciplinary along a continuum of variation in how successfully or appropriately pupils' thinking accords with the conventions and heuristics which underpin historians' practice. The distinction of *more disciplinary* refers to the notion of progress in historical understanding *within* the disciplinary approach, not as a contrast to the pursuit of other relationships with the past. In this sense, more or less disciplinary is a gradation distinguishing between the historical *practice* of more novice versus more expert enquirers (Wineburg 2001, 2007).

Finally, **knowledge-types as a helpful framing**: before attending to the possible limits of current characterisation of the knowledge-type distinction, I want to be clear that I view knowledge-types as a helpful framing, thus I hope to mitigate against being misconstrued as arguing against a knowledge-type distinction. A distinction between knowledge-types arises in part from the history education community's desire to show how curriculum theorised simplistically as the *product* of historians' work, or as the comprehension of the facts established by historians, is insufficient. Chapman (Cain and Chapman, 2016:116), for example, in an effort to counter what he sees as the influential American educationalist Hirsch's (1987, 1999) characterisation of knowledge as a question of the number of important pieces of information known by the pupil, writes,

> Wineburg's studies show, first, contrary to Hirsch's hermeneutic claims,
> that historians read in particular ways that embody epistemic beliefs and

assumptions, and second, contrary to Hirsch's claims about the importance of specific information, that the possession of information alone is not what makes the difference between experts and novices. What does make the difference is knowing how to read historically, or, to say the same thing in a different way, mastery of domain specific conceptual and procedural understandings.

Chapman (2016:117) explains,

> Children who are rich in information, Wineburg shows, may simply read informatically and demonstrate poor historical understanding because they hold questionable epistemic beliefs. They are, one might say, historically illiterate. To help them to read historically we need to equip them with disciplinary understanding as much, if not more than, with information and where subject disciplines like history are concerned, 'core knowledge' is not an agglomeration of singular factual statements committed to the long-term memory: the core knowledge essential to reading history includes domain specific concepts and epistemic beliefs (Gardner, 2000).

Arguing against the view that 'extensive background knowledge' is sufficient to understand history, Chapman continues (2016:117)

> 'Interrogating sources' in history is certainly not a generic critical thinking skill: it has conceptual dimensions (a concept of evidence) and a procedural element (modes of reading and interrogation) and knowing any number of facts about the historical context of an historical document will not help students interrogate that document as evidence unless they have some knowledge and understanding of the concept of evidence and some understanding of how to ask questions and of what questions to ask (Ashby, 2011). To know a discipline is to know and understand it as both a body and as form of knowledge: knowledge that has body but no form is as valueless as knowledge that has form but no body.

In the above extracts, Chapman (2016) describes the knowledge-type distinction to be explored more fully below. Essentially, Chapman (2016) is arguing against the danger of not appreciating different knowledge-types. Whilst I agree that naïve notions of knowledge are problematic, in this thesis I argue that knowledge-types, whilst potentially a useful distinction, can also nevertheless be ambiguous and can be construed in problematic ways.

## 2.2 Knowledge-types: History as a 'body of knowledge' but also as 'form of knowledge'

Following Bruner (1996) and Hirst's (1974) description of disciplinary knowledge as having both 'body and form', history educationalists have explored different *orders* of knowledge (Lee & Shemilt, 2003; Counsell, Burn, & Chapman, 2016; Lee, 2014). I start by briefly paraphrase the existing thinking. Beginning by paraphrasing the distinction allows the reader to gain a sense of the range of markers used to distinguish the two knowledge-types but I acknowledge that by not beginning with a clear definition of the knowledge-types, I provide a cluttered start to the task of furthering the existing theorisation. In part, I claim that there is no sufficiently clear definition, and there cannot be one until the work of understanding the nature of conceptual understanding is taken up more fully. My thesis is that the limitations arising from the existing knowledge theorisation discussion cannot be made clear without a fuller consideration of the inferential *conceptual how* discussed in Chapter 4 and 5.

The following paraphrasing, supplemented with typical extracts from the literature, is discussed below using my professional encounters with student-teachers' understandings. My experience of student-teachers' perceptions is offered as a window to help reveal ambiguities in the existing theorisation. I hope to show how the distinction can evoke a sense of *strong separation* between knowledge-types which raises the concomitant problem of how to teach for both types of knowledge.

### What is first and second-order knowledge (also referred to as substantive and disciplinary knowledge, and knowledge with both 'body and form')?

Paraphrasing descriptions of the knowledge-type distinction in the history education literature, *first-order* knowledge refers to a *body* of knowledge about *the past*. It is said to pertain to particulars: *this* person (Henry VIII), *this* place (Hampton Court) or *this* event (The passing of The Act of Supremacy), and it includes what is referred to as *substantive* concepts such as peasant, trade, law, tax, equality or technology. *First-order*, or *substantive* knowledge, that is, knowledge about *the past,* is also said to be the *product* of historical investigation. Often, *first-order* or *substantive* knowledge tends to be considered as factual or 'closed'; the type of knowledge about which there could be said to be a fact of the matter.

There are also *disciplinary* conventions giving *form* to how an academic community of practice goes about asking and answering questions about the past, also known as *second-order* knowledge. This includes the conceptual understanding related to the heuristics and methods used by historians such as ideas governing how historians go about their archival work cross-referencing sources in relation to a question asked, or the ideas they hold about the nature of causation (for example, that the most immediate cause need not be the most important cause, or that any cause is unlikely to operate in isolation from other causes), or ideas about the possible patterns of change (for example, that progress in some features of life may well entail regress in other features of life, or that continuity can require considerable levels of activity rather than the absence of activity). These are not 'facts' about particular people, places, events but rather, they are principles or patterns that could be said to 'carry forward' as generalities, applicable across different individual cases. *Second-order* knowledge is not the answers that historians produce, but the understandings that inform historians' ways of working, of organising or structuring ideas about the past. This *second-order* knowledge has been honed over years by communities of historians investigating the past. In contrast to *first-order* or *substantive* knowledge, *second-order* or *disciplinary* knowledge tends to be loosely associated with knowledge described as 'open'; it often accompanies discussion of the type of knowledge about which there could *not* be a fact of the matter.

The above paraphrasing from literature of knowledge-types raises more questions than it answers. Chapters 2 and 3 shows how what is being referred to with this distinction does not remain constant within the existing literature, rather, authors can slip between different characteristics interchangeably without explicit acknowledgement. Ideas involving the status of knowledge and appropriate pedagogies are often layered into the knowledge-types distinction. In the following discussion I have chosen the ideas of 'aboutness' and 'attribute' to help bring the existing theorisation and its limitations into view. Both characterisations are in play simultaneously but I will begin by discussing each in turn in order to tease out what meaning teachers might conjure when hearing the knowledge-types distinction.

**Different *aboutness*:**

In my experience, many student-teachers derive a strong sense of separation between knowledge-types as they become sensitive to the 'aboutness' aspect of the distinction. It is as

if student-teachers imagine history education authors to be saying, you cannot just learn what historians know about the past you also need to learn about how that knowledge was produced and the principles that underpin how it is organised. Chapman (2016:228-9) writes,

> For this tradition [education in *disciplinary* knowledge], learning history involves acquiring knowledge and understanding of the past – 'first order' or substantive knowledge of the past and of concepts essential to its comprehension and 'second-order' or structural knowledge and understanding of how history works as a form of knowing. The latter includes a grasp of the cognitive tools that are used to generate first-order knowledge (historical enquiry and historical evidence) and of the cognitive tools that are used to organize and structure first order knowledge and understanding in usable and intelligible ways (concepts such as change, cause, significance, and so on).

Thus, the impression of two types of knowledge (first and second order), each *about* quite different phenomena, can arise for some teachers from the history education literature. For many student-teachers, second-order knowledge, or conceptual 'tools' are put to work on and are used to create an object, first-order knowledge, that is understood as clearly separate from the tools themselves. Student-teachers derive a characterisation whereby knowledge of one sort is worked upon, and knowledge of another sort informs the work done.

The impression of two knowledge-types separated by 'aboutness' can be reinforced as teachers read descriptions of each knowledge-type. For example, Counsell (2017) while making the case for the value of teaching rich *substantive* (or first order) knowledge, comprising here of factual knowledge about specific people, places and periods in the past, refers to facts by saying they are,

> called up to furnish an argument….It (factual details that may be forgotten) has thus played a dual role. It made analysis possible at a particular moment, but it leaves a general sense of period, … an ability to avoid anachronisms in future and an adequate knowledge to make sense of later periods. (2017:83).


Perceiving *substantive* (first order) knowledge as a useful commodity, student-teachers can take the knowledge-types theorisation to mean that there are quite separate categories of knowledge, one must know about 'the past', the facts, *and* one must know about how

historians handle 'the past', how they make sense of it and see relationships between these facts they have generated about the past.

It is the strength of separation between knowledge-types that crystalises for many teachers. Indeed, Counsell's (2017b) chapter discussing historical knowledge is structured into two distinct sections describing the tradition of *each* knowledge type, a separation so distinct Counsell is able to talk about one knowledge type and then another. In response to the literature, student teachers can imagine that no more is meant by the knowledge-type distinction than that the types are different because they are *about* different phenomena.

It is easy to see how knowledge with 'body and form' can become little more than a slogan hiding a belief in two 'bodies' of knowledge - the need to teach a 'body' of knowledge *about* the past and a 'body' of knowledge *about* historians' handling of the past. A 'form' of knowledge becomes a 'body' of knowledge about a 'form' of knowledge. For some student teachers, it is simply the object of knowledge that differs in the distinction. More often, however, student teachers read the above extracts as also suggesting that the knowledge-types are distinguished because they also involve different types of cognitive activity and so the knowledge-types are also taken to differ in their nature or *attribute*. For most student teachers, the 'form' of knowledge (second-order or disciplinary knowledge) is not solidified into a 'body' of knowledge about 'form' but is understood as related to an intellectual activity.


**Different attributes**:

An *aboutness* distinction often accompanies an *attribute* implication in the literature. By *attribute*, I mean the way different *entity-like* or *act-like* qualities seem to be entailed in the two different knowledge-types. We can already sense an *attribute* ascription in the extracts above, but Lee and Ashby (2001:199) articulate the distinction starkly when they write,

> 'Substantive history is the content of history, what history is 'about'…procedural ideas about history…concepts like historical evidence, explanation, change are ideas that provide our understanding of history as a discipline or form of knowledge. They are not what history is 'about' but they shape the way we go about doing history.'

Thus, *disciplinary* (second-order) knowledge is not just *about* something different from *substantive* (first-order) knowledge, student teachers can understand extracts like this to imply that *first-order* or *substantive* knowledge is *entity-like* while *second-order* or *disciplinary* knowledge is *act-like,* related to 'doing' something.

This 'attribute' distinction seems to sit well with student-teachers who are familiar with common sense distinctions between 'know-that' and 'know-how' or what some might characterise as a distinction between 'propositional and procedural' knowledge. Thus, *second order* (disciplinary) knowledge is the knowledge we need if we want to *do* history, to participate in the historian's *process*. *Substantive* (first order) knowledge appears as both the knowledge worked *on*, and the outcome of the working; that is, the information historians must work with, and the knowledge produced as the conclusion of their working. Whilst *second-order* knowledge is the knowledge that informs the process of that work on substantive knowledge. A common assumption seems to be that what is entailed in knowing *first-order* knowledge such as facts differs in kind from what is entailed in knowing *second-order* knowledge, that is, the knowledge needed to establish facts or knowledge of how facts can be thought to relate to each other in the service of answering historical questions. The factual knowledge, or information about the people, places and periods in the past, which is to be manipulated or transformed by pupils into new claims of relationship between facts, entails a distinction between the knowledge that informs or is involved in the cognitive process of *relating* phenomena (*act-like*), literally connecting one fact to another in some claim of relationship, and the knowledge that is subjected to, or that undergoes, that cognitive processing (*entity-like*), or that is worked on or produced as a result of the operation of such processes. Knowledge is divided between one knowledge-type whose nature involves certain *attributes* and another knowledge-type which in some sense does not involve those *attributes*, hence the distinction.[11]

### *Second-order* or *disciplinary* knowledge appears *entity* and *act-like*:

Yet a potential ambiguity exacerbates student teacher confusion. The literature is not always consistent in how it talks about *second-order* knowledge. That is, the *entity-like* and *act-like*

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[11] See Appendix 2 for a discussion of how the 'knowledge-skills' distinction relates to the discussion of 'attributes'.

knowledge *attribute* does not cut cleanly in such a way that each knowledge-type is always assigned its own distinguishing *attribute*. While *substantive* knowledge or *first-order* knowledge is always referred to as an *entity-like* knowing and never *act-like* in the literature, *disciplinary* knowledge or *second-order* knowledge can sometimes seem *entity-like* (a 'body' of knowledge about the 'form' of knowledge) and at other times *act-like* in the literature.

The *entity-like* attribute of *second-order* knowledge is worth noting. The 'form' of historical knowledge can be expressed in rule-like assertions, every bit as reified as 'factual' knowledge about the particulars of the past. For example, experts conform to certain agreed conventions that bind members of the academic community according to the established, if evolving, best way to think about asking and answering historical questions. While the historian is free to argue that this or that cause was more important in bringing about an event, subject to the appraisal of her peers, she is not free to treat causes in history as if they are things rather than claims of causal relationship between things. Again, the historian is free, within logical and evidential limits, to interpret source material in relation to a question, but he is not free to discard sources because they do not further his argument. As Shemilt (2010) explains, *second-order* concepts are the 'rules' used to determine 'what we are and are not entitled to say about the past'; to adjudicate 'what counts as legitimate use of this knowledge' (2010:9); and these are 'the tools used to produce statements of fact, construct narrative and generate explanations about the past' (2010:1). Shemilt (2010:1) captures the nature of disciplinary historical knowledge which is influencing theorisation of knowledge in secondary school history thus,

> …there is an ontological gap between the realities historians describe and those upon which we base our descriptions. Sources of evidence have a reality that is directly experienced, experienced in common with other people and repeatedly so. Yet history is not about the sources on which it is based; it is about a past beyond experience and, for the most part, beyond memory. This ontological gap leads to epistemological complexities alien to commonsense reasoning grounded in direct and/or shared experience. Of course, we also use sources of evidence to make statements about the lived present – for example about connections between lifestyle choices and medical conditions, socio-economic status and educational performance – but, as a rule, relationships between sources and the realities described are open to inspection…

> In sum, historians are in the paradoxical position of describing a recognisable and commonsensical past using methods that take commonsense for a very long walk, of writing about the life experiences of others on the basis of their own experience of texts, sites and artefacts. For this activity to be other than nonsense, and for its products to be more than fiction, the rules by which it is governed must be philosophically sound.

Reading Shemilt's characterisation of history's knowledge-types one can again see the way the reader can gain an impression of a *strong separation* between the two distinct orders or classifications of knowledge. The reader can conclude that the *second-order* dimension is being characterised as a set of 'tools' and 'rules' which creates an *entity-like* rather than *act-like* impression of *second-order* knowledge despite these tools and rules referring specifically to the knowledge needed in the activity of doing history in contrast to what we know about the people, places, periods in the past.

Similarly, Lee (2004:10) also describes *second-order* concepts in this *entity-like* way, a kind of 'apparatus',

> 'Progress and enlightenment', the 'road to freedom' or the 'triumph of the workers' may provide story lines for coherent narratives, but only at the expense of holding students in tutelage to readymade versions of the past.'
> (Lee goes on, if pupils are to understand history,) …we have to give students not a preformed grand narrative, but an apparatus for making sense of what narratives are and do in history.

Thus, *second-order* knowledge takes on an *entity-like* characterisation (a 'rule' or 'tool' or 'apparatus') which student-teachers now must reconcile with its *act-like* description (something you use, do to or with your *first-order* knowledge).

There is ambiguity as to what exactly is meant by the knowledge-types distinction, an ambiguity that any one tidy quotation or definition leaves untouched; an ambiguity that does not reveal itself as much in the definition or text as in teachers' classroom attempts to apply and exemplify the distinction. As explored in the next chapter, theorisation which quickly breaks in contact with practicalities is more than just of little use, it is an alarm bell that we are missing something. It is the strength of the impression of separation and the resulting challenge of integration that I want to attend to next. It is how the history education

community is conceiving of the relationship between the knowledge-types that is noteworthy in the following discussion.

**A strong separation in the knowledge-type distinction:**

Perhaps ironically, a strong sense of separation emerges from explanations of why we ought to value both substantive (first order) *and* disciplinary (second order) knowledge. For example, answering those who would ask why we cannot just teach pupils the facts (first order) and leave the disciplinary (second order) knowledge to later, Counsell (2017b:74) explains,

> …that would be both impossible and dangerous. While many facts are known incontrovertibly (we really do know that the Battle of Hastings occurred in 1066 and that the Muslims first ruling Cordoba were exiles from Syria), collections of facts come together in generalisations and stories. Thus, the interpretative process is brought to bear in the very generalisations we make, in the facts selected, rejected or ignored in each story.

For Counsell, in this rendering, disciplinary knowledge can seem to be found in the arrangement of facts. By this argument, the integration of knowledge-types in history teaching cannot be postponed because facts do not come discretely but connected, purposefully side-by-side. Thus, in student-teachers' understanding, there is knowledge of the facts, and then there is the knowledge that goes into the arrangement of these facts into accounts. Whilst the facts are as they are, we have a say in how we use them, how we arrange them, to the use we make of them. Disciplinary (second order) knowledge refers to the understanding that informs the work that we get the facts to do for us when investigating and answering 'open' questions about the past, it operates in our handling of those facts or pieces of information. Thus, in Counsell's (2018) text, *disciplinary* knowledge is to be found even in Year 7 history essays, located *between* the facts, in their composition and use. Counsell explains (2018),

> In those subjects where truth is sought through argumentation, pupils learn that even the selection and juxtaposition of just two facts in a narrative amount to an interpretation, and that interpretation can be conducted responsibly or irresponsibly, but never definitively.

Thus, History comes storified, that is, not as isolated facts but as facts strung together, and humans storify as they encounter history's stories. Counsell's argument here is that we cannot suspend our interpretive powers when handling facts and so we do not just list facts, we string facts together in interpretive acts of story-making. As with the previous authors, it is possible to understand the text to mean that there is knowledge which we think of as factual or substantive or first order, and that this knowledge is somehow distinct from the knowledge type that is used when weaving facts together in the service of bigger questions.

For Counsell (2017a, 2017b, 2018), we cannot teach one knowledge type and then another because they come bound together, the impression is one of a package deal, so to speak. For student teachers it is possible to imagine the two knowledge-types come as a pair, much as dance partners move together or like the way pollen and pollinators exist together, you do not get one without the other. The argument can be understood as positing that two types of knowledge always come intertwined, one accompanying the other. But, as interdependent as dance partners or flowers and bees are, they are nevertheless quite separate entities in the world. Thus, when we argue why we need both knowledge-types we can inadvertently risk strengthening the impression of separation for some readers. Subsequently, history teachers face the challenge of uniting what has been understood as divisible or as actually distinct.

**The problem of integration:**

The knowledge-types distinction raises the challenge of integration, that is, how to teach for both knowledge-types once they have been perceived as distinct.[12] The history education community has long advocated for the curriculum to include both historians' *product* and *practice* for our subject to include history's 'body and form' (Chapter 1). The case for how foolhardy it would be to prioritise one knowledge-type and not the other has been made repeatedly (Counsell 2000, 2011, 2017, 2018; Cain and Chapman 2016, Chapman 2016) but in making that case, the challenge is that the impression of knowledge-type separation may strengthen. For example, Counsell (2017b) argues,

> The challenge for history teachers is to ensure that both substantive and disciplinary knowledge work to serve one another. To focus on substantive

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[12] Chapter 2, section 3 'Enquiry as teaching device', explores a key pedagogical answer to the question of how to teach for both knowledge-types simultaneously.

knowledge alone is to deceive the pupil by suggesting that the knowledge of the past arrives in fixed stories, that it is never possible to reconfigure, rearrange of differently select, challenge or defend those stories. To focus on disciplinary knowledge alone, without careful attention to building up layers of substantive knowledge, excludes too many children from the very debates to which disciplinary knowledge ought to give them access. (2017b: 83-84).

Some student teachers can jump from this description to imagining it plausible to think that there is such a thing as 'substantive knowledge alone' or 'disciplinary knowledge alone' but that it is important that we teach both types of knowledge and not one or the other. The consequence of articulating the distinction between knowledge-types so *strongly*, that is, without readers having an adequate theorisation of its origins and meaning, is that student teachers can then imagine that each needs to be brought together, as if they are teaching one type or knowledge and then another.[13] For decades, educationalists (Counsell, 2011; Chapman, 2016) have been trying to develop classroom practice by understanding how 'dimensions' of historical knowledge can be nurtured in 'mutually enhancing ways' Chapman (2016:228-9). Chapman (2016:228-9) identifies the challenge thus,

> Much of the labour of history teachers, curriculum developers and history education researchers working within the 'form of knowledge' tradition over the last forty years has been devoted to trying to understand how to integrate first- and second-order dimensions of historical learning organically so that both develop together, in cumulative and mutually enhancing ways, and so as to enable historical knowing to be meaningfully realized in and through classroom practice (Lee 2014).

The literature promotes the idea of a valuable knowledge-types distinction, and the idea that both knowledge-types are intimately connected and worthwhile. While Chapman (2016) stresses the importance of *disciplinary* or *second-order* concepts and the inadequacy of thinking about historical knowledge as pertaining to facts alone, Counsell (2017b; 2018) is at pains to draw attention to the value of *substantive* knowledge, or facts, fearful that their role

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[13] There is good sense to sequencing learning in lesson planning, but I argue (Chapters 4 and 5) that this is a consideration that ought not to be read as a comment about the different natures of knowledge-types but can be premised on more appropriate considerations.

in historical understanding has been neglected. Both Chapman and Counsell argue that we need both knowledge-types in combination.

Taking up the more general knowledge-type distinction framed as knowledge versus skills, rather than knowledge framed as substantive (first order) versus disciplinary (second order), Counsell (2018) argues that appeals to the best of what is known (knowledge) *or* preparation for the future (skills) is not helpful as a response to the question of what to teach,

> Appeal to knowledge *and* skills is no corrective. These terms invoke such diverse meanings and assumptions that most discussions concerning their relative importance end up being at cross purposes.

Counsell (2018) goes on to write that the longstanding work of the subject communities can, 'get us well beyond the knowledge-skill divide by teaching pupils about the structure, status and origin of the knowledge taught.' Counsell (2018) explains that educators need,

> … something much more coherent concerning the character of knowledge that is taught — its structure, its origin, its status as a set of truth claims (such as their revisability or provisionality) and the relationship of both teachers and pupils to that knowledge. How, how far and when can teachers or pupils participate in challenging or reaching those truth claims? How far, in which subjects and under what circumstances must they just accept them (for now) as givens?

An interest in the 'structure, origin and status of a set of truth claims' may indeed alert us to the problematic characterisation of 'knowledge' and 'skills', but as Counsell herself would attest, a challenge within the history education community is that replacing one way of discerning knowledge-types (knowledge-skills) with another (*substantive* and *disciplinary* knowledge) risks postponing the inevitable subsequent difficulty that emerges whatever the distinction, as teachers grapple with the remaining ambiguity over the nature of the distinction and its implications for their teaching.

The ability to consider knowledge-types has advanced the teaching of history, however, student teachers with a *strong* sense of knowledge-type separation, without an equally robust understanding of the nature and basis of any such distinction, potentially exacerbates the challenge of acting upon the knowledge-types distinction. In the existing literature we have descriptions of each type of knowledge, and assertions that these knowledge-types are both

essential and integral to each other in understanding history, but we not yet have a sufficiently robust explanation of precisely how the knowledge-types are distinct yet related to each other and what this means for fine-grained teaching decisions.

There are three main points related to the idea of knowledge types discussed so far – *that* knowledge types are or can be thought of as somehow separate, *how* they are perceived to be separate, and the challenge of how to teach for the development of both knowledge-types when the value of each is accepted. When unpicking the nature of the distinction, I have explained how, beyond 'aboutness', or simply the idea that the knowledge-types do no more than classify knowledge about different kinds of things, many student teachers ascribe attributes to the knowledge types, seeing *first-order* knowledge as *entity-like* and *second-order* knowledge as *act-like* and *entity-like*. I have drawn this analysis from illustrative extracts from the existing literature. Now, if we consider the early theorisations of knowledge-types in history education, we can see how a sense of strong separateness and associations of 'aboutness' and 'attribution' could arise whilst the distinction nevertheless also entails a commitment to the interdependence of both knowledge-types and the futility of teaching one knowledge-type without the other.

## Early knowledge-types theorisation in history

Peter Lee and Ros Ashby researched pupils' historical thinking in the CHATA project in the 1970s and 80s and published their work theorising knowledge in history education. In an example typical of Lee and Ashby's (2001) empirical research, pupils were asked to discuss a problem. In this example, the problem is a discrepancy between two historians' accounts in which each historian gave a different date and event for the fall of The Roman Empire. The pupils were asked why the historians would give different dates. One pupil made sense of this discrepancy by thinking that one historian must be mistaken. Lee (2005) explains how this pupil seems to be approaching the discrepancy with a belief that history is the sort of endeavour in which there is a single correct date for events and a historian's role is to discover and report such dates faithfully. The researchers contrast this common response to another pupil who makes sense of the discrepancy in dates by thinking about the specific choices each

historian makes to arrive at their accounts. For Lee, it is clear from what this second pupil said that they see the possibility of varying accounts as the natural outcome of historians taking different markers for what constitutes an empire's collapse.

At first, these beliefs about the practice of history are not stated overtly by the two pupils but are inherent in their claims, part and parcel of what gives the information they are responding to the meaning it has for them. For the first pupil, there is a fixed answer to be found by the historian, an answer to be lied or mistaken about, while for the second pupil, there is an argument to be had over the concept or occurrence of an empire's fall, an argument that relies on establishing what could be counted as a marker for 'fall'. Both pupils might seem to know the same facts such as the growth of Christianity, Rome's political instability, pressures from external invasions and internal unrest, both are privy to the same stimulus material, but for the researchers, the difference between pupils' answers reveals how they differ significantly in their understanding of history's 'form' or *disciplinary* nature.

Lee and Ashby's work can be read to mean that when we encounter the world, in this case, questions about historians' accounts about the past, some ideas become available to us whilst we remain oblivious to others, partly as a function of what we already think. What we are able to think is shaped by what we have already thought and not just what happens to be there, external to us, for us to think about. A way of seeing, of imagining relations at work letting the world be as it is to us, is revealed in what we see, that is, in what we think or say. Just as the two pupils made quite different sense of the discrepancy between the two historians' accounts, so we do not all necessarily see similarly despite apparently looking upon the same information in part, because of the way the cumulation of our understandings to date, shape what we see. What interested the researchers was the sorts of understanding they could infer from learners' responses. The gap between pupils' understanding was not opening in pupils' factual knowledge or their ability to recall information or understand vocabulary. The researchers designed the research to hold these steady. The gap was opening in some other area of understanding. We say things that differ from what others say to be the case, despite apparently not looking at anything different, because we construe the way the world works differently, we imagine different relations to be in operation. The terms first or second order, or substantive and disciplinary, have been used to help us to talk about the different types of knowledge informing our sense-making. While an ill-defined word or factual

error appears obviously in pupils' answers, the type of knowledge that bears on pupils' interpretation of the world may need to be inferred from what they say. When discussing this second-order of knowledge with student teachers, I find it helpful to talk about an 'as if' aspect to pupil thinking (for example, in this case, it is 'as if' pupils imagine a mistaken historian rather than a legitimate area of dispute). As teachers, we learn to extrapolate an 'as if', a way of seeing revealed in what is seen, as we analyse pupil thinking.

By inferring a pupil's implicit understanding from a pupil's explicit claim, early theorisers such as Lee and Ashby were using a facet of human rationality that enabled them to artificially isolate understandings which they took to be implied *within* pupils' claims. They read between the lines of pupils' claims to make a retrospective characterisation of the sorts of understandings that must pertain for a pupil to make the claims they made. They then verbalised these historical understandings as separate principles or generalisations about the ways in which pupils see the world. The pupils' ways of seeing the world were now rendered distinct from the world they were seeing. Knowledge that researchers called *second-order* or *disciplinary,* was thus analytically *extracted* and represented in explicit utterances now isolated or removed from the particulars from which it emerged.

Every analogy has its limits, but the idea of a lens can help us think about how *second-order* or *disciplinary* knowledge can now appear in two senses in the literature theorising knowledge. *Second-order* knowledge can appear *extracted* from its occurrence in use (a claim about the difference in historians' accounts), and instead, be offered in statements now directly about it (the 'as if' extrapolation). Using the analogy of a lens to describe the extrapolation of second-order knowledge, we are now looking *at* the lens and talking *about* the lens rather than what is seen through the lens. This makes *second-order* knowledge appear 'rule and tool' or *entity-like* (the 'as if' extrapolation) but also *act-like* (appearing in the activity of looking or seeing, or sense-making). Thus, *second-order* knowledge can also appear as *embedded* in use, implicit in a claim we make about the world, in the case above, the world of divergent accounts of empires falling. Using the analogy of a lens, when our *second-order* knowledge is *embedded* in use, our claims are not directly 'about' our lens but are about what is seen through the lens, the lens however, is still integral to our seeing. When we appear to

be using our *second-order* knowledge rather than talking about it, our *second-order* knowledge appears as *act-like*.

The researchers' *extracted second-order* sentence differs from the pupils' original sentences in crucial ways. The pupils were *using* their implicit understanding of how the world works (in this case, how history works) to say something *about* a particular case, about a specific object under discussion. What Lee goes on to call *second-order* knowledge actually occurs *embedded* in the pupils' sentences. When the focus of attention becomes commentary on ways of seeing, we are no longer looking through the lens to the objects of our attention beyond the lens, rather the lens becomes the object looked upon. We are now attending to the lens rather than to the objects that were being seen through it.

It seems important for the sake of clarity for educationalists to be alert to when they are talking about or conveying *second-order* concepts in their *extracted* form as statements about something that originally exists *embedded* in what we say about the past. In other words, it is helpful to clarify when authors' description turns to looking at the lens (making what had been called *second-order* knowledge appear *entity-like*) and when they are looking through the lens (making *second-order* knowledge appear *act-like*). The literature currently does not explicitly examine or sufficiently acknowledge this shift in senses as it moves back and forth when describing *second-order* knowledge. One moment, *second-order* knowledge discussion focuses on how pupils are learning *about* the discipline of history (the rules and tools), the next moment, discussion is about pupils participating in asking and answering historical questions as historians would. The two different characterisations are valid, but the switch can be too fast for some student-teachers to see for themselves, either in their reading or in their teaching. What is apparent, however, is the intimate relationship between the knowledge-types, the resultant desire for teaching to encompass both knowledge-types (first and second-order, substantive and disciplinary), and the challenge of working out how to teach for both types.

I conclude discussion of the 'body and form' or knowledge-types characterisation of history education by considering a selection of extracts from the literature in light of the preceding discussion of knowledge-types distinguished using *aboutness* and *entity* and *act-like* *attributes*, and the *embedded* and *extracted* guises of second-order (disciplinary) knowledge.

The following extracts cast light on my student teachers' understandings but once again, I also to use my student teachers' understandings to cast light on how knowledge is theorised in the literature.

## Literature extracts read in light of the preceding discussion

The following is not a review of the literature; instead, I seek to use the work of three authors as illustrative examples of knowledge-types discussion in the literature.

First, Chapman addresses the nature of the relationship of first and second-order concepts, Chapman (2016: 228-9),

> The 'second-order' is not secondary – in the sense of being a mere supplement to 'primary' factual knowledge. It is better understood as *meta*historical knowledge and understanding – as knowledge and understanding *about* historical knowledge and understanding. Second-order knowledge and understanding is fundamental to the development of substantive knowledge in history above the level of isolated or aggregated 'facts': it helps both to *form* substantive knowledge (assisting in knowledge building) and gives substantive knowledge *form* (assisting in organizing and structuring substantive knowledge).

Chapman responds to the devaluation of one knowledge type by stressing the integral role and importance of second-order knowledge, but the sense of strong separation remains intact. For Chapman in this extract, we have knowledge about history, and we have knowledge about our knowledge of history, or *meta*-historical knowledge. The difficulty is that what it means for *second-order* knowledge to help *form* and give *form* to substantive knowledge can be read in different ways, including the requirement for the historical thinker to integrate separate knowledge types in their thinking. A sense of strong separation into two distinct knowledge-types, one needing to be added to the other, emerges from the phrase 'above the level of aggregated 'facts''. It is possible to imagine from this phrase that some knowledge about the past can exist operating 'below the level' at which this *meta*historical knowledge feature operates. For some student teachers Chapman appears to be suggesting that some

knowledge, of isolated facts for example, do not include the additional conceptual knowledge that is *second-order* or *disciplinary*.

Next, the following extract taken from the work of Kitson, Husbands and Steward (2011) illustrates the educative challenge of teaching the *practice* of history, including its heuristics and methods, however, it too shares the same susceptibility to being understood as requiring the combination of knowledge types in thinking. In a section entitled, 'What are history's key concepts and why do they matter?', Kitson et al. (2011:65) write,

> Academic and popular history deals mainly with the substance of the past – content, arranged according to the historian's perspectives and interpretation. Historians rarely write about the limitation of the evidence they use, nor do they frequently reflect in their prose on the nature of causation or change in abstract ways (Lee 2005). The history that they write, however, is underpinned by their understanding of these ideas – evidence and its relationship to accounts, causation and notions of underlying causes and triggers, and change over time with accompanying notions of continuity, regress, progress, fast change and slow change. These key concepts – also known as second order or procedural concepts – provide the foundation of history: the framework or structure around or through which history is constructed. Without these concepts, history lacks disciplinary rigour and becomes a story without shape, structure and the constraint of accepted procedures. By working within them, (most) historians sign up to an agreed way of working.

There is a sense of *second-order* conceptual understanding as implicit in the arranging of *first-order* or *substantive* knowledge about the past. The metaphors are open to interpretation. 'Underpinning', 'foundation', 'framework', 'structure' can be construed in different ways but seem quite *entity-like* and in keeping with the 'rules' and 'tools' description of *second-order* knowledge. The authors go on to provide a short extract from the work of historian Simon Schama and say (2011:66),

> At no point in the extract does Schama explicitly mention causation, change, the limitations of evidence nor his attempts to empathize because he has no need to: they are implicit throughout his account. In school, however, teachers need to make these things explicit in order for pupils to understand what history *is* and the ways in which they can try to *construct* it for themselves. It is also by making these things explicit that pupils are more likely to understand how to get better at history, for without them, getting better becomes a question

merely of knowing more 'facts' and that, while crucially important, is not enough by itself.

Here, Kitson et al. (2011) acknowledge the challenge entailed in teachers learning to make their *second-order* knowledge explicit for the purposes of teaching that which is often understood implicitly. The challenge is a matter of unearthing tacit knowledge that historians use when arranging what they know about the past, in order to share that tacit knowledge with pupils. Something of earlier theorisers' thinking around the implicit feature of one knowledge-type is raised but the idea of historical thinking as entailing the combining of separate knowledge-types remain. The distinctness of the knowledge-types is not under scrutiny in the extract. Rather, the authors point out the difference between historians' and teachers' practice, pointing to the teacher's need to treat one knowledge-type, *second-order* or *disciplinary* knowledge, explicitly. As with Chapman (2016), an implication that can be drawn by some student-teachers is that 'facts' or knowledge exist separately from, or devoid of, the occurrence of, or the teaching of, *second-order* knowledge. As with Chapman above, there is an impression that we can know facts about the past without the distinct knowledge involved in the arrangements of those facts. Referring to *second-order* concepts, Kitson et al. (2011) speak of something *more than* knowing facts,

> First, they introduce a level of engagement and challenge which goes beyond 'knowing facts', and provide opportunities for teachers to analyse and assess progression in more sophisticated ways. (2011:67)

There is a sense of a way of seeing revealed in what is seen but it seems to be taken to reveal the existence of different knowledge types, with knowledge of one type added to knowledge of another type.

Finally, writing at a time and in a context in which educationalists often report feeling that one or other knowledge-type is in danger of receiving less attention than it needs, Counsell (2017a, 2017b, 2018) is keen to raise the profile of each knowledge-type, stressing their interdependency. In the selection of extracts from Counsell discussed above, *substantive* knowledge is clearly thought indispensable, but it also appears *entity-like* and a useful commodity, as facts are needed to make sense of more facts that will be learned in the future

and to make reasoning acts possible as we reason with or upon the facts that we learn.[14] While Counsell is at pains to do justice to the role of substantive knowledge, in relation to the nature of the knowledge-types, the feel of Counsell's recent writing is very similar to the other examples above, where authors refer to *disciplinary* or *second-order* knowledge as going *beyond facts* (Counsell 2017a, 2017b, 2018).

In the following extract setting out her definition of *substantive* and *disciplinary* knowledge, Counsell addresses an audience beyond secondary history, but rehearses a line of argument made when speaking from within a history specialism. I have chosen this extract because it illustrates considerations raised above and common across the literature, including an implicit shift between the learner positioned as learning *about* certain things (historian's practice or 'truth quest') and learning to *participate in* the cognitive doing of certain things (questing for the truth oneself). As we shall see, for Counsell, pupils are knowing 'about' the practices by which history is made and remade. They are learning 'an account of' this process. As with previous authors, *second-order* or *disciplinary* knowledge is thus at times rendered *entity-like*. But at other points in Consell's text pupils are also engaging *in* this process when they too participate in argumentation, thus *second-order* or *disciplinary* knowledge also rendered *act-like* in the extract.


Another feature common in the literature and illustrated in the extract from Counsell (2018) below, is the way in which more than one marker of knowledge-type is layered together in discussions of the knowledge-type distinction. For example, it seems that knowledge related to the epistemic question of *how* we know *what* we know forms one knowledge-type, essential for, and complementary to, the concomitant knowledge-type of *what* we know. Thus, student teachers can read the distinction as resting in different 'aboutness' – the need to know about this matter (what happened in the past) and about that matter (how historians

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[14] For ease of reference, the previous extracts include: discussing the role of substantive knowledge Counsell explains how facts, are 'called up to furnish an argument….It (factual details that may be forgotten) has thus played a dual role. It made analysis possible at a particular moment, but it leaves a general sense of period, … an ability to avoid anachronisms in future and an adequate knowledge to make sense of later periods.' (2017b:83). Counsell (2017b) argues, 'The challenge for history teachers is to ensure that both substantive and disciplinary knowledge work to serve one another. To focus on substantive knowledge alone is to deceive the pupil… To focus on disciplinary knowledge alone, without careful attention to building up layers of substantive knowledge, excludes too many children from the very debates to which disciplinary knowledge ought to give them access. (2017b: 83-84).

know about the past, how they make claims about the past). But also, for Counsell, knowing 'the structure, nature and origin' of the discipline forms the basis upon which teachers decide when it is appropriate for pupils, as people who relate to the past, to adopt a relationship of acceptance or challenge towards the product of academics. Thus, pedagogic implications are drawn into the discussion and woven into a distinction between substantive and disciplinary knowledge.

Counsell (2018) writes,

> Substantive knowledge is the content that teachers teach as established fact – whether common convention, concept or warranted account of reality…. In calling this 'substantive', we are treating the material presented as givens. It needs to be understood and retained, often as part of a conceptual structure, both so that further, related material quickly makes sense and so that later synthesis, argument, composition, judgement or problem-solving are possible. Disciplinary knowledge, by contrast, is a curricular term for what pupils learn about how that knowledge was established, its degree of certainty (incontrovertible reality or provisional claim) and how it continues to be revised by scholars, artists or professional practice. It is that part of the subject where pupils understand each discipline as its own distinctive pursuit of truth. For each subject is just that: a product and an account of a truth quest…. It is a label for that part of the curriculum where pupils learn about the conditions under which valid claims can be made, and associated conventions such as what constitutes evidence for a claim and what passes for argument in that subject….The date of the Treaty of Waitangi is a given. Many events before and after the Treaty of Waitangi are givens. But the attribution of cause, consequence or significance to the Treaty of Waitangi or those surrounding events is *not* a given. The humblest of Year 7 history essays, even in the most traditional of schools, is elementary training in argumentation and produces legitimately different conclusions.[15]

I used the ideas of 'given' and 'arrived at' in McCrory (2015) to describe the possible attitude towards knowledge that teachers can adopt within their teaching as I wanted to turn attention to the *treatment* of knowledge in classrooms. I used 'given' and 'arrived at' to shift discussion away from simply thinking of the knowledge-type designation (*first-order* or *substantive* and *second-order* or *disciplinary*) as referring to *inherent* features of knowledge itself and towards

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[15] The online format of Counsell (2018) does not use page numbers.

teachers seeing the stances they adopt towards knowledge in the course of teaching towards some educative purpose. As a broad characterisation, I used 'given' and 'arrived at' to draw attention to teachers' intentions and methods, the way they intend some information to be accepted and comprehended while they want other claims to explicitly constructed, argued for and over. In the Counsell extract above, it seems that the two ways teachers intend learners to relate to knowledge is meant as a distinction inherent in the nature of what is being taught (that is, features of the knowledge itself) regardless of whoever knows it, rather than a distinction in our adopted stance towards it or how we intend pupils to relate to it for the purposes of some teaching point.

We can see that often the markers employed in the knowledge type distinction do not cut very cleanly or discussion shifts from one marker to another without explicit consideration of the shift.[16] Bringing each of these considerations to mind is helpful, and we are indebted to the authors of the literature discussed here, however, some student teachers can run diverse ideas together as bedfellows, or equivalents, or as unproblematically mapped onto each other. In reading the knowledge-type literature, different considerations such as the following list, may become knotted for student teachers, for example, a) a pedagogical approach (related to considerations such as whether the knowledge to be taught is something to be expressed or argued for on the one hand or something to be comprehended or applied on the other); b) an ontological characterisation of knowledge (things about which there could or could not be a fact of the matter), and c) a description of knowledge which contrasts *what* is claimed from the epistemic questions about *how* we know.

The authors discussed in this section have supported teachers enormously in grappling with what it means to help pupils to reason historically, but, there is little to hold student-teachers back from imagining that there are parts of the curriculum (or lesson) involving one type of knowledge and not the other, and that these different knowledge-types may well entail

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[16] By way of illustration common across all the authors, Counsell's extract above begins by including 'warranted account' in the marker of substantive knowledge but moving into finer detail, ends with a distinction between claims within historians' accounts about which there is a fact of the matter and claims within those same accounts about which there is no fact of the matter. It is also difficult to apply the markers cleanly when knowledge about which there is a fact of the matter may not distinguish substantive from disciplinary knowledge if student teachers view disciplinary or second-order rules and tools of history as having the status of established fact rather than knowledge that is open to valid dispute (for example, not cherry-picking evidence to suit one's foregone conclusion or the need to consider cause as a claim of causal relationship).

different kinds of knowing and furthermore, that teachers need to somehow bring together or combine these different knowledge-types which are somehow separate if nevertheless complementary entities. Indeed, it is possible that this is how the current distinction is commonly understood. The power of the current theorisation to inform teaching decisions begins to dissolve once you move to the particulars of what such characterisations might mean in specific examples of practice, revealing a need to further develop our theoretical footing.

## 2.3 Learning as conceptual change

Confrey (1990) traces a long tradition of exploring learners' ideas about the world beginning with Piaget in the 1920s, and there is a large body of literature exploring the theory of learning as conceptual change (di Sessa, 2014).[17] According to conceptual change theory, some conceptions may seem to serve pupils well in their day-to-day life but can let them down if applied to questions of a different scale or questions requiring more robust standards of reasoning and communication (Vygotsky, 1998; diSessa, 2014). Learning construed as conceptual change entails the learner building upon or overcoming their existing conceptualisations. For example, Lee (2005) describes the range of pupil ideas about the historical evidence and the complexities of constructing accounts about the past,

> Working from less to more powerful ideas, we find a given past with no questions arising about how we can know; a notion of testimony, with questions about how truthful a report may be; and a concept of evidence, whereby questions can be asked that no one was intending to answer….Once we are able to think in terms of a progression of ideas in history, we can see how students' understandings can gradually be extended. In some cases we can accomplish this by enabling students to discover how prior conceptions break down in the face of historical problems. (Lee 2005:24)

Working within history education, Lee (2005) recognised conceptual change research more broadly, and the work in science in particular,

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[17] For a classroom example of what is meant by conceptual change, drawn from my own teaching, see Appendix 4.

Four decades of research has shown that, although students bring rich resources to learning science, their initial ideas about the world are strongly at odds with those of scientists (National Research Council [NRC], 2007). Indeed, their ideas are so different that they prevent many students from making sense of instruction, which does not take this incommensurability into account. (Lee 2005:25).[18]

Despite a wealth of literature beyond history education, there have only been a handful of funded studies in the UK exploring differences in learners *disciplinary* or *second-order* conceptual understanding in history. These explore the concepts that seem to be in play as pupils think historically in response to a question explicitly demanding historical reasoning, and some studies include an interest in what might be affecting conceptual change. These empirical studies have tended to have significant mainstream influence in both the UK history classroom and internationally, in particular, the Schools Council History Project Evaluation Study (Shemilt, 1980), conducted in Leeds, discussed in Chapter 3, and Project CHATA (Concepts of History and Teaching Approaches), conducted in London (Lee and Ashby, 2001; Lee 2005, 2014).[19] Project CHATA investigated pupils' second-order disciplinary knowledge and postulated progression models in 7-14-year olds' understanding of second-order concepts (Appendix 3). It is these studies that did so much to give rise to the knowledge-type distinctions described in the previous section. Chapman (2015) later extended the Project CHATA work to explore students' understanding of the second order concept of historical Interpretations.[20]

This body of research suggests that the qualities of what many learners can do with their factual or *first-order* knowledge does not develop simply through learning about what historians know about the past. One way to express this point is to say that while knowing lots of historical facts is essential to being better able to use one's historical knowledge to answer historical questions about why events occurred or what change occurred and so on, the quality of the use is not exhausted by the number of facts that students can recall. Shemilt (1980) showed that while some learners are indeed able to develop richer ways of asking and

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[18] See Appendix 5 for brief context on the of the science conceptual change literature.
[19] See Appendix 6 for an example of conceptual change research in history education carried out in the US, inspired by this work in England.
[20] Unpublished doctoral thesis. Chapman (2015) has also produced a Thinking Historically Progression Map.

answering historical questions through exposure to historians' ideas and practices, many are not (Chapter 3).

For almost half a century, history educators both in the classroom and working in history education in academia, defined the curriculum in terms of knowledge-types with *disciplinary* knowledge believed to be of special importance (Chapter 1). This work has contributed much to our understanding of the sorts of content and lesson activities that might facilitate students' learning (Counsell, 2011; Counsell, Burn, & Chapman, 2016). There is, however, recognition of the challenges faced in bringing about conceptual change. Hall and Counsell (2013:26) referenced a range of debilitating issues in the practitioner journal *Teaching History*,

> Very serious problems in history education practice continue, partly because of the severe constraints of time and partly because too few history teachers have access to high-quality, subject-specific, scholarly training. But alongside these acute problems are large numbers of teachers trying to tackle those problems against nearly impossible odds.  For what needs to be remembered is that those teachers who have striven to bring difficult and demanding, exciting and stimulating history to all pupils are pioneers. They are doing something new.  As Cannadine has shown, there was no golden age when all pupils learned these things.  Universal achievement of rigorous historical knowledge is a recent project. It is in its infancy.

The history education community recognises the challenge of teaching for the understandings discussed here. 'Infancy' refers here to a project that, depending on your measure, is nearing its first half century. For example, in 2000 Counsell writes, 'developing pupils' understanding of the distinctive properties of disciplinary knowledge and its difference from the 'everyday' is what history teachers have been attempting to do for about 25 years' (Counsell 2000:203). My argument in the following chapters is that we stand to further our efforts to bring 'difficult and demanding, exciting and stimulating history to all pupils' with a more nuanced understanding of the nature of conceptual knowledge.

## 2.4 Enquiry as teaching device

The third feature helpful in characterising knowledge theorisation in history education is the community's advocacy of enquiry-based lesson sequences (Riley, 2000). Enquiry has a very specific meaning when used in the history education community and is intended to serve as a pedagogical device to teach history as both body of knowledge and form of knowledge.[21] Hall and Counsell (2013) set out what enquiry is not. In the sense used by the history education community, enquiry is not 'discovery learning' (Kirschner et al., 2006),

> 'by 'enquiry' we do not mean independent enquiry. We use the term 'enquiry question' in the technical sense that it has gained in history teacher parlance, namely a driving question that knits together a sequence of lessons, a question that pupils are equipped to answer at the end of the sequence. Such teaching can certainly prepare pupils for more independent enquiry … but the term itself does not imply this. Most of our enquiries would be teacher-led, albeit with engaging activities built in.' (2013:26)

The notion of enquiry runs deep in history. Riley (2000) and Counsell (1998) provided a popular working-definition when they promoted the idea of teaching history through a rigorous and intriguing historical question that captures pupils' interests, places an aspect of historical thinking, concept or process at the forefront of pupils' minds and results in a lively activity through which pupils *genuinely answered* the enquiry question.[22]

The idea gained traction (Husbands et al., 2003). Surveying accomplishments within a small, tightly knit community of history teachers in England, Counsell (2011) advocated enquiry both as a means to re-contextualise an academic discipline as a school subject *and* as the medium through which teachers could develop expertise. Despite some orthodoxy amongst those most vocal in the history teaching community within England, the extent or impact of enquiry's use is difficult to know. It is reasonable to suggest that Barton and Levstik (2004:185) capture more than just the American context when they comment, 'The use of inquiry as a tool for learning history…. has a long tradition – or more accurately, recommendations for using inquiry have a long tradition.' Even if teachers believed they understood or adhered to enquiry, it is difficult to ascertain just what enquiry might mean to different history teachers and pupils. It is also important to acknowledge the challenge of enquiry-based teaching. In a

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[21] For a brief description of the meaning and use of enquiry in history education in the UK, see Appendix 7
[22] See Barton and Levstik (2004); Harris, Burn and Woolley (2014), and Cain and Chapman (2014) for discussion of enquiry's heritage.

feature of the practitioner journal entitled, 'New, Novice or Nervous?' (2013: 45) the editors of Teaching History recognised that enquiries can 'fall flat' in the classroom,

> Sometimes your enquiries seem less like an open-ended journey of exploration and more like an intellectual cul-de-sac. Pupils, far from being curious and intrepid explorers of the past, are behaving more like reluctant conscripts. The enquiry question, rather than capturing and sustaining their imaginations, seems to bore them. When you introduce the final outcome activity you find yourself looking out at a sea of blank faces, some uninterested, others clueless.

There is, therefore, some acknowledgement of how knowledge development through enquiry can be challenging, however the ambition draws much from the knowledge-types distinction. The enquiry approach relates closely to the curricular goal of teaching to enhance pupils' understanding of history as *product* and *practice*. It relies on more open questions thought capable of revealing precise elements of pupils' historical thinking which in turn creates opportunities to enrich their understanding.[23]

To illustrate, a question on 'the scramble for Africa' such as, 'How different were the motivations of participants at the Berlin Conference in 1884-5?' nominally demands *decision-making* from pupils which, as mentioned above, puts their historical knowledge into action. I say nominally because the phrasing of a question may encourage pupils to generate their own claims, but a question formulation alone need not guarantee or compel such thinking. What I mean by demanding decision-making is that no one else can speak for me when I am asked how different I think the motives of the participants of the Berlin Conference were. Offering someone else's rendering of the answer, no matter how eloquent, is not a substitute for answering with one's own voice, no matter how faltering; for while understanding others' wisdom and speaking wisely for oneself appear intimately related, they cannot be reduced to the same thing. That said, to generate the entirety of one's answer completely from scratch would be impossible, unnecessary, wasteful and against the enquiry's aims which include comprehending what is already known of the people, events, and states of affairs at the time (historians' product) *and* developing knowledge as a historical thinker (historians' practice),

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[23] The use of the term 'open' versus 'closed' is explained in the introduction to this chapter – briefly, it refers to matters about which there is no fact about the matter, and it offers the pedagogical advantage of potentially helping teachers to access pupils' historical thinking, that is, ways of taking the world to be as revealed in what they think.

that is, as someone who can, with some measure of independence and in increasingly disciplinary ways, helpfully bring their historical knowledge, in all its facets, to bear on the questions they face.

The enquiry question as used in history education pivots on a tension, a puzzle to be understood or resolved. The tension is often between different ways of thinking about the issue, for example, using different considerations or perspectives. Or the tension can rest in the shift from old to new self, that is, moving from what is currently unknown or once thought to what becomes known or is now thought after investigation. In some instances, the knowledge referred to here may be truly original, breaking new ground, more often, it is original to the learner rather than to the field of study. As I argued elsewhere (McCrory 2015), the expertise of the teacher is found in the placement of the tension, which includes decisions about what to 'give' the pupils, as information which we can take as established or settled, and what information to withhold such that pupils have adequate opportunity to 'arrive at' ideas in response to the tension in the question. As explored in later chapters, multiple considerations contribute to a teacher's decision about what to 'give' and what to have pupils 'arrive at' and exploring these considerations is fundamental to the later part of this thesis.

In this example question, 'How different were the motivations of participants at the Berlin Conference in 1884-5?', the teacher can, for example, 'give' certain information to the pupils for comprehension through direct instruction or explicit exposition, information *about* the participants' motives for example. This information can be 'given' without risk of obscuring the 'arrived at' thinking of pupils adjudicating difference. That is, giving pupils information about what the participants claimed to have thought or what they appear to have done, does not scupper, but rather facilitates, pupils' ability to 'arrive at' their determinations about how similar participants' motives were. What cannot be conveyed directly, that is, 'given' by the teacher to the pupils, is the judgment of the extent of difference, for this is the very thing to be worked out (or 'arrived at'). The puzzle placement here, that is, what the teacher wants to see, is how the pupil goes about discerning the extent of difference because the teacher wants the pupil to know more about the people, events and states of affairs. To 'give' this information would be to deny pupil and teacher the chance to see what needs to be seen for the purposes of teaching – what pupils think and what their claims reveal about how they take the world to be. The teacher wants to improve *how* the pupil thinks about, that is, works

through or approaches, this question of extent of similarity *'as'* a historical thinker. The teacher cannot claim to have seen and responded helpfully to pupils' historical decision-making if the teacher allows the pertinent decisions to be made vicariously, say through exposition of another person's claims, rather than ensuring that relevant claims are 'arrived at' by the pupil, that is, that the claims about the extent of similarity in the political leaders' motives, are the pupils' claims rather than someone else's claims. But neither can the pupil arrive at such claims about the extent of similarity of participants' motives without being 'given' what the teacher considers to be the information necessary for any such determination. It is in this sense that the literature discussed in the first section exploring history as 'body and form' of knowledge refers to *going beyond the facts*.

Pupils ought to know a great deal more about the conference-participants' motives by the end of the enquiry. This knowledge, however, would not constitute knowing *for oneself* how to better adjudicate the extent of commonality in participants' motivations. Ideally, pupils ought to have learned something they did not know previously about what counts when they determine the extent of similarity and difference in such a case. For example, as a result of this enquiry, pupils might appreciate the importance of problematising terminology like 'motivation' when determining the extent of similarity between leaders' motivations. For example, what a political leader might be inclined to do if they were free to enact their own wishes can differ considerably from what they seek to achieve on behalf of their nation. Two historians may find themselves at odds in their judgment of similarity if one defines 'motivation' as what a leader wanted personally while the other examined leaders' motivations defined as national interests. Historians may disagree if they compare leaders' actions rather than their rhetoric, and so on. To instruct pupils in these ideas up front, is to squander the potential learning in the lessons. The teacher who understands the futility of asking pupils what they think after telling them what to think, appreciates the value of pupils coming to see through their own cognitive effort how motivation defined differently changes conclusions about how much commonality there was between leaders' motivations.

A teacher could decide to begin the lesson by simply telling pupils to look out for the nature of such historical disagreement in the history they are about to encounter. Alternatively, the teacher might ensure that the opportunity for pupils to reach different conclusions arises organically and leads to the chance to contest the grounds upon which peer decisions about

the extent of similarity are based, resulting in the realisation that definitions or parameters of description matter and strengthening the disposition to seek out such clarity in future. It is my contention that the quality of pupil knowledge for at least some pupils, having arisen from pupil thinking (although engineered by the teacher), is likely to differ from the quality of knowledge that may arise from the teacher explicitly pointing out the role of key conceptualisations, such as the different ways of thinking about 'motivation', before any conceptual wrangling can begin in earnest. If pupils come to discover how they and their peers legitimately agree and disagree about the extent of similarity in leaders' motives depending on whether each pupil considered leaders' personal motivations on the one hand or leaders' espoused motivations as the representative of domestic will on the other hand, without having this potential source of pupil disagreement pointed out to them first, then pupils could 'arrive at' the insight of how important it is to clarify terms in answering such an enquiry question.[24] Thus, an underpinning (*second-order*) insight- the role of historians' concept definition - is being clothed in the enquiry sequence. The parameters of, or definition of, the term 'leader's motivations' is one instance of the more general principle that a teacher would want pupils to grasp hold of - that ambiguity and divergence of argument arise when terms are defined diversely. Differences in pupil judgement can arise from differences in conceptual definitions. Such *second-order* or *disciplinary* knowledge carries forward across multiple cases of time and place. For the teacher to attempt to 'give' this information about the role of diverse definitions, rather than have pupils 'arrive at' it, changes the qualities of the learning and so, theoretically at least, is likely to alter the qualities of the resultant pupil knowledge.

The teacher is planning for what they want pupils to be able to do, how they want pupils to be able to use their experience of their own disagreement with their peers over the extent of similarity, in order to discover the root of their disagreement. In turn, the hope is that pupils learn to judge similarity with careful attention to definitions and a growing appreciation of the difference between external and internal worlds (leaders' personal motivations and their motivations as political representative of national or imperial interests). Thus, enquiry in the history education community, can be construed as a teaching device, a way of fostering

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[24] An important idea discussed later in this thesis is the teacher's pedagogical choice to provide the conditions under which pupils arrive at essential insights. Furthermore, a fuller theorisation of this labour-intensive approach, on the basis of the nature of knowledge and not just on the basis of the nature of learning, could be very useful indeed.

novice knowledge formation, as much as a core historical practice engaged in by historians seeking to advance the frontiers of what is known.

## 2.5 Conclusion

This chapter sets out how the knowledge-types (*first* and *second-order* or *substantive* and *disciplinary* knowledge) are commonly characterised within the literature and how the theorisation of historical knowledge into different types is a nuanced distinction unlikely to be understood uniformly by educationalists.

The history education community could also benefit from more research into how we can understand the precise nature of the distinction and relationship between conceptual knowledge that is said to be *first-* and *second-order*. There are a range of different possible readings of the nature of *first* and *second-order* concepts and it would be helpful to have more explicit exploration of the possible teaching and learning implications of these different understandings.

There is good reason to think that the distinction is getting at something which is important in knowledge theorisation. Proposing *that* there are different knowledge-types offers one account of how pupils often seem to be able to comprehend the facts given but not to be able to use the facts taught to mount an effective argument or line of thinking. Furthermore, the knowledge-types seem different. *First-order* knowledge, let us say for the sake of argument defined as factual knowledge, once established in the canon, as it were, has a stability, even a materiality about it. We treat it, and speak of it, as if it were somehow there, for reference, for all to see if they look it up in the canon, so to speak. When was the Battle of Hastings? 1066. Who won? William of Normandy. *Second-order* knowledge, however, is more difficult to give a simple definition for, even just for the sake of argument. Take an example of knowledge that would commonly be characterised as *second-order* or *disciplinary*, such as appreciating the role of source provenance in influencing the claims historians can make. This can be considered established within the community of practice of academic historians, but while it may be pointed out explicitly, we treat and speak of it as if it entails more than can be contained in a reference that we can look up when memory fails us. Whatever the definition,

*second-order* knowledge is often said to arise from and live in attempts to say something more than an isolated factual statement about the past. Why is it important to consider the provenance of a source? Is a historical cause an event or is it a claim of relationship between two things? The answers to these questions do not seem to be the sorts of understandings that one recalls or forgets. They do not seem to be the sorts of understandings that one looks up in a reference book, despite their status as true beliefs. Once known it seems they stay known because they are a way of taking the world to be.

That said, the expression of second-order knowledge as 'rules/tools' of history, divorced from their occurrence embedded in use, *does* have the same feeling of solidity as the *entity-like* feel of facts about the past. Yet, their catechistic portrayal is of unclear value because they also have the feel of disposition or practice. The *extracted* 'rules/tools' formulation of *second-order* knowledge does not quite seem to capture its *act-like* nature in use. To take a more everyday example, there is some sense to thinking that knowing the definition of kindness is not knowing kindness yet understanding the definition does not break entirely free from the act. Wherein lies the relationship and the difference?

It can feel to teachers as though this different type of knowledge and knowing, this *second-order* or *disciplinary* knowledge can require a different type of teaching and learning as enshrined in history educators' approach to enquiry. We might imagine that without a pedagogy suitable to teaching for better participation in such disciplinary activity, we leave its development to chance. While pupils' understanding of facts about the past does not seem to require pupils continually working out these facts for themselves, pupils' understanding of principles, heuristics, conventions or dispositions that are entailed in generating and structuring knowledge of the past do seem to benefit from being established through pupils arriving at insights through their own reasoning. Unlike facts that can be read or heard and seem to be taken in, it seems, on the face of it, as though we need to be inducted into the use of *second-order* 'rules' and 'tools'.

Knowledge-types is one characterisation of this tacit sense of difference between facts and historical reasoning. It speaks to what seems to be a difference in the feel of the knowledge and how it is learned.  I wish to further discussion of the knowledge-type distinction, not abandon it. The distinction has a place, yet it also raises challenges. It is my experience as a

history teacher educator that distinctions of knowledge type are not understood as clearly as we might like and are open to interpretations that may be unhelpful in the classroom.

# Chapter 3. Is there evidence to suggest current knowledge theorisation would benefit from further theorisation?

In my experience as a teacher educator, student teachers can be uncertain about how *second-order* knowledge is distinct from and yet related to *first-order* knowledge and how this should influence teaching. In this chapter, I discuss classroom challenges which may relate to knowledge theorisation, before turning in Chapters 4 and 5 to how Inferentialism can enhance this analysis. This chapter, like Chapter 2, is not a literature review. There is a small body of literature, influential in history education in England, which seeks to explicitly theorise knowledge in history education. In Chapter 2, I presented how my student teachers seem to think about the knowledge-types as they try to understand this literature. I now explore knowledge theorisation manifesting in student teachers' classroom practice and learning outcomes. First, I consider a selection of work within the small body of quasi-experimental research which uses the knowledge-type distinction when reporting on pupils' learning outcomes. Second, I use my experience of student-teacher instructional design to discuss how existing theorisation may fall silent on important aspects of knowledge theorisation needed in classroom practice. Before beginning, I explain my choice of information and approach.

The three examples of quasi-experimental research selected below are helpful as they span time and are selected from the most influential bodies of work. Widely regarded as an important piece of research in England, Shemilt's research is arguably the most influential study of learning resulting from disciplinary teaching. Reisman, working out of a leading institution working on this type of study offers another highly respected body of work. Finally, I draw on a paper by leading scholars in Amsterdam, where the largest number of research papers of this type are written. This research reports finding pupils' historical reasoning only slightly enhanced (if at all) despite teaching designed to develop pupils' substantive and disciplinary knowledge. It is interesting that a similar limitation shows up in these three prime examples of quasi-experimental research chosen from the handful of studies of this type that exist.

There are a number of reasons why I have chosen to draw on this information rather than practitioner-based publications which often report more positively on pupil knowledge development. My selection is not intended as a disservice to a body of practitioner literature

that reports more positively on the development of pupils' historical reasoning, for example, Chapman & Goldsmith (2015). I have chosen not to draw on practitioner literature because, while practitioner research tends to claim more success in enhancing pupils' historical reasoning than the quasi-experimental research, it is the *limitations* reported in the quasi-experimental research that I want to explore in this instance. Furthermore, limitations in pupil outcomes exist. There is consensus that knowledge gains tend to be partial, and this stands across the different types of literature, including practitioner research, therefore I am not choosing to explore one body of research that is somehow at odds with another. Finally, I discuss the quasi-experimental research because it reports the partial gains in terms of nuanced knowledge-types that I wish to discuss.

I have used my experience of student-teachers' instructional design as the second source of information to explore the possible limits of knowledge theorisation in history education. This is because the literature, including both quasi-experimental and practitioner research, does not tend to analyse learning outcomes in terms of the precise nature of the *content-activity-purpose* segments in lessons.[25] It is often difficult to tell what can be inferred from the literature about finer-grained yet crucial aspects of teaching and pupil learning. For example, it is important to be cautious when considering the extent to which pupils' ability to repeat a phrase or claim made by someone else, such as something pupils have heard through the course of the lessons, is a good measure of the extent to which they have actually committed themselves to the reasoning informing that claim or the extent to which they have enhanced their ability to generate their own claims.

1. How do quasi-experimental research studies suggest possible limitations in existing theorisation?

There have been a small number of studies seeking to evaluate learner knowledge development in light of disciplinary-based teaching. They have used a research approach labelled quasi-experimental because their format is similar to a traditional scientific

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[25] I introduced the terms *content-activity-purpose* in Chapter 1. The *content* (the image of Charles I's execution), the *activity* (picking out image details), the possible foci from which the teacher could select their *purpose* (affective stimulus to generate curiosity; close reading or making historical inferences from the source; access to substantive details such as the public spectacle of execution).

experiment (Cohen et al., 2011). These studies span considerable time and distance, such as Shemilt's (1980) History 13-16 Evaluation Study; Stoel, Van Drie and Van Boxtel's (2015) research into causal historical reasoning; and Reisman's (2012:86) 'document-based history curriculum intervention'. All report similar partial gains in pupils' historical thinking resulting from the 'treatment' conditions under investigation. Research exploring conceptual change in history shows that even when the curriculum espoused by teachers is clearly focused on the development of disciplinary knowledge, the practices that those teachers adopt in seeking to enact it may fall short of what is needed.

In the first two studies pupils improved in their knowledge *about* historical reasoning but overall did not actually improve in their own historical reasoning. Based in England, Shemilt's (1980) History 13-16 Evaluation Study assessed the early impact of Schools Council History Project's (later Schools History Project, SHP) revolutionary approach to history education by contrasting SHP-pupils' historical understanding, through written tests and interviews, to that of 'control' pupils not following the new disciplinary approach. Shemilt's (1980) concluded that SCHP-pupils' understanding of the methods, logic and perspectives of History were significantly enhanced, however,

> Adolescents gained considerable insight into what the historian means by such ideas as 'causation', 'development' and 'change'; but they could not, as a result of History 13-16, produce more coherent prose; their enthusiasm for the subject was occasionally, but not invariably, improved; and their capacity to grasp and analyse the subtleties and complexities of actual historical issues was only marginally increased. All children…can radically improve their understanding of such concepts as causation and continuity in history; but only a minority…seem able to construe these concepts in historically and philosophically acceptable ways. (Shemilt 1980:10-11).

Students improved in their knowledge *about* historical reasoning but not actually in their own historical reasoning. Over thirty years later and based in the Netherlands, Stoel, Van Drie and Van Boxtel (2015:1) report similar findings in their quasi-experimental pre-test-post-test study which sought to align domain-specific content with pedagogical principles. Seeking to develop causal historical reasoning concerning the outbreak of the First World War conducted in two conditions, an implicit and explicit condition, they reported,

> …first-order knowledge increased in both conditions, but students in the explicit condition acquired significantly more knowledge of second-order concepts and causal strategies. However, no differences were found in students' written explanations.

In the third experiment based in the USA, Reisman's (2012:86) measured the effects of a 6-month intervention on four dimensions: a) students' historical thinking; b) their ability to transfer historical thinking strategies to contemporary issues; c) their mastery of factual knowledge; and d) their growth in general reading comprehension. The study reported, 'significant main effects for the treatment condition on all four outcome measures.' However, beneath the headline, when it came to the first of the four outcome measures, *historical thinking*, students in treatment classes outperformed counterparts on only two, not all four measures of historical thinking: *sourcing* and *close reading*, not *contextualisation* and *corroboration*.

It is important to note how Reisman characterises pupils' improvement in the two measures of historical thinking which pupils did make progress (*sourcing* and *close reading)* as reflective of 'discrete concrete actions such as immediately bringing one's eyes to the source note at the bottom of a page, or underlining vivid language' (2012:104). Reisman concludes,

> It remains unclear whether contextualization and corroboration are more sophisticated strategies than sourcing and close reading, whether they depend on a deeper epistemological understanding of the discipline, rather than mastery of discrete behaviours.' (2012:104).

Despite pupils' gaining substantive knowledge and developing knowledge *of second-order* concepts, the interventions were limited in their ability to secure progress in pupils' reasoning in response to questions requiring original (or first-person) argumentation. All three studies find pupils make limited, if any, progress in their historical reasoning.[26]

## Interpreting the research

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[26] This finding may echo problems encountered in conceptual change research in science (Özdemir & Clark, 2007; Hardman 2017).

These research findings reporting the limits of pupils' knowledge development may be interpreted differently, someone may conclude that the effort is misguided, that such interventions cannot change pupils' *second-order* knowledge in such a way as to inform their historical reasoning, either at all, or on these research timescales, or using these research interventions. It is possible to conclude that there are too many variables impinging in uncontrollable ways for researchers to be able to show the efficacy of the interventions. It could be argued that educationalists know how to foster pupils' *second-order* historical reasoning, but there could have been a lack of fidelity enacting the intended intervention or a lack of literacy needed to enable pupils to express their historical argumentation in writing. It could be objected that the research discussed takes written work as a proxy for pupil reasoning despite the possible gap between what is written (or said) and meant. It is nevertheless legitimate for the researchers to use written answers as a key measure of pupil reasoning to conclude that the quality of pupils' observable reasoning did not improve in particular ways as the standard way that reasoning is assessed in history is to infer the quality of a pupil's historical reasoning from their written answers *and* because the researchers do not suggest that there were improvements in non-written reasoning. Even if we were to be mindful of the literacy challenge, there is no reason to therefore conclude that the influence of the knowledge theorisation can be excluded as a worthy consideration.

My discussion is not an attack on efforts to teach for pupils' disciplinary understanding. I am not arguing that no pupils improve their historical reasoning when taught by teachers designing instruction informed by the distinction of knowledge-types. My interest is in exploring how our knowledge theorisation might be related to why so many pupils do not reason better despite experiencing a curriculum influenced by knowledge-type considerations. This is not to deny that there are a range of contributing explanatory factors beyond knowledge-type theorisation. My interest, however, in these examples is to ask how educationalists can take the development of *second-order* conceptual understanding as the object of their instructional design, yet pupils continue to make only marginal, if any, gains in their ability to reason historically. Specifically, I am interested in what role if any educators' knowledge-type theorisation might be playing in the results reported in the research above.

The research above suggests pupils seem to know *about* second-order concepts but cannot seem to *use* them, that is, they have some knowledge of how historians use the concept of

cause or change or evidence but they themselves cannot deploy these concepts effectively when they try to explain an event, characterise a change, or weigh evidence in relation to a claim. Clearly, if pupils cannot apply their knowledge, this calls into question the sense in which they can be said to have understood the knowledge in the first place. This observation is worthy of investigation. When considering the weaknesses in pupils' historical reasoning reported by the researchers, it seems that being versed in the workings of *second-order* concepts is not the same as being able to put them to work in a way that is adequate to the demands of the puzzle faced.[27] It may be that the research described suggests that statements that name historians' heuristics and practice, that is, knowledge '*of*' second-order concepts and their workings, do not adequately encapsulate the operation of this knowledge in pupils' first-person experiences of historical reasoning, that is, '*as*' historical thinkers.[28] It seems as if *second-order* concepts, said to regulate the practice of doing history, appear to reify into something else but when, why, and how this happens, if at all, and if this is a helpful description of what is happening, requires further analysis.

In Chapter 2, I considered the importance of noticing and clarifying when we are talking about *second-order* knowledge in the *extracted* form (discussing 'rules' and 'tools') and when are we using *second-order* knowledge in the *embedded* form involved in thinking about the past. What happens to the nature of knowledge when 'ways of seeing' (*embedded second-order* knowledge) that we take for granted when seeing, becomes the direct object of our gaze in teaching? Have we potentially changed the nature of this knowledge in a very subtle way in classroom practice? Despite its flaws (which become apparent after a study of Inferentialism in Chapter 4), the lens analogy in Chapter 2 allows us to talk about the sort of shift that might be in play here. We can contrast looking at and describing the lens from *using* the lens, that is, from looking through it to the world beyond. The teacher's capacity to *extract* second-order knowledge and shift its position or occurrence from its involvement in our thinking into something we describe in a sentence, seems to go part way to accounting for what may have

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[27] I return to this phrasing in Chapter 5 to suggest how helpful it would be to clarify that this occurrence is not because pupils' knowledge is missing a distinct type of knowledge which needs to be added but because the knowledge present is not adequate to the job at hand.

[28] Just to reiterate my caution in the previous footnote, without the work done in Chapter 4 and 5, there is potential for this phrasing to be taken to suggest a division in knowledge-types, either within second-order knowledge or between second and first-order knowledge.

occurred in the quasi-experimental research findings discussed above in which pupils appeared to have knowledge '*of*' history's *second-order* concepts but not knowledge '*as*' a historical thinker, that is, as someone who is deploying those *second-order* concepts effectively in 'doing' history oneself. The key possibility is this, in the research, the pupils' ability to discuss ideas about the lens that historians use appeared to outstrip their ability to improve the lens they themselves saw through. Two interesting lines of investigation emerge. How do we explain this phenomenon, what words do we use to describe this feature of pupil knowledge, is knowledge-types our best explanation?   Is our teaching inadvertently contributing to this phenomenon or failing to alleviate it, and what parts of curriculum-making would we need to examine to discuss this phenomenon further? Before taking up these lines of investigation, I exemplify what I mean by the difference between *second-order* knowledge in an *extracted* and *embedded* manifestation by returning to the example I used to illustrate the enquiry approach to teaching history in Chapter 2.

## Knowledge 'of' second-order knowledge (extracted) and knowledge 'as' a historical thinker (embedded):

What is the difference between knowledge '*of*' the 'rules' and 'tools' used by historians and knowledge '*as*' a historical thinker informed by those 'rules' and 'tools'? The example of an enquiry-based lesson sequence discussed in Chapter 2 asked 'How different were the motivations of participants at the Berlin Conference in 1884-5?'. In that example, I discussed how pupils, in debate with their peers, could realise that their estimations of similarity between the conference leaders' motivations differed due to the way some pupils had considered the leaders' personal ambitions while others had relied more heavily upon the leaders' goals as representatives of their country's wishes. In the lesson sequence, pupils encountered the way terminological differences influenced *what* they claimed about the extent of similarity amongst leaders' motivations. This *embedded* experience of definitions mattering was *then* named by the teacher in an *extracted* statement about how the definitions of terms influences decisions about the extent of similarity.

Simply hearing and being able to repeat the 'rule' that 'historical claims depend on terminology choices' is not enough for most pupils to be able to act fluently with this information. The idea is that knowing a rule does not simply involve the ability to state it, it

involves the ability to use it. It is unlikely that a pupil will ever be asked directly about how historians attend to definitions. The pupil will be examined on the effectiveness with which *they* can deploy the historian's heuristics – which is not straightforwardly equivalent to being able to say *that* the Berlin leaders were thus motivated or *that* historians are precise in their use of language. To take an everyday example, just as knowing the definition of collaboration is not simply the equivalent of collaborating, so something seems tricky here. The knowledge of exercising clarity-of-terms is not simply a matter of knowing some factual content about the past under consideration, but *neither* is it simply appearing to know a reified statement about the historian's practice. The details of the Berlin Conference and the fact that historians are precise and explicit in their terminology could be said to be knowledge '*of*' *first* and *second-order* knowledge. It is not the end for the pupils' learning. The teacher intended pupils to bed-in knowledge that will carry forward as a future responsiveness manifest in instances which could draw on similar understandings. A responsiveness forged and deployed through very particular reasoning.

Recall of other people's arguments about the extent of similarity in the Berlin Conference leaders' motives, no matter how well they are comprehended, cannot test the pupil's ability to independently deploy historians' 'rules' and 'tools'. There seems to be a difference in knowledge's qualities that is not clearly explored in the existing knowledge-types theorisation. It appears as though pupils cannot just have knowledge '*of*' the past or '*of*' the historian's mental disposition or ways of practicing (*second-order* or *disciplinary* knowledge). Pupils need knowledge '*as*' a historical thinker, someone who attends to clarity of terms in judging similarity.[29] The teacher is looking to assess the pupils' understanding of the role of clarifying terms whenever the next opportunity for disagreement (or confusion) resulting from differently defined terms arises. There is slim chance this next opportunity will have much to do with leaders' motivations, the Berlin Conference, or the extent of similarity; the teaching will have moved on to the next topic and another feature of the practice of history. Being able to repeat a sentence about the importance of definitions or even being able to repeat a sentence that says leaders personal and public motivations differ therefore one needs to identify which meaning one is using, seems to differ from pupils attending to terms

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[29] As explored later, to understand this as a move between a first and third-person participation may be less helpful than using the conceptual how to explore what may be going on here.

when setting forth future claims in history. We can distinguish between pupils appearing to have knowledge '*of*' the principle, and them having knowledge '*as*' someone for whom the principle informs thinking.[30]

Returning to the quasi-experimental research above, the published detail is just not fine-grained enough to permit robust comment on the causes of the shortfall in pupil learning which the studies report. The fact that pupils were including causal terminology which they were given, or were answering questions *about* second-order concepts, but were *not able* to offer a better causal explanation, suggests that there may be something to this '*of-as*' appearance, perhaps related to the teacher's sensitivity to the *extracted-embedded* occurrence of *second-order* knowledge. It is perhaps prohibitively difficult for the researchers to capture the level of granularity of *content-activity-purpose* combinations needed to understand just what learning might have been happening in the classrooms taking part in the research.[31] We saw with the example of Charles I execution image discussed at the end of Chapter 1 how readily the smallest of changes in teacher's focus can change the learning. In the finest-grained moves imaginable, the teachers and researchers working in the above quasi-experimental research could have slipped from teaching that would have changed pupils' lens, that is, the lens they looked through when handling the past, into teaching that would have given pupils some more sentences about historians' lenses and how they work. Considering the literature indicative of knowledge theorisation in history education, as discussed in Chapter 2, the distinction in knowledge-types, that is, between *first* and *second-order* knowledge as they are commonly understood, or knowledge about the past and knowledge about how our knowledge of the past is created and structured, does not explicitly speak to the distinction between the *extracted* and *embedded* occurrences of *second-order* teaching, or how this shift within second-order or disciplinary knowledge could relate to limitations in pupil reasoning. My work as a teacher educator affords me an in-depth view of

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[30] The classroom implication for learning is the possibility of a reversal in what can be a common teaching order. A prominent assumption can be that the educative process runs from setting forth a principle then checking pupils can deploy it. Such an approach might be appropriate in certain circumstances. As evident in later chapters, however, there is also good reason to suggest that history teachers need to be able to employ different teaching techniques. Here, the ability to craft the conditions under which the principle can be experienced by pupils, then naming it, then offering pupils further opportunities to experience its employment.

[31] This shortfall may be more than a limitation in reporting. Teachers or researchers may not have the expertise to understand the classroom occurrences at a sufficient level of granularity.

student-teachers' instructional design. This enhanced level of granularity enables me to consider how limited developments in pupils' historical reasoning could be related to facets of teachers' knowledge theorisation and how it manifests in teaching.

## 2. How does my student-teachers' instructional design suggest limitations in theorisation?

The research studies reported above do not enable the level of scrutiny used in the *content-activity-purpose* example (see footnote in the introduction of Chapter 3 for exemplification of these terms). How does my experience as someone with access to fine-grained lesson planning contribute to the discussion of knowledge-type theorisation and its manifestation in the classroom? On the basis of my experience of student-teacher lesson planning it is possible to identify two archetypical problems in student-teachers' instructional design which may contribute to pupils' partial knowledge gains, as reported above. These flaws may be related to limitations in educationalists' existing knowledge theorisation because they could be based in student teachers' assumptions about the nature or attributes of knowledge. These archetypes have been created from the hundreds of examples of student-teacher lesson planning that I have scrutinised over the years. Each mistake is a version of student-teachers privileging one component (content or activity) in the *content-activity-purpose* formulation describing lesson segments, rather than considering the potential influence of the components in combination and sequence.

### Designing instruction as if the knowledge to be learned is an *entity* within the lesson content

From my experience scrutinising student teachers' instructional design, it is common for a student-teacher to select a text which explains the causes of World War One (lesson segment *content*), and mistakenly assume that pupil-learning can be identified as causal reasoning just because the content is about causal reasoning. To reason causally, is to formulate plausible causes, not to simply understand or repeat other peoples' causal reasoning. It is not that understanding someone else's claim is not important or cannot help us in formulating our own claims, it is that understanding someone else's claim is not making one's own claim, and

should not be confused as such, just as finding a joke funny is not making a joke or understanding some else's prediction is not making a prediction. Making a claim and understanding a claim are not identical learning intentions. It is not enough for the content of the lesson to simply be about history relevant to the lesson question, for example, the causes of the first World War, the activity also needs to align to the content and the learning purpose. If our purpose is to improve the quality of pupils' causal claims, then only giving pupils content in which the causal claims are already made, circumvents the desired thinking. This is one way in which teaching can be geared towards developing pupils' knowledge 'of' history without sufficient consideration of pupils' knowledge 'as' a historical thinker, while imagining one is teaching for history's *first* and *second-order* or *substantive* and *disciplinary* knowledge.

The student-teachers making this mistake may be overly reliant on knowledge as *entity-like*, thus teaching is providing pupils with the relevant lesson *content*. It is as if the student-teacher believes that learning will occur through pupil exposure to this content. When making this error, the student-teacher may not be appreciating how the quality of a pupil's ways of seeing is potentially masked by being lifted from what was given in the text or in the lesson discussions. The pupil's answers are therefore not revelatory of the pupil's actual ways of seeing the world, but of the disciplinary sophistication inherent within the 'borrowed' claim about the past.

## Designing instruction as if the knowledge to be learned is an *act* within the lesson activity

Another common occurrence in my student teachers' instructional design is imagining the activity determines the learning. For example, if the teacher selects an activity such as pupils ranking the relative importance of religious changes during the Reformation, it is a mistake to assume that the learning can be identified as evaluating changes just because the activity names that historical thinking activity. Just as it is not enough for the content to simply be about the history, it is not enough for the activity simply to be the named historical thinking activity. This opportunity for cognitive activity falls short in multiple ways. For example, pupils fall back on everyday ahistorical reasoning if the historical content upon which they are to make a claim is missing or too thin. If no one could ever offer a historically valid case for *this*

change being more or less important than *that* one, based on the content provided, then the history is being used to confirm what one already thinks, not to open the pupil to the possibility of new, more historically sophisticated ways of thinking. The student-teachers making this mistake may be overly reliant on knowledge as *act-like*. Thus, teaching is providing pupils with the relevant lesson *activity*. It is as if the student-teacher believes that learning will occur through pupil performance of this activity. When making this error, the student-teacher may not be appreciating how the quality of the pupils' ways of seeing cannot be enhanced without access to seeing sufficiently rich content presented under particular conditions. Content which makes particular lines of argument available. Pupil knowledge development can fall short if student teachers attempt to teach for the development of pupils' knowledge 'as' a historical thinker but without the necessary knowledge 'of' what historians already know.

In reality, student teachers tend to offer pupils lessons which move back and forth between a reliance on knowledge as *entity-like* or knowledge as *act-like*, without an adequate theorisation of what they are doing and why.

## Conclusion

Discussion of the quasi-experimental research and my own experiences of student-teacher understanding, teachers educated in history's 'body and form' can struggle to articulate and operationalise their learning intentions. Teaching can seem like a mysterious process within which different considerations have to be held together in skilful tension: developing pupils' comprehension of factual knowledge *and* the understandings necessary to engage in disciplinary-like practices; using teacher exposition *and* opportunities for pupil puzzling. Numerous history teachers deploy sophisticated tacit knowledge, and many collaborate to build upon each other's classroom experience (Counsell 2011, Fordham 2016). Nevertheless, in my work as a teacher educator I meet many beginning and experienced teachers who are disappointed with the fruits of their teaching and report struggling to give coherent voice to just *what* teacher knowledge informs their practice (Husbands, Pendry and Kitson, 2003).

It is difficult to work out how, when and why to move pupils' attention back and forth between knowledge 'of' historical thinking to knowledge 'as' a historical thinker.[32] It is extremely demanding for history teachers to move effectively from *embedded* to *extracted* disciplinary knowledge and back, or between what appears to be *entity* and *act-like* knowledge. It is challenging to know when, why and how to move between pedagogies of direct participation in historical thinking and observation of and reflection on historical thinking (one's own or other's). Stressing the value and importance of different knowledge types such as *first* and *second-order* knowledge does not address this issue at the level of detail needed.

The existing characterisation of knowledge in history education does not extend much beyond an account of there *being* different knowledge-types and these orders *being* valuable and mutually dependent. As we saw in Chapter 2, educationalists can struggle to capture the nature and interplay of the knowledge classification they have created. The literature tends to slip unnoticed between talking about the historical knowledge as something that exists beyond knowers, as knowledge that exists somewhere and as such, knowledge they too need to have knowledge '*of'*, and then talking about knowledge '*as'* the activity of knowers, as something that is actualised in deployment. How do we help educationalists who, at the crudest level of discussion, imagine that now they are teaching pupils a distinctive type of knowledge which is called *substantive* knowledge and not *disciplinary* knowledge, or that now they are teaching a distinct type of knowledge which is *disciplinary* and not *substantive* knowledge? Our theorisations matters because our understanding, tacit or otherwise, of the nature of knowledge, will influence our teaching and our explanation of learner outcomes.

The literature distinguishes between *first* and *second-order* knowledge, *substantive* and *disciplinary* knowledge, however, I have argued that this distinction remains ambiguous for many as characterisations involving *aboutness* and *attribute* (both *entity* and *act-like* knowledge) collide. I have also argued that our knowledge theorisation brings classroom implications, for example, the two-part distinction (between first and second order or substantive and disciplinary knowledge) makes it difficult for us to discuss the *embedded* and

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[32] The potential misconception in this 'of' and 'as' phrasing does not come into view until we include an examination of the inferential conceptual how. It is yet another knowledge-types characterisation that can only be fully helpful if our conception of knowledge sits within a consideration of what kind of a thing conceptual knowledge is.

*extracted* guises of *second-order* knowledge which seems to correspond to the idea of knowledge '*of*' history and knowledge '*as*' historical thinkers. I believe finer distinctions in knowledge types can help. In my Institutional Focused Study (McCrory 2015b), I used different analytical distinctions to discuss history teaching. I explored applying the '*of*' and '*as*' distinction, used above to discuss *second-order* concepts, to talk about a possible four-part rather than two-part knowledge distinction. I drew on Michel-Rolph Trouillot's (1995) description of history as being made by 'doers' and 'tellers'. This analytical distinction allowed me to draw attention to pupils '*as*' historical 'doers' in their lives as well '*as*' 'tellers' of history in addition to pupils as people with knowledge '*of*' doers and '*of*' tellers.

A leading academic in conceptual change literature, diSessa (2014) noted that the focus on misconceptions within research slowed in the early 1990's as questions arose over concepts pervasiveness and stability in learners' thinking. Writing in 2014, diSessa remarks,

> This simple story – entrenched but false prior beliefs interfere with learning and need to be overcome – was compelling to educators and resulted in significant funding and publicity....However, public impact and most research remained largely at the primitive level of documenting misconceptions, rather than approaching deeper questions such as: What is a concept?....Most important for the learning sciences, how do genuine scientific concepts develop out of naïve ones? (2014:94)

I return to the challenges of understanding and acting upon history's knowledge theorisation in Chapter 5, as Inferentialism enables further explanation of the nature and role of knowledge-types in history teaching. To conclude the first half of this thesis, while ever finer distinctions such as knowledge types can help support teachers' classroom practice, they can only enhance knowledge theorisation partially while they rest on the *assumption* of distinction rather than an *explanation* of distinction in knowledge types. The knowledge type distinction cannot be adequately explained without a theorisation of what conceptual meaning *is*. I now use Inferentialism to further understand the knowledge-types distinction.

# Chapter 4. What is Inferentialism and how is it pertinent to knowledge development in education?

We often describe what goes on in the classroom as being the way it is because of the nature of the parent discipline. For example, the curricular aim of teaching pupils how history is constructed (Shemilt, 1980) arises from the disciplinary distinction between the past, which is beyond reach, and history, which is formed from surviving traces of the past (Bevir 1994; Megill, 2007). Classroom practice has also been heavily influenced by research emerging in domains such as psychology. For example, from cognitive psychology we gain pedagogical techniques such as *retrieval practice* which takes account of what we now think about the formation and storage of memories (Roediger et. al., 2011). The process by which words become meaningful is central to what happens in the classroom and yet receives little discussion in educational discourse. Asking what it is for words to become meaningful is not a straightforward matter. Getting clear on *what* is being asked when one questions how words become meaningful or how concepts become contentful, is a helpful beginning.[33]

You know who I am referring to when I say Donald Trump, and you know what I mean when I say I had bacon and eggs for breakfast this morning. The words I use are about something and you know what they are about. Meaning is shared between us in the interaction of my uttering and you interpreting my utterance. But that is a marvellous thing. How is it that the concepts I use, the shapes I draw, or the sounds I utter, can be about something else? How do they come to stand in for something beyond them, and what is it that they are standing in for? The question of *what* meaning is, is not, am I correct to call this a cat, or am I mistaken, and it is really a dog. *That* concern is whether I am right in thinking as I do, of what it means to be right, and of how such rightness and wrongness is determined.[34] That is an epistemic question, within a Cartesian problematic, about how I know, and how I can trust what I think I know. My *initial* concern here is rather, whether deceived or deluded or not, *how is it that* my utterances and conceptual thoughts can 'latch' or 'hook' onto that which is beyond them,

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[33] I am not differentiating between words and concepts as a focus of this thesis because I want to take the broader concern which applies to both, how, and what is entailed in, our representations referring to things beyond them, which is to say, how they are contentful, what does that meaningfulness or contentfulness entail?

[34] I am interested in the question of correctness, however, I come onto that concern after distinguishing it from the more fundamental question of how or what it is for representations to refer to phenomena.

and how is it even possible that you can know or derive what I seek to accomplish by them? That is an ontological question, within a Kantian problematic, about what kind of a thing words and concepts are, and how they can do what they do.[35]

The philosopher, Robert Brandom (1994, 2000) distinguishes two contrasting accounts of how concepts become contentful. He characterises the Representationalist account as the pervading paradigm in contrast to his own *Inferentialist* account of meaning. Both will be explored further in the following section. In short, according to the Representationalist account, words and concepts are meaningful by naming objects and states of affairs in the world. In the Representationalist account, the child has learned to make sense of the sentence, 'The cat sat on the mat.' by first naming cats in the world with the label 'cat', mats with the label 'mat', and so on. The child then builds up the meaning of sentences word by word. In the Representationalist account, words or representations such as 'cat' and 'mat' relate to that which is represented, cats and mats in the world, through an act that need not involve our *rational capacities*. What is meant by *rational capacities* needs to be clarified, and the subsequent section undertakes this clarification, however, I simply identify the involvement of our *rational capacities* now as the feature which distinguishes the Representationalist and Inferentialist account. The Inferentialist account begins explaining how concepts become contentful with our *rational capacities*, the Representationalist account does not. In the Representationalist account naming and labelling word to world and building up to the meaning of strings of words and sentences, need not begin with our rational capacities. Inferentialism claims that our representations cannot refer to phenomena without beginning with the involvement of our *rational capacities*.[36] Working in the philosophy of education, Jan Derry (2017) has done much to bring Inferentialism to the classroom, and captures the issue thus,

> …the distinctive features of human thought. Our peculiar ability to let one thing stand for another, "and what the relationship so established consists in", as Peregrin notes, "is very difficult to explain in a non-mysterious way" (Peregrin, 2014, p. 1). Inferentiailism, however, brings to light just those aspects of this

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[35] To borrow from a classification developed and used by the philosopher James Conant.
[36] An obstacle to understanding Brandom's account is to assume that he is anti-representation, he is not. Inferentialism is an account of how our words and concepts refer to that which is beyond them, it is not a denial of a representation's capacity to refer to something.

process of representation which are significant for educationalists concerned with how learners grasp concepts; moreover, it confronts the question of precisely what this grasping of concepts comprises. (2017:405)

In this chapter and the next, I explore if, and in what ways, we can shed light on our conversation about school knowledge and pupils' conceptual development, particularly in history, through a consideration of what it is for words and concepts to be meaningful or contentful. In much education discourse, this consideration is treated un-problematically, as if the question of how words and concepts are meaningful has already been settled. History educators often talk about what first and second-order knowledge (or substantive and disciplinary knowledge) is needed in the curriculum, in what proportion, combination and sequence, and how it should be taught. These are essential concerns, but they already presuppose a conception of meaning, that is, these questions are downstream of the upstream question of 'What it is for concepts to be meaningful or contentful?'. It is not that the downstream questions will be dissolved or resolved through a consideration of the upstream question of meaning. Educationalists will still need to think through curricular and pedagogical questions of knowledge types, sequences, combinations, and so on, but as this chapter illustrates, a failure to pose the upstream question of meaning misses how different assumptions carry different implications for education. Put conversely, it is helpful to recognise how we risk a partial and potentially distorted discussion of curricular and pedagogical questions if we do not scrutinise our assumptions about how words and concepts have meaning.

This chapter describes two contrasting accounts of how words have meaning, an Inferentialist and Representationalist account. I focus on Inferentialism as a particularly helpful account for teachers thinking about pedagogy and knowledge and I draw out differences which have implications for classroom practice to be explored further in Chapter 5. I begin by clarifying what I mean by *rational capacities* as I have identified their involvement in meaning-making as the distinguishing feature between the two accounts. I go on to highlight four aspects in Brandom's account of meaning, his account of meaning is inferential, holistic, constituted in practice, and implicit. Each of these aspects are interdependent, making the explanation of each in turn problematic. Separating each interdependent aspect of Brandom's account from

the others risks distortion, however, attempting to show all aspects simultaneously risks missing finer distinctions. I move from discussing individuated aspects of Brandom's account to consider the role of *normativity* in meaning-making and Brandom's use of the analogy of a game to characterise discursive practice.[37] I discuss how it is this *socially normative* characteristic of Brandom's account that describes how we can communicate through language and how we can think about standards of correctness in our concept use. Even though Brandom offers a reason-based account of meaning, it is helpful to see how the inferential, holistic, practice-based, and implicit aspects of his account appear in language use *without* overt or laboured reasoning. To mitigate conjuring up an overly rationalistic impression of Brandom's account, I share everyday examples of children using concepts. I also intend these everyday examples to illustrate the interdependence of the aspects of Brandom's account and to begin to bridge the divide between a philosophic account and classroom practice.

## 1. Rational capacities: Inferential relations and responsiveness to reasons

The route I take through Brandom's account begins by clarifying my use of the phrase *rational capacities* above. *Inferential relations* are pivotal to Brandom's Inferentialist account of meaning. The human capacity to be responsive to inferential relations is described at length in his work and is difficult to convey briefly. Nevertheless, given their centrality, I begin by picking out ideas which inform Brandom's insistence that meaning is a rational activity. My goal is to first convey to the reader a general sense of what Brandom might mean by *inferential relations* and our capacity to be sensitive to and respond to them. In the subsequent section I explain the inferential aspect of Brandom's account of meaning.

One starting point, in understanding Brandom, is to consider how humans can discern all manner of relationships between all kinds of phenomena. For example, some relationships are associations between smells like cinnamon and memories of events like Christmas, between entities like spiders and emotions like fear. We also notice regularity. For example, we think that the buoyant material will float the fish hook whether I put it in the river today,

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[37] Discursive practice is the way we use language in thought and written and spoken word according to Brandom's account of what concepts entail

tomorrow, or the next day. We think that the fish will be preserved as a consequence of being smoked whether I or you or someone else smokes it. The floating of the fish hooks and the preserving of the fish are cases of what Brandom refers to as *inferential* relations and they are of particular interest to him.[38] The *inferential relations* that Brandom has in mind are the *incompatibilities* and *consequences* between phenomena. For example, the weight of a baited metal fish hook is *incompatible* with floating; preserving fish is a *consequence* of smoking them. In Brandom's account, these are relationships in the physical world existing amongst phenomena and we are the sorts of animals that can be aware of these inferential relationships.[39] Brandom argues that humans are sensitive and responsive to the sets of *incompatibilities* and *consequences* that situate phenomena in relation to other phenomena. Brandom characterises this awareness as a sensitivity or responsiveness in order to indicate that while we recognise these *inferential relations* we may not necessarily overtly or explicitly take stock of our awareness.

Brandom is interested in our sensitivity and responsiveness to what he refers to as the inferential relations of *possibility* and *necessity* amongst phenomena in the physical world. Brandom's interest in our responsiveness to inferential relations extends beyond the physical world to the social world of concept use. If we momentarily set aside the need to explain how representations refer to things beyond them and accept that societies agree on rules for language use, we can introduce what Brandom means by *inferential relations* amongst social phenomena, amongst our words and concepts.

The laws of nature govern hooks floating and fish rotting but referring to such occurrences with the representations 'floating', 'fish', 'hooks' and so on, is a human undertaking, it is a connection between word and world forged by humans. For example, in Brandom's account, historically and by collective convention, we have come to refer to this white and nutritious liquid as 'milk'. An element of Brandom's claim is that we are capable of sensitivity and responsiveness, not only to things *possible* and *necessary* in the physical world, *causes*, but that we also subject those entities that we create, our representations (our words and

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[38] *Inferential relations,* as used by Brandom, is discussed in more detail in the following section.
[39] See Sellars (1980) *Inference and Meaning* and Brandom (2000) for a discussion of the formal and material validity of logical inferences and the distinction between a practically and formally valid inference.

concepts), to the same sensitivity and responsiveness.[40] According to Brandom, there are inferential relations between concepts too, not just between physical phenomena, and we are responsive to the *incompatibility* and *consequence* relations between human-made social phenomena. For example, 'milk' can refer to milk because people do not call every liquid 'milk', they know that to call this liquid 'milk' is incompatible with calling it petrol or with it being extracted from the ground, they know that as a consequence of calling this liquid 'milk' they are entitled to think it is something that is drunk. The use of these representations or concepts, if they are going to do any work for us at all, *ought* to abide by our collective agreement about the *incompatibility* and *consequence* relations, otherwise they become meaningless, that is, they cease to perform their referring function. For Brandom, that we participate in calling milk 'milk', involves being sensitive and responsive to *incompatibility* and *consequence* relations amongst our human-made phenomena of representations.

As part of our capacity to respond to what we take to be the *incompatibility* and *consequence* relations between phenomena, we have the capacity to notice when our expectations of how we think things *ought* to be, that is, what incompatibility and consequence relations we think ought to adhere, are not met, both when perceiving the physical world *and* when using language. Rules are broken when someone insists that the baited metal fish hook *will* float, and when they say that it *is okay* to talk loudly in a library. In the first example, the representations are being used wrongly because the understanding of the world is wrong or because the understanding of the conventions of the representations is wrong or both. (Weighted hooks do not float; 'hook', 'float' and so on, refer to these things and not others.) In the second example, libraries and their rules are not constituted directly by nature but are a feature of the world because we have made them so.

Unlike the rules of nature, which cannot be broken (the heavy fish hook will not float because I think it so), our human-made rules can be broken (the heavy fish hook *will not* float but the person *can* talk loudly in the library). In the library example, the rules are not nature's rules

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[40] Things that are socially instituted, including not just our use of language but also our socially instituted practices of marriage or ownership and so on. Also, Brandom's claim is stronger than this, he does not just point out that our responsiveness to inferential relations is applied to representations, he argues that it is our responsiveness to inferential relations which constitutes our representations. This second claim is considered in subsequent sections. The point in this section is to bring the role of responsiveness to inferential relations into view.

of *necessity* and *possibility* that cannot break, but society's rules of *obligation* (to *be* quiet in libraries or to claim that libraries are quiet places) and *entitlement* (to read in a quiet place or to claim that libraries are places where one can read in quiet).[41] We can choose to flout society's rules, but with social repercussions. As with the fish example, when we break the rules governing libraries and the use of the concept library we may have misunderstood the human-made world, (the sort of places libraries are), or we may have misunderstood the conventions for representing the world (we thought the word library referred to something else) or both.[42]

In this discussion I introduce what Brandom has in mind when he refers to *inferential relations* because these relations are at the heart of his account of meaning as a reason-based activity and are the subject of the next section. To reiterate, Brandom argues that humans are sensitive and responsive to *incompatibilities* and *consequences* that situate phenomena in relation to other phenomena. Brandom characterises this awareness as a sensitivity or responsiveness in order to indicate that while we recognise these inferential relations we may not necessarily overtly or explicitly take stock of our awareness.[43] These phenomena and the relationships between them, which we are sensitive and responsive to, include phenomena of our making (word, concepts, other social practices) *and* phenomena of the physical world. I have referred to Brandom's idea of responsiveness to *inferential relations* as our *rational capacity* as a convenience to distinguish the two accounts of Representationalism and Inferentialism.

I suspended discussion of how words and concepts are meaningful and contentful in order to focus on Brandom's notion of *inferential relations* and our *responsiveness to inferential relations*. However, Brandom does not just claim *that* our responsiveness to inferential relations is applied to our representations (our words and concepts). In the discussion above, our representations appear to 'stand for' the objects or states of affairs that they represent.

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[41] Obligation and entitlement are central to Brandom's account of meaning and they are explored in subsequent sections, the point here is to convey the idea of sensitivity and responsiveness to inferential relations.

[42] The assumption here is that we wanted to obey the rules, which need not be the case, we may not simply be mistaken, we may want to break the rules.

[43] It is important to stress how 'reasons and reasoning' can trigger unhelpful connotations of overt and laboured figuring things out when Brandom has in mind something more akin to a background *rational capacity*, discussed in later sections.

Brandom's claim, to be explored in the sections below, is that our words and concepts connect to that which they 'stand for' through our sensitivity and responsiveness to incompatibility and consequence relations. Brandom claims that the *inferential relations* (the incompatibilities and consequence relations) that we recognise and create, constitute our words and concepts.

Before taking up Brandom's claim that our responsiveness to inferential relations constitute our concepts, it is worth reiterating the precise nature of Brandom's project because it can be easily misconstrued. When reading Brandom's Inferentialist account of meaning, the importance of reason-informed or rational activity is clear. It is also clear that Brandom thinks that it is important to understand concepts in networks of relations to other concepts. Neither of these observations, however, capture Brandom's fundamental project which is to account for how concepts are contentful. The idea of a reason-informed or rational activity, and the idea of concepts understood in networks of relations to other concepts, is central to many school subjects. Prizing both of these features does not make one's perspective Inferentialist in nature. For example, in the following extract Chapman (2011:2) explains what an argument is, and he identifies arguments as having two constituent parts, a conclusion (or claims) and a reason or reasons for that conclusion.

> To think about historical argument, you first have to understand what argument is. Many students do not and think of argument as abuse or dispute …. To understand how argument works you have to understand the constituent parts of arguments and how they fit together. How can we get students thinking logically?
>
> An argument, any argument, is an attempt to establish something and this thing is called a conclusion. The conclusion of an argument can be that you should do something, that you should believe something, that you should like something, that you should explain something in a particular way, and so on.
>
> Arguments do not simply consist of conclusions, however: they consist also of reasons proposed to establish conclusions. To understand an argument, therefore, you need to understand (a) what it is trying to establish (or what its conclusion is), (b) what reasons are offered in order to establish that conclusion and (c) how effectively the two fit together (van den Brink-Budgen, 2000).

Pupils often 'draw an inference' or 'conclude something' (Chapman 2011b:2) in history lessons, or scrutinise the inferences drawn by other people.[44] For example, Chapman (2011b:7) picks out the following conclusion from the work of a historian studying Nazi Germany, 'There were only 28 secret police officials for the Würzburg region of nearly a million people, therefore, the Gestapo could not have operated without the cooperation of the citizens of Germany.' The inference that is being drawn here, or the conclusion in this claim, is that Germans cooperated with the Nazis and the reason being offered for that inference or conclusion is that there were so few Nazi police officers for the large population therefore the officers needed the assistance of the citizens to operate as they did. While this claim is something this historian wants to say about the world using concepts that are already taken to be contentful, it is *not* an account of what it is for concepts to have content. The inferences that we can make once representations are in place do not address the question of what it is for those representations to be in place in the first place.[45] The question Brandom is attempting to answer is how the concepts that we use in claims are contentful. Brandom's question is, 'How did concepts get to be that way?' or 'What is it for concepts to be contentful?'. The question is *how* representations represent. The notion of sensitivity and responsiveness to inferential relations, what I referred to in the introduction as our *rational capacities*, sets the Representationalist and Inferentialist accounts apart in their answer to this question and, as explored in chapter 5, may be a basis for important differences that arise in classroom practice.

## 2. Four aspects of Inferentialism: inferential, holistic, in-practice, implicit

In the following discussion I do not offer an explanation or defence of Brandom's account. I find his account helpful and want to give enough of it to enable the reader to see that it is worth thinking about given its educational implications. A first step in clarifying what responsiveness to *inferential relations* entails is to contrast it to *non-inferential* responses.

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[44] 'Inference' is commonly defined as 'A conclusion reached on the basis of evidence and reasoning.' Or 'The process of reaching such a conclusion.' Or 'The process of deriving logical conclusions from premises known or assumed to be true.'

[45] A commitment to teaching pupils to reason and to see how concepts relate to other concepts answers a question about concept use but this commitment could be based on a Representationalist or Inferentialist paradigm concerning how concepts become contentful.

Brandom uses the following example to make a crucial distinction between responses that are and are not *inferential*, that is, according to Brandom, *conceptual* in nature. A parrot does not have the concept of 'red' even though he may be trained to squawk 'It is red' in response to the presentation of something of that colour because the parrot does not mean that it is red and not green. Brandom argues that a parrot squawking 'red' is evidence of a reliable differential response, a capacity shared by fire alarms and automatic doors programmed to respond in a certain way when they detect smoke or footfall. A reliable differential response is not an inferential response. A thermostat registering and responding to a change in temperature does not involve that thermostat situating the concept of temperature amongst a host of incompatibility and consequence relations. Brandom argues this *non-inferential* response capacity is not activity with conceptual content. A concept-using person, unlike the parrot, is engaging in an activity informed by responsiveness to inferential relations. The person is responding to knowing what follows from and what would count as reasons for the applicability of that concept (the inferential incompatibility and consequence relations). To bring out the alternative to a Representationalist account of meaning, Brandom takes the example of the simple sentence, 'It is red.' and says,

> To grasp or understand such a concept is to have practical mastery over the inferences it is involved in—to know, in the practical sense of being able to distinguish (a kind of know-how), what follows from the applicability of a concept, and what it follows from. The parrot does not treat "That's red" as incompatible with "That's green," nor as following from "That's scarlet" and entailing "That's colored." Insofar as the repeatable response is not, for the parrot, caught up in practical proprieties of inference and justification, and so of the making of further judgments, it is not a conceptual or a cognitive matter at all. (2000:9)

Brandom describes himself as approaching content or semantics from the side of inference rather than from the side of representation. To function as a concept, the word 'red' can be used to refer to the colour of red things because we understand that it is not 'green' and so on. When Brandom claims that conceptual content is in the first instance 'inferentially articulated' he is referring to the argument that the meaning of utterances is constituted by our responsiveness to inferential relations. *Inferentially articulated* is a common phrasing in Brandom's work, it refers to the idea that responsiveness to inferential relations of incompatibility and consequence between phenomena constitutes conceptual content.

As stated previously, according to the Representationalist account, words and concepts are meaningful by naming objects and states of affairs in the world. In the Representationalist account, the child has learned to make sense of the sentence, 'The cat sat on the mat.' by first naming cats in the world with the label 'cat', mats with 'mat', and so on. The child then builds up the meaning of sentences word by word. In the Representationalist account, words or representations such as 'cat' and 'mat' relate to that which is represented, cats and mats in the world, through an act that need not involve our *rational capacities*. Bakker and Derry (2011:13) refer to this paradigm as treating representations as if they are 'abstract mirrors of some reality'. Brandom denies that a connection between word and world can be assumed or explained without reference to our *rational capacities*.[46] The sense in which words have the capacity to 'stand for', is for Brandom, precisely *not* the act of 'standing for', as a Representationalist account would have it. For a representation to be understood *as* a representation is for us to be aware of the inferential relations involved. For example, we could not be taken to understand that 'cat' means cat if we could not distinguish relationships such as 'cats are animals which mean they are not mats', or 'cats do not have wings which means they do not fly'. To call this animal a cat is *incompatible* with it being called a dog or being able to live under water but also entails the *consequences* of being an animal that purrs, has claws and is a carnivore. The claim is not that the child needs to recognise *all* the possible inferential relationships, or a *specific* set of relationships. The claim is that if the child does not recognise *any* of these inferential relationships, they could not be counted as understanding that 'cat' means cat. They do not yet respond with a concept of cat. This continuum of knowing more or fewer inferential relations in the Inferentialist account of meaning leads to classroom implications which become important in Chapter 5. Again, it is worth reiterating, when I say a young child has learned the word 'cat' through their *rational capacities*, I do not mean that they have thought through the use of the word 'cat' in an overt way and have consciously deliberated whether or not they should call the fur ball on the mat a cat rather than a dog. What Brandom means is that sensitivity to the existence of inferential relations constitute the concepts in the first place. How one thing is inferentially related to another gives it its meaning. For Brandom, 'To grasp or understand . . . a concept is to have

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[46] Refusing to begin an account of meaning with a Representationalist account of representation, is not a denial of a representation's capacity to refer to something.

practical mastery over the inferences it is involved in—to know, in the practical sense of being able to distinguish, what follows from the applicability of a concept, and what it follows from.' (Brandom, 2000, p. 48). When we use any concept we are constantly fleshing out further relationships but a precondition for the child to use the word in an utterance is that they are already responsive to some of those inferential relationships. Emphasising how the inferential activity occurs *in-practice*, Derry (2017) uses the example of a child learning the word 'milk'.[47] Derry (2017) writes,

> When a young child first learns a word, that word arises in a particular context and form of activity, not in a vacuum. It is already situated in a rich set of practices which gave it meaning. To put it another way, when young children utter the word "milk" when demanding a bottle, they have already begun to form a concept of milk arising out of their contact with it within the practices of drinking and holding a receptacle. They have already begun to be sensitive to connections between the concept milk and other concepts. As a result, when the word milk is uttered, it is a response not merely to the milk that it stands for but also to a range of other concepts. The *representation* in the utterance "milk" is preceded by a variety of *inferential* connections to other entities. The connection between the representation and what it represents is already rooted in a web of reasons.

Derry does not spell out the inferential relations in this example, however, the set of related concepts simultaneously in play and the emergence of representation *in-practice* rather than in 'a vacuum' are conveyed very well. One can begin to see how we need not think of our ability to make words refer to phenomena as an overt and explicit act of reasoning, as we would normally think of reasoning, but can find plausible Brandom's claim that the rational act entailed can be explained as a form of responsiveness to inferential relations. We can imagine what relations of incompatibility and consequence the child might be responding to in using the concept milk, for example, that this white liquid in a bottle is not the brown liquid in the mug. This is not to say that the child would have these words, or be taking stock of her responsiveness explicitly, as if to say, 'And now I am ruling out that this could be tea.' it is just to say that we can see how sensitivity to whole networks of inferential relations develops and offers a plausible account of meaning. The meaning of the concept milk arose because the

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[47] The example simultaneously illustrates the holistic and implicit aspects of Inferentialism to be discussed later below.

interlocutors recognised the inferential interconnections between phenomena in contexts and practices which involved multiple phenomena. Even at the point that we appear to start with a representation, for example, an utterance that uses the word 'milk' for the first time, already there is a lot that is presupposed in the speaker's ability to use that concept. The concept can function as it does because of the host of inferential relations constituting it. This involvement of our *rational capacity* from the start is what sets Inferentialism apart from the Representationalist paradigm in which milk becomes 'milk' *without* the involvement of our responsiveness to inferential relations. Instead, Brandom inverts the order of explanation of how concepts are contentful. Contrary to 'Representationalism' which starts with representational primitives and uses them to understand content, the word 'milk' for the thing in the world, Brandom starts with our responsiveness to inferential relations. To take the representation 'milk' *as* a representation of milk could not have happened without our sensitivity to incompatibility and consequence relations. As explored further below and in Chapter 5, what Brandom is giving us is the intellectual resources to understand common classroom occurrences, resources that are not available in the Representationalist account.

The explanatory limitations of the Representationalist account of meaning as word-to-world naming activity is illustrated by an anecdote shared by a ski instructor as he relayed a memory from childhood. As the group of skiers were stopped on a slope, he reminisced to us about the location, a field his father had once owned. His family were farmers and as a little boy of three years old, he had accompanied his father to the slopes to tend to this field. It was some distance from their village and so they had brought lunch with them. Upon arrival, his father asked him to put the wine in the stream running through the field. As lunch time drew round, the father asked the boy to fetch the wine from the stream. The ski instructor, now well into his sixties, recalled how clear his memory of that moment was. He recalls being utterly confused by his father's request for he had poured the wine from the bottle into the stream, as instructed. There was no failure to understand the meanings of the words 'Put the wine in the stream.' and the child had done just that, but the meaning was not in the naming of word to world. A host of inferential relations involving the father's desire to drink the wine, the temperature of the wine, and so on, were all in play behind the father's explicit utterance and the child's meaning. From an educationalist perspective, the example illustrates how the father and the child use the concepts involved in the utterance, 'Put the wine in the stream.'

in the context of a whole set of differing inferential relations. Every word being used here already has particular relations to other concepts which determine their specific meaning at that point in time. As the example illustrates, teachers need to be wary of simply assuming that a child has the implicit inferences needed for the representations in the particular utterance. The representations in this case 'stand for' two quite different sets of *responsiveness to inferential relations,* the representations do not seem to represent by way of a straightforward label.

In addition to the inferential, holistic, and in-practice aspects of Inferentialism described through the examples above, a fourth aspect of Brandom's account also present in these examples is the *implicit* nature of the inferential relations constituting meaning. As above, to call this animal a cat is *incompatible* with it being called a dog or being able to fly but also entails the *consequences* of being an animal that purrs, has claws and is a carnivore. These *implicit* inferential relations make the reference to a cat possible, but these *implicit* inferential relations may or may not be uttered explicitly when the cat concept is in use. For example, you might want to say something like, 'The cat is purring.' which is giving explicit voice to one of inferential relations just mentioned (cats are animals that purr), but you might also want to say, 'The cat sat on the mat.' Which involves the inferential relations relevant to the concept of cat yet none of those implicit inferential relations which constitute the word 'cat' appear explicitly in that utterance. In other words, there are the implicit inferential relations that constitute the representation, and what you want to say with that representation is of additional interest. The representation 'cat', constituted by responsiveness to the inferential relations just mentioned, is being used to say something, 'The cat sat on the mat.' and whatever you mean by that something will be within what is possible given your responsiveness to implicit inferential relations.

There is a second feature of this *implicit* aspect of Inferentialism to consider. I have already drawn attention to the obstacle to understanding Brandom's account if the reader construes *reasoning* exclusively as an overt, effortful and deliberate activity. Authors are cautious to

avoid the word *reasoning* to describe the *implicit* aspect of Inferentialism (Derry, 2019).[48] Brandom himself uses phrases such as 'responsiveness to reasons' or 'inferential relations'. I have followed the phrasing most prevalent in the literature however, when relating Brandom's ideas to the classroom I have used phrases such as 'form or reasoning or judgment' and '*implicit* reasoning'. The extent to which it is appropriate to refer to the *implicit* aspect of Brandom's account as *reasoning* is not explored in this thesis.[49] The consideration which has been taken as paramount is the distinction between implicit and explicit reasoning. I have tried to convey the distinction in connotation from overt and deliberate reasoning on the one hand (something one does with one's contentful representations) to reason-based responsiveness and sensitivity to inferential relations on the other (something that constitutes conceptual content) by using the adjective 'implicit or explicit' consistently throughout. The *implicit* aspect of Brandom's account is important and will be a recurrent feature of discussion.

In keeping with a focus on the implicit aspect of Brandom's account, the inferential relations are something one must be sensitive to oneself. In the example above, two people might share the explicit word 'cat' but what matters most in the Inferentialist account is what constitutes that conceptual content as the inferential relations can differ. The idea of a system of implicit conceptual relations is developed further in the following example (The three mountain task), however, we can bring something new to the discussion so far if we focus on the *responsiveness* part in the example below.

Derry (2013) reinterprets Margaret Donaldson and Martin Hughes (1978) classic replication of Piaget and Inhelder's 'Three mountain task' experiment in light of an Inferentialist account of meaning to illustrate the importance of grasping implicit (unspoken) inferential relations. In the original 'Three mountain task' Piaget and Inhelder required the child to describe where the doll would view the objects on the mountain (e.g. the church is on the left for the doll and

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[48] Derry (2019) notes how McDowell sees no reason that rationalism must 'saddle itself with a pinched and shallow conception of reason' (2017, p.323). 'The remedy,' says McDowell, 'is not to abandon rationalism but to liberalize our conception of reason' (ibid., p.324).

[49] The sensitivity and responsiveness is a rational capacity and so the challenge may be predominantly one of connotation rather than a question of the appropriate use of the term and attention might be best placed on the implicit/explicit distinction for the purposes of discussing classroom practice.

on the right for me). As Derry (2013) explains, the experiment was designed to test the ability of the child to see the world from a view other than their own, an ability considered to be an important indicator of the ability to think abstractly. Piaget and Inhelder (1967) concluded from the original experiment that children failed to de-centre, thus supporting the characterisation that young children were unable to detach from their egocentric perspective. Derry (2013) explains the re-designed task and interprets its significance as follows,

> Donaldson and Hughes constructed a 'scene' where the child had to hide a 'naughty' doll from a policeman doll (i.e. to hide the doll successfully the child had to take the perspective of the policeman doll). Children taking the 'policeman task' were able to take another perspective from that of their own and Donaldson and her colleagues explained this in terms of the fact that the task 'requires the child to act in ways which are in line with certain very basic purposes and intentions (escape and pursuit) . . .' (Donaldson, 1978, p. 24).

> The important difference here is that the Hughes and Donaldson task gave children insight into the motives and intentions of the characters involved in the task unlike the doll in Piaget's mountain scene….

> It could be argued that what accounted for the success of children, in the task Donaldson and Hughes set them, was not only an appreciation of purpose but that the systematic structure of the task, in which the relationship of one element to another is clear, makes visible the 'reasons that follow from' and the 'reasons that are implied by' the task's events. In the mountain task, elements have no particular relation to one another. By contrast in the policeman task they are directly connected to each other. In the mountain task, where the child is only asked to give a description, the child's response is unconstrained and there is no need to see elements in any particular relation to each other, whereas in the policeman task the elements are interconnected from the start.' (2013:226-7)

The classroom implications of attending to the underlying structure of inferential relations will be explored in the next chapter, however, what matters in this example, is not just that there are 'a system' of inferential incompatibility and consequence relations in place which make sense of the words uttered in the task. A key point is the way the child was unresponsive to the potential inferential relations in the first formulation of the test but responsive to the requisite inferential relations in a different formulation. It is the *sensitivity* to the inferential relations that bears attention. It may not be that the child lacks the necessary responsiveness to demonstrate the understanding being tested. It may be that the child did not have that

responsiveness for one set of representations but had relevant responsiveness for another set of representations capable of testing the same understanding. Underestimating a child's capacity for understanding is an error and potentially more likely to arise within a Representationalist paradigm.

As explored in Chapter 5, one important classroom implication wrapped up in the claim that conceptual content is constituted inferentially is the reversal of the order in which we think of the cognitive activity of meaning making. The Inferentialist account has representing as constituted by reason. The Representationalist account builds a reasoning structure on top of a preliminary naming stage in which a representation simply corresponds with its object or phenomena. Brandom does not have one form of activity (responsiveness to inferential relations) by which we reason with words and a different form of activity (something other than responsiveness to inferential relations) by which words and concepts are contentful. In Brandom's account there are the utterances, including inferential claims that we might wish to assert as part of a history lesson, as with the example of the historian claiming German cooperation with the Gestapo, but there are also the *implicit* inferential relations which constitute the representations with which we assert our claims. By the Inferentialist account, our capacity to represent meaning is a form of reason-based activity rather than reasoning only becoming possible after a reason-devoid representing process has occurred.[50]

A second important classroom implication to be discussed in Chapter 5 arises from the holistic aspect of Brandom's account, a holism necessitated by meaning being inferential. If concepts' meanings are determined by the inferential relations the concepts stand in to each other, then there are likely to be classroom implications if teaching practices rely on teaching meaning through a one word-to-world connection at a time or if teaching practices do not attend to how the relevant inferential relations can become a part of the learner's understanding. As explored in chapter 5, Brandom provides the intellectual resources to discuss the disjuncture between individual words being taught to the child and seemingly understood yet whole utterances employing those words being bewildering.

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[50] I use the phrase *implicit reasoning* here as I am referring to the educational application of Brandom's 'responsiveness to inferential relations'.

Clearly teachers are interested in the correctness of concept use and therefore they need to understand what governs that correctness. In the following section I explore how Brandom uses the idea of normativity to bring into view the normative standards against which the correctness of concept application can be understood.

## 3. Socially Normative

Having noted in the introduction to this chapter that my *initial* concern was *how is it that* my utterances and conceptual thoughts can 'latch' or 'hook' onto, or 'reach out to' that which is beyond them, I now turn to discuss the rules which govern the correct usage of concepts in particular contexts. As stated previously, the laws of nature govern hooks floating and fish rotting but referring to such occurrences with the representations 'floating', 'fish', 'hooks' and so on, is a social undertaking, it is a connection between word and (social and physical) world forged by human activity. In the previous section I explored how Brandom means to claim more than simply that we *govern* our discursive practice with the same sensitivity to inferential relations with which we respond to the physical world. Brandom claims that it is our sensitivity to inferential relations that *constitutes* conceptual content in the first place, that is, that enables representations to refer to phenomena beyond them. Brandom uses the historical and social characteristics of inferential articulation to explain standards of correctness governing particular occurrences of concept use. In the following discussion I begin by emphasising the human activity of constituting conceptual content because Brandom's standards of correctness regulating social phenomena cannot be understood if meaning is taken for granted or assumed to be something other than human act.

Figure 1. Magritte Painting
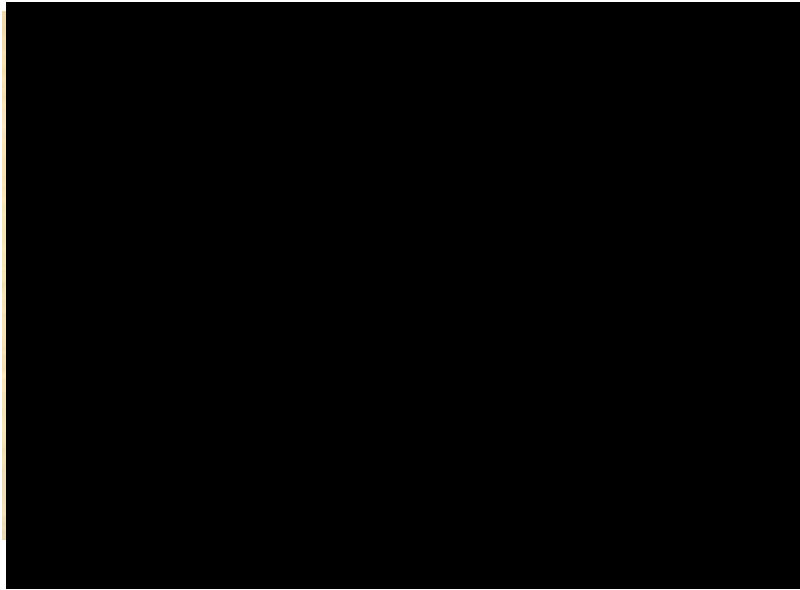
Magritte would have us know, 'This is not a pipe', Figure 1. The painting is humorous because it plays on how we are predisposed in everyday interaction to allow representations to stand for referents. The humour rests on there being rules that govern the use of the term, our interpretive act, and because there are such entities as pipes in the world to enable this painting not to be one. In discursive practice, that *this* can represent *that* is a choice. Unlike the physical properties of phenomena that can lend themselves to uses, for example, fire is inherently warm, a word or sentence does not just *have* its meaning, it has been, and has to be, taken as meaningful, over, and over, and over again. This is the *activity* of the classroom. The establishment of the rules governing the correct application of a concept is a historical and social practice. Money provides a helpful example of the normative dimension to human existence. For example, an analysis of the physical aspects of my five-pound note, its length, width, weight, and chemical composition will not inform anyone of what *money* actually *is* because that note represents or stands in for money *because* society takes it as so. The physical features, such as the metal or note of money, are not the constitutive features of money. It is the socially normative undertakings that allow money to function as it does. A person must become responsive to the rules governing the concept money if they are to come to know what money is. Furthermore, just because money is a conceptual construct does not make its existence merely a matter of *individual* opinion or preference. Being a conceptual construct does not rob money of efficacy in the world. No shop-keeper refuses my five-pound note on the grounds that they do not believe such a thing as money exists. Interpreters assign meaning to the intrinsically meaningless by taking them to have that meaning, by

understanding them that way. Brandom explains the derivative character of conceptual content by taking a case in which interpreters explicitly assign some meaning,

> They *make* an event mean something ("One if by land, and two if by sea…') by *taking* it to mean that, by understanding it that way. The meaning is conferred on the occurrence by the response to it that becomes appropriate, by the conclusions that are drawn from it….("And I on the opposite shore will be"). The intentional content of the signal derives from the intentional content of the beliefs it makes appropriate for its audience. Noises and marks on paper do not mean anything at all by themselves. Meaning is correlative with understanding, and they understand nothing. It is the possibility of *our* understanding them as expressing a content involving the application of concepts that makes *them* mean anything. Our understanding, our practices of interpretation institute that meaning, which derives from them. (Brandom 1994:60)

For Brandom, the content of our concepts is constituted by our human responsiveness to the incompatibilities and consequences, the inferential relations, in the physical and social world. We have seen how this means that in order to be able to take something (for example, a cat) *as* being something (a 'cat'), one must be able to distinguish in practice what follows from taking it as that, what would be evidence for taking it as that, and what seems incompatible with taking it as that. Although we might not think of it as such, recognising inferential relationships, is a form of judgment, though not necessarily an overt and explicit form of reasoning. It is something we bring to phenomena. Earlier in the chapter I noted how we can be wrong, that is, rules can be broken because we are mistaken about the inferential relations in the world or because we are mistaken about inferential relations in the concept use or both. If something is judgeable, it has a standard of correctness against which it is taken to be right or wrong. For Brandom, our meaning is our grasp of the social regulations or norms (the incompatibility and consequence relations), built up by society over time, and it is these norms which govern the standards of correctness of concept applications. Without these norms, our word use could not give us the power to converse or the option to break rules for effect.

Drawing upon Kant, Brandom argues that what sets humans apart from other animals is our ability to commit ourselves in what we say to how we take things to be. While we do not typically think of ourselves as assuming commitments, our sayings express judgements that

*are* commitments that we nevertheless *do* take on, for this is what it is to use a word or concept. Brandom (2000:108-9) describes how we take on incompatibility and consequence commitments, and refers to these as 'adopting a stance';

> The believer [that something is red] is adopting a stance that involves further consequential commitments (for instance, to the object perceived as being colored) that is incompatible with other commitments (for instance, to the object perceived being green), and that one can show one's entitlements to in terms of other commitments (for instance, to the object perceived being scarlet).[51]

Brandom holds that we are responsible for these commitments. Drawing on Hegel, Brandom sees an essentially *social* character to the norms governing conceptual content. We can only be responsible in a context in which others can hold us as responsible. Reciprocal *recognition* is a matter of my making myself responsible for something and recognising other's ability to hold me responsible in that way. Not only do we take on commitments in our saying and doing, we care about our *entitlement* to those *commitments*. According to Brandom, what makes concept use distinctive is that it is the practice of asserting. Brandom claims that assertions institute normative statuses of *commitments* and *entitlements* (referred to as 'stances' in the quotation above). When I make an assertion, I commit myself to reasons for it when it is challenged. I may commit myself to a claim without being entitled to it. There are certain claims, commitment to which blocks my entitlement to certain other claims. Participation in concept use entails caring about the correctness of those implicit inferential relations, caring about the social status of the normative status or stance we have taken in responding to particular incompatibility and consequence relations. The question is whether we are *entitled* to the commitments we have taken on. Derry (2019:9) relays Brandom's example of chess players, 'For example, I may claim to be a brilliant chess player but if those who I take to be good chess players do not have the same opinion, my attribution to myself of being good at chess fails (Brandom, 2014).'

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[51] 'The judgment that A is a dog is not incompatible with the judgment that B is a fox. The judgment that A is a dog is incompatible with the judgment that A is a fox…. Taking it that A is a dog does not entail that B is a mammal. But taking it that A is a dog does entail that A is a mammal.' (Brandom 2009:43-4)

The standards of 'correctness' of concept application rely upon the *reasons* of societal norms which Brandom argues are related to the *causes* of the physical world. When we come to think of how those norms are instituted and sustained, Brandom suggests that as sentient beings, we can reliably differentially respond to the world around us, a necessary condition of knowing anything about the world, and those reliable response dispositions can be tracked inferentially which is how reliable causal connections in the world come to be transferred into an inferentially usable form. Brandom uses the example of copper. If I say that I think that the metal tip of my pen is made of copper, there is a fact of the matter that I have committed myself to according to the metallurgists, whom Brandom refers to as the keepers of the concept copper. For example, whether I know it or not, Brandom claims I have committed myself to the pen tip melting at 1084'C and to it being a conductor because that is what follows from it being cooper. I have bound myself to a public norm that extends beyond my knowledge of the concept. We can disagree about the concept copper as a result of having different collateral beliefs about copper, but that disagreement will sit within wider societal norms and in this way, it is the common concept copper that we are disagreeing about. Brandom says (1994:607),

> The representational dimension of conceptual contents – the sorts of correctness of concept application that answers to how things are with the things represented and that contrasts in principle with the sort of correctness that answers only to how things are taken to be by some individual or whole community – can be understood in terms of the inferential articulation that defines these contents.

Brandom's account of conceptual content stretches to the physical world beyond individual inferential dispositions, or those held by a particular community. Just as I am not entitled to ignore the relevant norms, so our norms ought not to flout the inferential incompatibilities and consequences of the physical world. As individuals and as a society, we get a grip on how things are through the ongoing articulation of our sensitivity and responsiveness to inferential relations, that is, to the rules governing when and to what extent a concept has been applied correctly.

In my deployment of a concept, I have subjected myself to assessment according to social norms or regulations. These norms are the means by which we 'mediate and organise our

experience' (Derry 2019:10). As Derry explains (2019:10), 'The norms do not describe what we do; rather they function prescriptively in guiding what we *ought* to do and thus they are open to assent or dissent and to interpretation.' When people understand each other, it is a matter of them knowing what they have each committed themselves to in saying or doing something and what entitlement each other has to those commitments. Brandom (Williams, 2013) says,

> What philosophers need to do, and have been doing since Socrates, is making explicit those inferences that are implicit in the concepts that we use.  Socrates worried about the concept of piety and its consequences of application, since the converse of piety is blasphemy.  If you are concerned about piety, what inferences are you then committed to?  When they're made explicit, do you really want to endorse them?  Somebody who's worrying about inference is going to look at the concept Boche and say, "Well, the inference is from German nationality to barbarity and cruelty, but what about Goethe and Bach?" Having made that inference explicit, now you're in a position to be critical about it…. We can say and ask for reasons for or against something, to make explicit the inferential norms that are implicit in the concepts that we're reasoning with and that shape our thought…
>
> The idea was, if you can bring it out into the open as something we can discuss and give and ask for reasons for, then these implicit inferences that are curled up in our concepts don't have power over us anymore.  They've come into the light of day where we have the power of reasoning about them. (Williams 2013:380)[52]

These inferential relationships are said to be largely implicit and difficult to make explicit. "Explicitation, thus, is a process of coming into consciousness of the implications of assertions that one has endorsed or that others have endorsed." (Marshall 2013:8). Brandom gives an analogy to help convey how this norm governed activity might account for meaning-making.

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[52] There is a naivety in Brandom's confidence about the power to change our commitments through simply seeing our commitments that I would want to challenge, however, this is not a focus of this study.

## 4. Score-keeping and the game of giving and asking for reasons

The socially normative and the inferentially articulated dimensions of Brandom's account are brought together in Brandom's notion of *score-keeping* and the idea of *moves in a game of giving and asking for reasons*. Brandom (2000:162) takes the example of the simple sentence, 'It is red.' and says,

> The knower has the practical know how to situate that response in a network of inferential relations – to tell what follows from something being red..., what would be evidence for it, what would be incompatible with it, and so on. For the knower, taking something to be red...is making a move in the game of giving and asking for reasons – a move that can justify other moves, be justified by still other moves, and that closes off or precludes still other moves.

When speakers understand each other, it means that each knows or keeps track of what the other is committed and entitled to. We must make sense of the norms that are implicit in what people say. For Brandom, we must understand everything that is explicit as intelligible only against the background of the implicit normativity. Brandom uses the metaphor of score-keeping to describe the implicit practice by which we constitute meaning and keep track of each other's commitments and entitlements. Discursive practice is a performance that licences and obligates you and other people to expect and to produce reasons on pain of not being counted as entitled. Drawing upon Sellars (1997), Brandom sees humans as beings who engage in practices of giving and asking for reasons. Discursive practice is a practical ability to track what someone committed themselves to when they said what they said, and a tracking of why that matters.[53]

Brandom wants us to give up the Lockean model of communication – I have an idea in my mind and I utter it and if it produces the same idea in your mind then we have communicated. Instead, we track from our own and each other's collateral beliefs to our own and each other's commitments.[54] Brandom does not consider communication, or being understood by one

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[53] Brandom describes commitments, endorsements and entitlements as being attributed, acknowledged and undertaken.
[54] 'When we communicate, we do not convey some jointly possessed content. Instead, we map inferential repertoires onto each other and in this sense we cooperate to bring forth the referential dimension of content and objective inferential norms' (Prien, 2010:456).

another, as simply a task of coming to share opinions, but rather, discursive practice (that is, one involving the application of concepts) is a matter of navigating rationally between speakers' different commitments and entitlements. Differences in implicit inferential relations arise for multiple reasons, for example, individuals have different interests and life experiences, that is, different information and trajectories through life. Through the process of speaking, what we are committed and entitled to changes.

Brandom explains that he has used the notion of conceptual content and meaning as an expository ladder to climb up and then discard in favour of a picture of how we navigate between our different discursive practices using our commitment to their being a common norm as a tool in finding our way between those practices. Introducing a nuanced philosophical theory without distancing the issues from the discourse of everyday classroom concerns is challenging. I conclude with the example of a brief exchange between me and my seven-year-old niece as we neared the end of the summer holidays. As we walked along a neighbourhood street, my niece pointed to an unknown woman getting out of a car and said, 'She's a teacher'. Puzzled, I asked her why she thought that woman was a teacher and she said, 'Because she is wearing that teacher thing around her neck.' She was referring to a lanyard. Curious, I pointed to a nearby dog and asked, 'If that dog were wearing that sort of thing around its neck would that make him a teacher?' Not bothering to hide her contempt, my niece stood firm, 'Of course not, it's a dog not a teacher.' and, seemingly unshaken in her belief that lanyards reliably distinguish teachers, but only amongst humans, that was the end of the brief exchange.[55]

In that moment we catch a glimpse of the young learner implicitly ruling in and out a myriad of conditions and consequences. She seems at once both immersed in yet oblivious to the implicit 'if...then' relations governing those things she takes to be compatible and incompatible, consequential or not, possible and impossible, necessary or not. This does not appear to be a conscious, deliberate, concentrated, and effortful problem-solving on her part but more akin to a reason-imbued responsiveness to the world. On some level, which does not typically surface as an explicit formulation or articulation, my niece's concepts are

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[55] Had I probed further it seems likely that implicit decisions about the gender, age and apparel of the stranger contributed to my niece's concept use.

becoming ever more contentful as she participates in discursive practices that enable her to understand those things that one is entitled to think and say and those one is not. This reason-imbued responsiveness is an essential, though undoubtedly not sufficient aspect of her meaning-making and concept formation.[56]

## Conclusion

The example of my niece's conceptual content illustrates a helpful analogy that I will use in Chapter 5, a *two-ply* model of conceptual content:

(i) the explicit utterances that one person makes, and another person takes, such as, 'She is a teacher.'

(ii) the implicit responsiveness to inferential relations that gives that utterance meaning, for example, my niece's commitment to how only teachers wear lanyards

Brandom uses different analogies such as subterranean and ground-level when conveying the role of implicit inferential relations in constituting the meaning of explicit utterances. Any analogy is always inherently limited; however, I use the analogy of Inferentialism as a *two-ply* account of meaning to simplify discussion in Chapter 5. I use the term *under-ply* to convey the typically unspoken inferential responsiveness that regulates but also makes possible the more familiar *top-ply* of explicit utterances to refer to Brandom's account of how words and concepts are meaningful. For example, the explicit utterance (*top-ply*) 'She is a teacher.' was meaningful to me and my niece in so far as we situated that claim within a host of inferential relations (*under-ply*); for my niece, the implicit inference that if a person is wearing a lanyard then they are a teacher, for me, that a person wearing a lanyard does not identify them as a teacher.

It is not that my seven-year-old niece does not know what a teacher is. I have no reason to doubt that her excitement at the prospect of seeing her teacher once term begins was well-informed. It is that the contentful reasoning of her concept 'teacher' is not quite the label of

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[56] This is a very basic point, for example, the learner's meaning-making and concept formation is also influenced by the world available to her and her capacity to distinguish tastes, sights, sounds, and so on. I have included it to mitigate against the notion that an Inferentialist perspective reduces a rich engagement with a complex world to a matter of reasoning.

word to phenomena which it appears to be for more proficient concept-users. My niece's explicit utterance is not *as* abundantly stocked with appropriate implicit inferential relations as it needs to be in this instance. She needs many more inferentially articulated encounters with lanyards and teachers and other occupations for her representation of *teacher* to grow and for other unhelpful preconceptions to be revealed. If conceptual content is the sort of activity that Brandom claims it is, then there are real dangers of allowing the explicit (*top-ply*) to mask the implicit (*under-ply*). As we shall see in Chapter 5, of importance to educationalists is the way the occurrence of common representations does not guarantee the presence of the implicit inferential relations which would count as the knowledge to be learnt. It is not that the representation is some mere shell, devoid of its stuffing and in need of filling with something other. Representation is only possible through sensitivity to implicit inferential relations, it does not precede it. For an utterance to carry *any* meaning it is already imbued with responsiveness to implicit inferential relations. A key point to be explored in Chapter 5 is that variation exists not in the presence or absence of responsiveness to inferential relations, for responsiveness to inferential relations is always present, but in the qualities of that responsiveness, whether those commitments are adequate to the conceptual work at hand. In the examples considered, my niece's conception of teacher, the implicit inferential commitments were not adequate. In Chapter 5 I explore how, it is not that the learner in the classroom does not understand the meaning of the words in the mark scheme or success criteria or writing frame, or the explicit utterance (for example, 'She is a teacher.'), it is that the meaning is too thinly populated by  responsiveness to inferential relations in response to the world in which the relevant concepts pertain. Brandom provides a very helpful language for helping us get to grips with this because he unpacks what is involved in correct application. Brandom gives us a fine-grained resources with which we can distinguish two students who get the correct answer but one who seems to understand it and one who does not. We do not have these kinds of resources for making these kinds of discriminations if we rely on Representationalist paradigm. In the following chapter I explore how educationalists' discussion of classroom practice can be enhanced by understanding these divergent accounts.

# Chapter 5 Implications for history education drawn from Inferentialism

In Chapter 4 I examined how our utterances are meaningful through our responsivity to what we take to be relations pertaining in the world. Commenting on a passing stranger, my niece and I initially shared the explicit utterance, 'She is a teacher', but it soon became apparent that I did not share my niece's meaning because we were conjuring different relations between lanyard wearing and occupations. Thus, by its very nature, utterances do not simply convey meaning but obscure as well as reveal important differences in meaning. The anecdote and insight are hardly novel, but the mechanism by which we explain the commonplace experience is key. For the purposes of discussion in education, I referred to Inferentialism as offering a *two-ply* account of meaning whereby we can talk about the explicit words or representations deployed (*top-ply)* and about their meaning as constituted by our responsiveness to implicit inferential relations *(under-ply)*. *Top-ply* refers to the conventions commonly used to stand for, or count as, something else. For example, the word cat can be used to mean a certain kind of small furry animal. In history education, *top-ply* typically involves the squeaks and squiggles of utterances spoken or written about the past and what others have thought about the past. These shapes and sounds are conceptually meaningful by virtue of our social activities making it so. Thus, by *under-ply* I have in mind the socially normative, inferentially articulated activity by which our *top-ply* means what it means.[57]

In Chapter 4 I discussed meaning making, including the disparity that can occur between words spoken or read and meaning made, using commonplace examples. I now discuss the importance of an inferential *two-ply* account of meaning in history teaching. This chapter develops in three parts: first, the act of *discerning* and *supporting* pupils' concept formation in a single student teacher lesson is discussed in detail using the *conceptual how* ideas developed in Chapter 4. In section 2, I explore how Inferentialism can inform our knowledge theorisation as educators and show how easily knowledge characterisations can become distorted when we distinguish knowledge-types but without a sufficient theorisation of the *conceptual how* of Chapter 4. Finally, using sections 1 and 2, I return to classroom implications of teachers' knowledge theorisation, as discussed in Chapters 2 and 3, to pay particular

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[57] There are other accounts of meaning, however, I am using an Inferentialist-informed account.

attention to the ways in which Chapter 4's *inferential conceptual how* offers educationalists a new vocabulary to talk about how teachers *support* pupils' concept formation.

## 1. What can a *conceptual how* perspective reveal about teaching decisions: *discerning* and *supporting* concept formation in Sarah's lesson

While we can all spot and respond to discrepancies in meaning-making in everyday examples such as my niece's inappropriate inferential responsivity between lanyard wearers and teachers (Chapter 4), it takes a particular level of expertise to appreciate the difference in weaker and stronger *under-ply* implicit within historical assertions, and further expertise to be able to *support* pupil concept formation within history. In this section I exemplify what it is for history teachers to be sensitive to the implicit inferential relations (the *under-ply*) which constitute the meaning of the explicit representations (*top-ply*) in the utterances used. Using the following example of Sarah's lesson, we can think of teacher expertise as entailing three sensitivities in relation to knowledge theorisation. Teacher expertise involves sensitivity to *discerning* pupils' existing responsiveness to implicit inferential relations (understanding where pupils are in their understanding); sensitivity to the inferential relations considered desirable or needed in the knowledge to be developed by pupils (where we want to go in their understanding); and sensitivity to the possible trajectories of travel between pupils' existing and desired responsivity, that is, understanding how to *support* pupil concept formation (how to get there).

### *Discerning* concept formation in teacher planning

The following description of a student teacher's lesson illustrates the importance of teacher *discernment* of implicit inferential relations. The following lesson segments are drawn from data collected through the course of my Institutional Focused Study (McCrory 2015b). This was an empirical investigation into the instructional design of novice and expert teachers which met the ethical requirements for data collection as part of my EdD (McCrory 2015b).

A student teacher, Sarah, taught a lesson to Year 7 pupils (11-12-year olds) on the causes of the Peasants' Revolt, a grass roots medieval uprising occurring in the south of England in the late 14th century purportedly led by the peasant, Wat Tyler. I observed the lesson, and before

and after the lesson Sarah and I discussed the intended and achieved learning in relation to Sarah's planning and intentions. Research-based models mapping progress in pupils' historical understanding suggest that pupils can overdetermine and over-personalise the causes of events in history and so miss the ways in which the context both constrains and enables human action (Appendix 3). In pre-lesson discussion, Sarah explained that she wanted her pupils to understand how the Peasants' Revolt was not simply caused by peasants' immediate grievances in the handful of years leading up to the revolt, but its roots stretched back decades earlier to the Black Death. She describes her objectives during our pre-lesson discussion,

> So I want them (pupils) to be … looking at the revolt and linking it back to the Black Death, so seeing how peasants at that particular time felt that they were able to revolt. Rather than focusing on Wat Tyler or the causation of what led to that event, I want them to be considering the wider picture of peasants' situations before the plague and why particularly now they feel that it's necessary to revolt.

Sarah had prepared a handout, an information sheet setting out four contemporary sources related to the circumstances leading up to the revolt. Pupils, working independently, had to write answers to three questions using this information sheet. I discuss the first two of Sarah's three questions to illustrate how Inferentialism can inform classroom practice.

The first lesson objective recorded on Sarah's lesson plan read: 'Describe the reasons why the peasants revolted'. This corresponded to the first question posed to pupils: 'What decisions led to the peasants thinking they had had enough?'. Sarah wanted her pupils to scour the sources and find 'decisions' made by others which indicated peasant grievances prior to the revolt.[58] In answering this first question, pupils located and directly copied phrases from individual sources such as, *Peasants were not permitted to ask for better conditions* and *The poll taxes were levied*. Pupils had little difficulty lifting what Sarah described as 'provocations' directly from the sources which were littered with fully formed examples of peasant grievance.

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[58] Comments in quotation marks are Sarah's words.

The second lesson objective recorded on the lesson plan read: 'Explain why the peasants thought they would be successful'. This corresponded to the second question posed to pupils: 'Why did the peasants think they could get more money for their work?'. Having already asked pupils to identify what was 'provoking' the peasants, that is, what about their circumstances was upsetting them, Sarah now wanted something different, something more than identifying peasant motivations. Sarah wanted pupils to think about how the medieval peasants might be estimating their chances of getting what they wanted. During the pre-lesson discussion of the second objective and corresponding worksheet question, Sarah relayed how she did not want pupils to explain why peasants desired better wages but why they thought they could get them. The implicit inferential relations in Sarah's second question involved the interplay of peasant circumstances and thought, including how context constrains as well as enables peasant options. In the second question, Sarah intended pupils to explain why peasants had reason to believe they would be successful. Sarah intended Question 2 to relate to how emboldened the peasants felt. Sarah commented,

> So that is really drawing out that thinking of the fact that they have been successful in gaining more money previously, em, that that is quite a significant change.

First, if I analyse Sarah's two questions from a subject (history) perspective, Sarah is aware of what would count as more sophisticated ways of working with sources and of explaining why things happen in history. The sophistication in Sarah's thinking about history and what would count as a better understanding of history is impressive and is derived from existing knowledge-type theorisation. Question 2 requires students to see causation *and* handle sources differently from question 1. For example, to answer question 2 in contrast to question 1, pupils needed:

- *Causal* understanding: question 1 could be answered by equating explanation to the identification of peoples' immediate justifications or motivations for action, however, question 2 required pupils to propose interplay between circumstances peculiar to the post-Black Death situation and peasants' reasoning.

- *Evidential* understanding: question 1 could be answered by locating a single phrase in the sources, *the answer* to the question, and repeating direct source-writer testimony,

however, question 2 required pupils to cross-reference and contextualise sources to generate historical inference from sources used in combination.[59]

Second, if I analyse Sarah's two questions with a view to the nature of learning and pedagogical/curricular considerations, Sarah has crafted an opportunity for pupils to encounter both the dynamics of 14th century life and the challenge of creating their own causal arguments using traces left behind from the past. In her choice of lesson *content*, Sarah had made it possible for pupils to answer the questions using what they already knew from previous lessons and the sources. Sarah's content choices are sound. For example, there was no mismatch between what Sarah was asking and the information pupils were provided and expected to use to formulate their answers. It *is* possible to mount different arguments in answer to the questions posed by combining prior knowledge and the four sources provided. For example, from the sources provided and prior knowledge it would be possible to argue that if peasants had already received something once, an increase in wages directly after the Black Death, they may think they are more likely to get better wages again because the precedent is set. Sarah has also crafted the content such that it would also be possible to argue that the peasants could imagine they were more likely to get better wages because the dynamics from which the initial wage increase originated had not changed, barons still needed labour for food. For a student teacher to be able to make it possible in principle for pupils to be able to generate such arguments, given the content and activity that Sarah designed, is a significant achievement in lesson planning.

Third, if I analyse Sarah's two questions by attending to the *conceptual how* of meaning making, I have a way of talking about more of what was going on in the lesson. The Inferentialist informed point is that curriculum aspirations must entail grappling with the question of what it means to understand these things, and not just to ask subject and pedagogical questions such as what things one wants pupils to understand (the history perspective of what is worth teaching), and how these things can be taught (the nature of teaching and learning perspective of what content-activity pairings to sequence). The analysis not available to Sarah as she thought about her teaching comes into view with an inferential

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[59] By attending to the required implicit inferential relations in the knowledge to be learned, teachers could ascertain the complexity of the challenge they have set for the pupils in their class.

*two-ply* account of meaning. Pupils understood something of the lesson's *top-ply* utterances, just as my niece was not making meaningless noises when she said, 'She is a teacher', but their *under-ply* was not as meaningful as it needed to be. When answering Question 2 about why the peasants thought they could get more money, Sarah's pupils located and recorded phrases such as, *Peasants are working so much harder since the Black Death*, and *There is no one else to do the work*. These phrases *could* reveal understanding human estimation of chances given circumstances. For example, for Sarah and I, the text phrase, '*There was no one else to do the work.'* was understood as a sort of bargaining chip in a system of relations linking circumstances to motivations to peasant mindsets. For the pupils I spoke to, however, operating with an eleven-year old's experiences of the world, the text, '*There was no one else to do the work.'* was a grievance that no one was lending a hand. Similar to the ski instructor who, as a young boy, put the wine in the stream (Chapter4), the difference in meaning lay hidden beneath *top-ply* utterances that appeared identical. Thus, when I asked individual pupils why they located and recorded these phrases, they explained that they were examples of the unreasonableness peasants had suffered at the hands of other's and the reasons peasants deserved better. They did not offer these phrases as indicative of their understanding of human estimation of chances given particular circumstances. Pupils did not understand that the second question was asking them for evidence of peasants' changing thinking patterns, that is, changes in peasant mentality born from an underlying change in medieval circumstances such as labour shortages arising from the Black Death. In other words, pupils were answering the second question (Why did the peasants think their grievances would be resolved?) as they had answered the first (What were peasants aggrieved about?). In answering Question 2, pupils continued to look for motivations or grievances already named in the text, just as they had done in answer to Question 1. These pupils did not realise that the second question meant and required something different.

A teacher, taking the phrases the pupils offered at face value, that is, heeding only the *top-ply* of the words given as if these words were unproblematically meaningful, could have imagined that these pupils were on the right track. A sensitivity to the *under-ply* of the phrases, however, enabled me to *discern* a short fall in pupil understanding that is not readily available from a straight *top-ply* reading of their answers. Just as the word 'teacher' meant something similar but also something different to my niece and I (Chapter 4), so the pupils

shared some of what Sarah and I understood by the text used in this lesson, but Sarah and I also understood something quite different to these pupils.

It was not that their reading of the *top-ply* was without meaning, pupils could engage with something of what was being said. It was that their *under-ply* was not appropriate to the case in hand. The point here is that the pupils understood the meaning of the words in the question and the meaning of the words they offered in answer to the question, but their meaning was not Sarah's or my meaning, not just because they were children misunderstanding these phrases, but because of the kind of thing meaning is. The Inferentialist contribution here is in the effort to explain the mechanisms and processes giving rise to misunderstanding or limited understanding. Pupils were not missing a definition of these words, which must give the educationalist pause for thought when considering the effectiveness of what can be achieved by simply providing a definition. It is not that their understanding of the words' meaning was wrong. Through Inferentialism we can say they were missing a richness of responsivity to the implicit inferential relations in play in this scenario. The world external to us, the medieval world, in which the pertinent relations Sarah hoped her pupils *would* be responsive to, *was* brought before pupils and made (nominally) available in the lesson content and activity choice, but was nevertheless not (actually) available to *these* pupils.[60] These pupils were not able to respond to the relations in the world which were potentially available, as expressed in the *top-ply* utterances in the text Sarah provided, because *these* pupils were not yet sufficiently familiar with the world in which these relations reside. In a very real sense, these pupils *knew* the words Sarah used, but insufficiently, that is, the connections that pertained for these pupils were not the connections in the world that these words relied upon if they were to have Sarah's or my meaning. The words in the text did not bring to mind for these pupils the connections they brough to mind for Sarah and me just as the first 'Three mountains task' (Chapter 4) did not bring to mind for the children the relations that became available in the reworking of the task which brought pertinent relations into closer relief for the children. It is the fine-grained *conceptual how* explaining how it could be that these words lacked sufficient meaning that matters to educators, not simply *that* they did. How do we

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[60] It is possible that in a different class some pupils would have responded to more appropriate inferential relations. It is possible that some pupils with whom I did not interact did understand the pertinent inferential relations.

explain why? From an Inferential perspective, these pupils did not conjure the world Sarah and I responded to, these words remained attached to the world these pupils *had* encountered and understood. These pupils were responsive to a smaller, less complex world, and this lesson did not bring a new world into view; they remained less responsive than they needed to be. The conditions Sarah provided had not been sufficient to bring about the responsivity required. For these pupils, caught within the limits of their world, these words had insufficient purchase, or no world to latch onto, the did not commit or entitle pupils to what they committed and entitled Sarah and I to think and say.

Sarah was so familiar with the implicit relations in the world that give adequate meaning to these utterances that she could not anticipate the shortfall that arose. Sarah imagined that her *under-ply* matched her pupils, that is, she read her meaning into their words when they lifted the relevant text by chance, replacing their *under-ply* with hers. The pupils dutifully 'completed' their answers to the worksheet but without the appropriate *under-ply*. It was not until the lesson was nearing an end, and the teaching opportunity passed, that Sarah began to realise that something was wrong but, as reported in post-lesson discussion, she was not sure what precisely was wrong or why it had happened. She was baffled as to why pupils did not understand what they heard or read when she imagined the ideas had been stated clearly and explained fully. Sarah had planned for historical understanding in line with existing theorisation, but with very poor returns, an exasperating experience for student teachers, and one that also restricts their further learning about lesson planning, enactment, and evaluation. Sarah's pupils had seemed to understand the words. The discrepancy between necessary and existing meaning was not readily apparent or decipherable. Without the language to discuss the *conceptual how*, Sarah was unprepared for the seeming paradox that pupils might still not understand the teacher's words when they seem to understand the teacher's words.

The hands-on capacity to recognise and work with such differences in understanding is precisely what accomplished teachers do well as they plan and teach, however, such teacher expertise can take years to develop and can remain tacit. The inferential *conceptual how* analysis offers educationalists the chance to understand variation in meaning and its implications for teaching and learning in a fine-grained way. An Inferentialist *two-ply* account of meaning could help teachers to appreciate how and why pupils can seem to understand

the meaning of the words in the question or sentence but not the *necessary* meaning. It can also help explain the limitations of teaching that relies on giving pupils further *top-ply* utterances without adequate concern for the *under-ply* of conceptual meaning-making.

Teachers may be hard pressed to see what others might be missing in the words they are using, especially if the learners appear to understand the words and are themselves unaware of the short falls in their meaning-making, and especially if teacher's words are already densely and securely populated with rich implicit inferential relations. It is difficult to imagine how little words might mean to someone else, despite appearing to make sense to them. One is certainly less equipped to handle such challenges without a *two-ply* and Inferential theorisation of how concepts are meaningful. Sarah could identify better history from the existing knowledge-types theorisation (causal and evidential reasoning about the Peasants' Revolt). She could set out relevant sources and questions with the potential to offer up the desired historical learning under certain circumstances. Without the inferential *conceptual how*, she could not adequately consider what knowing that better history entails - responsivity to implicit inferential relations encountered in the world.

### Noting how Inferentialism offers new ground.

Writing this, I am acutely aware of the reader's well-worn responsivity to the idea of pupil variation in meaning. In writing, I face the challenge of having to use familiar words to try to break through with the possibility of new connections. Sarah's lesson continues below with a discussion of the idea of *discerning* in order to *support* concept formation not just in the planning decisions Sarah made (discussed above) but also in the options available to her during enactment (discussed below), however, a brief detour enables me to draw out how the *inferential conceptual how* is adding to our existing thinking. The inferential *conceptual how* is not offering the well-worn insight that meaning is constructed and so teachers would do well to check for pupil understanding and provide opportunities for pupils to construct meaning. Furthermore, there is little difficulty in challenging the assumption that meaning somehow resides inherently or straightforwardly in words. We know that a speaker's meaning also relies not just on word choice but on context, gesture, use of voice. For example, we are familiar with the stressed syllable carrying the point the speaker wishes to make, in the following cases, the italics indicates emphasis,

- *John* had not stolen that money. (… Someone else had.)
- John had not *stolen* that money. (… He acquired the money by some other means.)
- John had not stolen *that* money. (… He had stolen some other money.)
- John had not stolen that *money*. (… He has stolen something else.)

Yes, there is a simple and familiar point here - meaning is not inherent in words but rather resides in complex social practices, social practices that ought to feature in educationalists' theorisation. But a theory of the inferential *conceptual how* takes us beyond simply noticing this familiar point. The idea beyond noticing *that* we construct meaning is to examine *how* we account for words' meaning and lack of meaning in those social practices, and especially in those exchanges in which words seem to be understood but necessary meaning is missing. With differing *responsiveness to implicit inferential relations,* Inferentialism offers an account of *how* the same explicit utterance (same context, same gesture, same use of voice) can be constituted, and with that fine-grained *how* explaining variation in learner meaning making, comes the possibility of new analysis of teaching responses in planning, enactment and evaluation.

In the details of the inferential *conceptual how* we not only have theorisation that takes us beyond the idea of knowledge as constructed or socially constructed, or the idea that what pupils can see depends on what they already see, or that a key teaching strategy is to check for pupil understanding. We have further details about what is happening that makes these considerations important, and we have detailed analysis informing fine-grained decisions about how to act on such considerations.

Part of the inferential *conceptual how* contribution comes in seeing that using spoken or written utterances to support knowledge formation, or to convey what you want someone to know, or to check for understanding, and so on, only works under certain circumstances, circumstances that we can analyse. Educationalists can use an *inferential conceptual how* to understand these circumstances and to discuss variation in meaning based on what it is to mean something conceptually. As discussed later, we *can* use words to create the necessary circumstances, but our use of words can also let us down in predictable and explicable ways. New knowledge theorisation and classroom implications are revealed through accounting for what it is to construct meaning.

Before moving into section 2 to examine the understanding that an implicit inferential *conceptual how* can bring to the existing knowledge theorisation, I return to Sarah's lesson to begin thinking about how pupils can be *supported* to get from where they are conceptually to where teachers hope they will be.

Discerning in order to support pupil concept formation in enactment.

Sarah's second question illustrates how the language we use relies on an *under-ply* of responsivity to implicit inferential relations thought to pertain between phenomena in the world, and how teachers need to think carefully about what is entailed in creating appropriate opportunities for pupil responsivity to the implicit relations thought to pertain in the world. In Sarah's post-lesson characterisation of what had happened she described pupils as 'sleepwalking through the question and answer'. How could her pupils have been helped to grapple with the ways peasants were reimagining their chances of getting their desires? In other words, how could they have been helped to become responsive to the ways in which agency and circumstance intertwined to create causal relationships that help explain the subsequent revolt?

Returning to Sarah's lesson I set out how teachers *support* pupils in developing new understanding through leveraging pupils' existing understanding. Such support involves considering the historical ideas being taught in order to work out what relations are in play in the history *and* considering what words we can use to bring responsivity to these *implicit* relations within reach for *these* learners *while* preserving the experience of pupils responding to *implicit* relations thought to pertain in the world.[61] Sarah's pupils' attention could have been re-directed from peasant motivations to peasants' estimations (of how their circumstances were potentially curtailing and promoting the likelihood of securing their desires) by rephrasing the question or by offering a parallel case. Both are familiar teaching practices; however, the contribution here is to the theorisation behind the teacher's decision-making using a consideration of the *conceptual how*.

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[61] I do not defend the claim asserting the importance of preserving the implicit nature of the relations at this stage but return to it in later sections.

Firstly, Sarah could have re-phrased the historical ideas being taught (in this case the meaning of question 2) to draw out the pertinent relations. Pupils were not responding to the implicit relations pertaining to peasants' appraisal of their medieval circumstance and agency because pupils were responding to the implicit relations pertaining to peasants' motivations. Examining the pertinent relations which pertain in the history, we see that in Question 2 Sarah needed to help point pupils towards thinking about what makes events more or less likely and not just what might motivate someone to act. For example, rather than in the first instance asking pupils, 'Why did the peasants think they could get more money for their work?' Sarah could have asked pupils to explain *what chance* (in the sense of a high or low probability rating) *they* would give peasants of getting their way and why. The phrasing, 'Why did the peasants think they could get more money for their work?' relies on the necessary responsiveness already being in place, as it was for Sarah and I. If it is not in place, the question is open to a reading which could rely on the more naïve relations of motivation alone. The 'what chance' phrasing takes pupils attention closer to the pertinent relations in the history while reducing the likelihood of pupils being satisfied with the more naïve reading centring on relations involved in 'reason to desire' something. This is exactly what accomplished teachers do tacitly having built up experience of what pupils are likely to think compared to what the history requires them to be able to think or compared to what the words used could mean.

One reason the rephrasing helps is because, like Donaldson and Hughes (1987) reworking of Piaget's 'Three Mountain Task' described in Chapter 4, it sharpens the learner's focus on the relevant *implicit* inferential relations rather than allowing the pupil to remain unresponsive to the desired inferences. Yet simultaneously, while bringing more of the relevant implicit inferential relations closer for these pupils, that is, within range of their relevant existing responsivity to the world, the rephrasing does so without ceasing to rely upon *implicit* inferential relations, that is, without offering a description of the relations that renders them explicit. What counts as 'spelling something out', that is, moving our description from relations in their implicit to explicit rendering, is in large part relative to the learner, to what they currently understand. The 'what chance' re-phrasing requires pupils to think about other implicit relations than those these pupils actually responded to when answering question 1 which asked about the reasons why the peasants revolted. The implicit relations in Sarah's

question 1 involved pupils' grasp of how people do things because of aversion or desire. Pupil attention in this case needed to shift to the issue of peoples' perceptions of what influences and constrains their agency as it changes across time and circumstance. Instead of laying the groundwork these pupils needed for the shift into the implicit relations in question 2, Sarah was inadvertently allowing pupils to continue to simply attempt to report examples of why peasants did what they did, devoid of a consideration of how peasants would have weighed the circumstances capable of promoting and thwarting medieval desires. Sarah may have missed this need because of trusting in the power of the words in the question, that is, trusting in the *top-ply* of utterances. Sarah had no way of seeing the seeming paradox of how pupils could understand the words in the question but not understand the words in the question. She was not prepared for the way pupils would be drawn to understanding her question and sources through responsivity to a different, here, less appropriate, set of implicit inferential relations.

Secondly, if necessary, Sarah could also have employed a parallel example. If pupils struggled to generate a range of ideas in response to the re-worded question about what chances they would give the peasants of achieving their demands, because they were still inadequately responsive to the *top-ply* utterance despite understanding something of the words' meaning, Sarah could have asked pupils how they estimate their own every-day expectations of success in their own lives, perhaps inviting pupils to recount an occasion when they wanted a teacher or parent to grant them permission for something they desired. Experienced teachers regularly demonstrate their tacit grasp of how to move from the familiar to the strange in history. When seeking to bring new ideas into view, teachers frequently capitalise on sufficiently similar relations that pupils are likely to be responsive to already. Pupils could have shared occasions when they felt the effects of their own track-record on their estimations of pending success or failure. Pupils may be able to articulate their grasp of competing agendas and curtailing circumstances in these everyday examples.

The point is not to stay at the level of pupils' existing inferential relations, or to waste precious lesson time on non-history examples, but to create parallels or springboards from which pupils are more likely to transition into responding to the relevant implicit inferential relations in the new learning. In other words, the apparent digression exists to bring question 2 into

view and to make available a more complex reading of the sources. Teachers may be able to use explicit utterances for which pupils are responsive, cases with *parallel* implicit inferential relations, to induce *emergent* responsiveness to the desired implicit inferential relations that pupils are not yet responsive to in their original reading of the question and sources. Teachers commonly leverage the educative power of moving from the familiar to the strange instinctively as they teach, but Inferentialism allows us to theorise this practice as a facet of our understanding of what concepts are.[62] In this offer of a parallel case, as with the common teaching technique of rephrasing the question, it is the theorisation behind the teacher's decision-making that is furthered through a consideration of the *conceptual how*.

From the Inferentialist account of meaning discussed in the previous chapter, we can see how words can fall on fallow ground if speakers are not able to be responsive to the appropriate implicit inferential relations that pertain implicitly within utterances. Crucially, the pupil can respond to enough implicit inferential relations to seem to have some understanding of the utterance, but not enough to make sense of the teacher's meaning. This 'part-measure' of responsivity can hinder as well as help concept formation. Inferentialism suggests that the meaning wrapped up in words and statements is not conveyed by explicit utterances *if* responsivity to the inferential relations constituting the utterances are not already sufficiently in place. If the learner is not yet sufficiently responsive to the necessary implicit inferential relations pertaining in the world, our words are futile.

Classroom implications of a *two-ply conceptual how* include concern for the choice of words teachers use, as the vehicle by which the world is made available to pupils, and to the timing of the teaching utterances intended to make particular implicit relationships in the world more explicit to the learner. The realisation for the educationalist is that words do not carry meaning for the person who does not *already* understand enough of the appropriate meaning represented by the words. The claim is counter-intuitive because of how we continually experience words as seeming to convey meaning unproblematically. Our typical experience often runs from not understanding to understanding via someone explaining it using different words. We feel as though the knowledgeable speaker's words actually conveyed meaning, and in a sense they did, but the point is to look at *how* those words could be meaningful,

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[62] Many concepts in history do not immediately lend themselves to parallels in pupils' experiences, however, many do. This being so is both an aid and a curse.

under what conditions do they seem to carry or fail to carry meaning. It is for the teacher to then consider how to help create the necessary conditions under which their pupils can make appropriate conceptual meaning, that is, the conditions under which their pupils can become responsive to the incompatibilities and consequences of relations in the world, the possible and necessary relations, the responsivity that constitutes the appropriate commitments and entitlements (Chapter 4) facilitating new explicit claims (top-ply utterances) or more appropriately populated top-ply utterances.

The Inferentialist-informed point is that the understanding that seems to be triggered by the words in the speaker's explanation is successful in so far as it succeeds in activating the listener's responsiveness to the required implicit inferential relations, not, as with the Representationalist account of meaning, with how clearly the teacher can point to the thing in the world thought to be represented by the words in the utterances. No learner responsiveness to the implicit inferential relations taken to pertain in the world, no meaning to constitute the words offered in the explanation. It is the appropriateness of the learner's responsivity to the necessary implicit inferential relations that is a key consideration when thinking of teaching for concept formation. This is not to deny the power of words to bring about new understanding; it is through words that we are inducted into practising history. Rather, it is to pay attention to which words, when and why. It is to account for why sometimes words do not seem to have much power, or rather, have power for some pupils and not others. It is to point us towards thinking about what might be involved in influencing our processes of meaning-making, explored further below. It is also to account for how readily educationalists can miss the discrepancy in meaning when words are deployed. From Inferentialism, we can see how words become powerful markers or proxies that both help teachers determine pupils' understanding, that is, their responsiveness to implicit inferential relations in the world, and that help teachers introduce new aspects of the world to pupils with a view to changing their responsiveness. Of course, strategies, in which teachers imagine they are giving meaning by simply giving words that represent the world, do not always fall short, but my interest here is in assisting teachers like Sarah who had few ways to make sense of how or why her second question was not appropriately meaningful to her pupils despite using words pupils seemingly understood. Discussion above foreshadows the classroom implications explored in section 3 below, but that discussion will be clearer after a fuller

examination of how our understanding of the existing knowledge theorisation in history education (Chapter 2 and 3) is advanced through a consideration of the *conceptual how* (Chapter 4).

## 2. Knowledge theorisation in teaching: Re-examining the existing knowledge-types theorisation.

A consideration of the *conceptual how* sheds new light on the knowledge-type distinction. As discussed in Chapter 2 and 3, the knowledge-type distinction reminds us that something more is involved in historical knowledgeability than can be helpfully characterised as pupils simply learning facts about the past. Without the *conceptual how* perspective, however, existing theorisation can create an impression of a strong sense of separation between the knowledge-types, a separation which can be poorly understood. The somewhat opaque relation between knowledge-types in turn results in uncertainty about how to combine knowledge-types in teaching or develop pupils' understanding of both.

To summarise the knowledge-types discussion (Chapter 2), the existing theorisation weaves multiple markers when classifying knowledge-types. There is often an 'aboutness' marker whereby knowledge about the past is distinguished from knowledge about how we structure or relate events, places, people, states of affairs in the past to each other when answering historical questions. There also appears to be something of an 'attribute' marker in play, that is, whether knowledge is assumed to be *entity* or *act-like* in character. Existing theorisation moves between *second-order* or *disciplinary* knowledge, appearing in what I described as an *embedded* (act-like) and an *extracted* (entity-like) guise, often without explicitly problematising the shift for the reader. The status of knowledge, and whether knowledge is open or closed, that is, whether it is knowledge regarding things about which there could or could not be a fact of the matter, can also drawn into the knowledge-types discussion.

Whatever markers of distinction are used, having separated knowledge-types, the teacher then faces the predicament of what it means to combine knowledge types despite the nature of their relationship and consequent implications for teaching remaining insufficiently clear.

It is now possible to examine the knowledge-types distinction using the nature of conceptual knowledge from an Inferentialist perspective (Chapter 4).

In this section I explore how teachers' knowledge theorisation could be furthered by attending to an implicit inferential *conceptual how* without losing the potential benefits of an analytical distinction between knowledge-types. Over the course of section 2's discussion I explain two claims. Firstly, there is an *entity* and *act-like* guise to any and all concepts and a sense in which it is unhelpful to imagine a particular attribute ascribed to one and not another set of concepts. Secondly, from the *conceptual how* perspective, we can think of *one* phenomenon, conceptual knowledge, under two descriptions, not two phenomena in combination. In other words, there is a helpful sense in which inferential relations named in the history education community as *second-order* or *disciplinary* can be seen to constitute rather than simply compliment what is referred to as *first-order* or *substantive* knowledge.

## First claim: An entity and act-like guise to any and all concepts

From an Inferentialist-informed perspective we can now revisit what I called the 'attribute' understanding of knowledge-types, that is, the notion that *entity* and *act-like* attributes help distinguish the knowledge-types one from another rather than appreciating the *entity* and *act-like* guise of any and all concepts. I approach this challenge by first explaining why it might be difficult for history educators to conceive of *first-order* knowledge, not just *second-order* knowledge, as both *entity* and *act-like*.

History teachers are familiar with the way in which *second-order* or *disciplinary* knowledge is commonly understood as *act-like*, as existing along a spectrum of less to more appropriate meaning because an action can be performed more or less well or badly. For example, the statement 'The European Alliance system contributed to the outbreak of World War One' is a causal claim which at least entails a very basic conceptual understanding of cause, but the same statement could carry more or less responsiveness to implicit inferential relations. A pupil with a very naïve understanding of cause might imagine that statement simply entailed describing the alliance system in detail. From an Inferentialist perspective, they are responding to *some* of the relations appropriate to the concept of cause, such as the temporal

sequence in which causes are understood to come *before* that which is to be explained. But responsiveness to many of the implicit inferential relations which constitute a historian's concept of cause are missing. For example, a different pupil could be more responsive to the appropriate implicit inferential relations which constitute the concept of cause for historians. They might think that a description of the alliance system itself is not a claim of causal relationship between the alliance system and the outbreak of the war and instead seek to draw out the ways in which one led to the other, that is, how they are causally connected. This pupil would be operating with a more appropriate conception of cause. There is a quality to the act of responsiveness that many history teachers are familiar with when asking 'open' questions explicitly requiring historical reasoning; pupil responsivity differs in range, strength, nuance, and so on.[63] The history teacher is familiar with imagining the cognitive activity of relating, of responding to relationships taken to pertain in the world, as qualitative, as occurring along a spectrum of appropriateness. The history teacher seeks to develop pupils' conceptual understanding of causation, that is, how pupils imagine relations in world pertaining. The early theorists described in Chapter 2, for example, Peter Lee and Roz Ashby and colleagues, were mapping the understandings of inferential relations that pupils were responding to when encountering historical problems.

*First-order* or *substantive* knowledge is not typically theorised in existing literature as activity-like and occurring on spectrum of meaning. In existing discourse, we reason with our *first-order* knowledge, the knowledge that we either know or do not know. However, with an Inferentialist account of conceptual meaning, we are always potentially on our way to more appropriate conceptual understanding as our responsiveness to the implicit inferential relations expand and refine in use. We saw the concept of 'milk', of 'cat', of 'teacher', and so on, vary along a spectrum of meaning and moreover we saw an account of that variation, why and how it occurs, extending thinking beyond the idea *that* people mean different things by the same utterances to how they mean different things, what it is to mean different things.

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[63] See (McCrory 2015) for an example drawn from my classroom experience teaching history which illustrates a historical example of the Inferentialist idea of gradation of meaning along a spectrum given variation of responsiveness to implicit inferential relations despite similar explicit utterances.

If Chapter 4 proved interesting, the Inferentialist account may seem plausible, even appealing, to the history education community. But the extent to which educationalists do not actually think of all conceptual meaning as a type of responsiveness to clusters of more or less appropriate inferential relations becomes apparent if I phrase the same thought differently. It seems counter intuitive to say, 'John knew the Battle of Hastings occurred in 1066 expertly.' or that, 'Brian knew convincingly that Charles I was dead.' We do not use qualitative adverbs to characterise what we take to be propositional knowledge. We are accustomed to thinking of these assertions as being of the order of things known or not known, not as performances with qualities of knowing. But this is precisely the fine-grained account Brandom (2000) is inviting us to take over the Representationalist account of meaning (Chapter 4), in which our representations either stand for that which is represented by the word or concept, by simply standing for them, or they don't. Understood more fully, the Inferentialist account of meaning challenges a crude separation of conceptual knowledge into some knowledge that does and some knowledge that does not entail more or less appropriate historical reasoning, by which I mean responsiveness to implicit inferential relations. Under scrutiny, the idea that there is a quality, a gradation to the activity of knowing *first-order* or *substantive* knowledge goes against the grain of existing ways of thinking about knowledge.

The Inferentialist insight is that there is an important sense in which conceptual knowledge-types do not differ from each other by 'attribute', by *entity* or *act-like* attribute, by being constituted through different processes. From a *conceptual how* perspective, all concepts are meaningful along a spectrum of less to more appropriate meaning. Imagining a spectrum of meaning resulting from variation in responsiveness to implicit inferential relations is equally relevant to what history educationalists refer to as *first-order* or *substantive* knowledge. To characterise the knowledge-type distinction as involving a *non-act-like* versus an *act-like* attribute is flawed from the perspective of the *conceptual how*, compromising teacher decision making. In the following discussion I draw attention to how unaccustomed educationalists are to thinking of *all* conceptual knowledge as *two-ply*, both *entity* and *act-like*, and suggest why we might struggle to treat *all* conceptual knowledge as *two-ply*.

Why do qualitative adverbs characterising propositional knowledge (facts, *first-order* knowledge) sit so uncomfortably with us? Category conflation helps explain our intuitions.

For example, the battle *was* fought in 1066. Charles I *is* dead. It may be that because we take the referents as binary, as true or false rather than as open to qualitative interpretation, we mistakenly take the qualities of our meaning-making when uttering statements about such cases as binary too, and thus as differing from other types of knowledge which are thought to vary along a qualitative continuum.

Four distinctions help to clarify how it might be that *first-order* or *substantive* knowledge (propositional knowledge) need not be thought of as binary, as known or not known akin to the Representationalist 'standing for' account of meaning, and instead can be thought of as existing for individuals along a spectrum of meaning:

(i) The nature of what is being investigated within history, that is, the sort of phenomena under investigation: Certain phenomena in the past are of the sort that there *is* a fact of the matter. Charles I *was* executed, he did not die peacefully in his sleep; the Battle of Hastings *was* won by William, Harold Godwinson was not victorious; Germany *did* invade Belgium at the beginning of World War I, Belgium did not invade Germany. This class of phenomena can be distinguished from matters about which there is no fact of the matter. To take an aesthetic rather than historical example first, there is no fact of the matter to appeal to when claiming that Rembrandt is a better painter than Vermeer. That claim must be argued for, and that argument can be more or less successful. To claim that William won the Battle of Hastings through luck not leadership, or that Charles I's execution was treasonous is to claim something about the sort of things about which there is no fact of the matter. Instead, a case must be made for one's stance. These are the sort of phenomena about which different stances are logically and evidentially plausible; difference is not arising because some arguments are going against reason or established fact. Claims as to whether it was Charles' actions or his execution that was treasonous, whether luck or leadership was the most important reason why William won the Battle of Hastings, are said to address open and not closed-questions because there can be no fact of the matter regarding such phenomena. There are better or worse arguments and expressions.

(ii) The nature of the investigation or activity that is history: that all historical knowledge is constructed through argumentation based on reason and the appropriate handling of traces from the past. That Charles I was executed or that William won the Battle of Hastings may be closed matters of fact, but they nevertheless needed to be established through the disciplinary practice of history just as answers to open questions need to be established through the disciplinary practice of history.

(iii) The sort of activity explicitly called for when we ask for conceptual understanding to be put to use: Teachers set different activities in lessons, ones explicitly calling for reasoning, others calling for recall, but we need to notice when we are in the terrain of naming an explicit activity involving our conceptual understanding and when we are in the terrain of naming attributes of conceptual meaning-making.

(iv) The participatory act by which every individual constitutes conceptual meaning (and to use Inferentialist language from Chapter 4, the 'game' or 'score-keeping' by which we communicate discursively): what pupil 1, pupil 2, teacher 1 or teacher 2 means by the utterance that 'Charles I was executed' or that 'William won the Battle of Hastings' is closed in the sense that there is a fact of the matter (distinction 1 above), but is open in the sense that what we mean by it is constituted by responsiveness to implicit inferential relations which involve variations in scope and appropriateness from person to person. Representation constituted by responsiveness to implicit inferential relations opens even what might be termed propositional knowledge to a qualitative spectrum of meaning for individuals replacing the more common appraisal of such knowledge as simply being known/not-known. From the Inferentialist account, pupils need to respond to the appropriate relations that govern the correct use of these concepts. It is in this sense that the uncommon phrasing, 'John knew the Battle of Hastings occurred in 1066 expertly.' or that, 'Brian knew convincingly that Charles I was dead.' makes sense. I refer to this consideration of what it is for our concepts to be meaningful (the appropriateness of our responsiveness to the implicit inferential relations or *under-ply*) as arising from the *conceptual how* perspective which concerns itself with what concepts *are* not what they are *about* or to the use to which they are put.

What pupils' understand by the execution of Charles I or the battle winning of William or the alliance system contributing to the outbreak of World War I is important to the educationalist, not because they address either open or closed questions (a matter of fact or argument) in the sense of distinction 1 above, although this distinction matters too, but because they are open in the sense of distinction 4 above, that is, because of the nature of meaning as occurring along a spectrum of responsiveness to implicit inferential relations sitting beneath or constituting the meaning of the explicit utterance for the pupil (Chapter 4). To take an everyday example, whilst it is not a turn of phrase we would employ, there is credence to thinking that the interior designer knew that 'It is red.' *more expertly* than the toddler, just as there is a sense in which when I use the sentence, 'She is a teacher.' my meaning *is more appropriate* than that of my niece (Chapter 4). As we saw, a in Chapter 4, according to Brandom, the parrot uttering, 'It is red' does not know conceptually that it is red but offers a reliable differential response much as a smoke detector or automatic door sensor offers a reliable differential response to environmental stimuli because no implicit inferential relations are recognised in the reaction. The parrot, no more than the smoke or motion detector, is not committing itself to anything or taking on an accountability in its response. Whether Brandom is correct or not in ascribing humans alone an inferential responsiveness is not my concern here. The account of conceptual meaning as an implicit inferential response, and thus as variable in appropriateness from utterance to utterance, person to person, is my interest.

The Inferentialist point is that *all* conceptual knowledge is subject to variation along a spectrum of meaning-making because of what conceptual knowledge is. With an implicit inferential response constituting our squeaks and squiggles, it is also true that we employ those concepts (that implicit inferential responsivity) to respond to questions explicitly asking for recall or reasoning (as in distinction 3 above). Chapman's example of the historian claiming German cooperation given the number of Gestapo (Chapter 4) is an example of the way we make inferences with our concepts, but that is not quite the point at stake with an Inferentialist account of conceptual meaning. The Inferentialist point is to notice how we account for any concepts being available in utterances regardless of whether the utterances

take the shape of inferences or of statements of fact, regardless of whether we are responding to questions explicitly calling for recall or reasoning.

It is a mistake to assume that what it is to know conceptually somehow shares the same attributes that can characterise what we have conceptual knowledge about. Yes, a phenomenon about which there is a fact of the matter may well have a different epistemic status and be distinguishable from a phenomenon about which there is argument. Yes, an object in the world may well be different from a process in the world, ontologically, in the sense of what kind of a thing it is, for example, there is a serviceable distinction to be made between a birthday card and aging as different kinds of thing in the world. There are indeed many perfectly serviceable distinctions which we may use to group phenomena. But conceptual knowledge, any and all conceptual knowledge, referring to what it is to mean something by the words voicing those phenomena, involves a common core of activity, the act of responsivity to relations taken to pertain in the world. From an Inferentialist perspective, it is a mistake to distinguish history's knowledge-types by simply imagining that one of history's conceptual knowledge-types is *entity-like* while the other is *act-like* (or *entity* and *act-like*). If this is what we imply by the knowledge-type distinction, then the distinction breaks, and this distortion comes with classroom implications relevant to teaching and learning.

My first claim, setting out how an *entity* and *act-like* guise is relevant to any and all concepts, is not enough. If we feel somewhat persuaded by the *inferential conceptual how* and so reject the idea of two differently constituted knowledge-types but we simply imagine that one knowledge-type involves responsivity to implicit inferential relations while the other knowledge-type involves responsivity to a distinct set of implicit inferential relations, the Inferentialist *conceptual how* point is still missed. A consideration of an implicit inferential *conceptual how* takes us beyond simply claiming that *all* concepts have an *entity* and *act-like* guise. In explaining my second claim in this section discussing knowledge theorisation in history education, I begin reconsidering the existing idea that conceptual knowledge involves the integration of two *complementary* knowledge-types, and I return to the origins of the existing knowledge-type theorisation in history to explore the sense in which a singular phenomenon of conceptual understanding is being described in two ways.

## Second claim: One phenomenon under two descriptions

The claim explored here is that from the *conceptual how* perspective, that is, when we are considering what it is to mean something by our utterances, there is an important sense in which there are **not** two phenomena, two knowledge-types, *first-order* and *second-order* knowledge, but rather, we can see the sense in which there is one phenomenon, conceptual meaning-making, under two descriptions. The idea feels abstract and so I begin by exemplifying the sense in which we can think of the knowledge we have come to call *second-order* or *disciplinary* as constituting our conceptual meaning rather than as a distinct knowledge-type.

*Exemplifying a constituting role in the act of meaning-making for second-order or disciplinary knowledge*

The concepts of 'similarity and difference', and of 'cause and consequence' are taken as examples of *second-order* concepts in history education because they are thought to be about certain types of relationships between things, while 'Romans' and 'weapons' are taken as *first-order* concepts (in certain readings) because they are not about, or do not involve, the aforementioned relationships between things. But consider what kinds of implicit inferential relations are involved in seemingly *first-order* concepts. 'Romans' only makes sense as a term of comparison, a group of people different from the Greeks but similar to each other. 'Weapons' only makes sense as a term of tools with functions that rely on relations of opposition and cause – to inflict harm in order to achieve something. These so called *first-order* or *substantive* concepts are constituted by responsivity to implicit relations which would commonly be identified as *second-order* or *disciplinary*. It is simply wrong to imagine that the implicit inferential relations involved in what has come to be called history's *second-order* or *disciplinary* concepts are not the implicit inferential relations believed to be at work in what has come to be called *first-order* or *substantive* concepts.

From an Inferentialist perspective, what the history education community refers to as *second-order* or *disciplinary* concepts may simply *appear* missing in a concept like 'Romans' or 'weapons', 'kings' or 'marriage' but are actually constituting the concept implicitly and responsiveness to these implicit relations are simply being taken for granted. The argument

of this thesis is not, as it appears in the existing theorisation, that *first-order* knowledge involves *second-order* knowledge because of how facts come woven in stories, or are used to construct or furnish arguments, or because of how factual knowledge is produced by historians through reasoning, although all true, but here the additional contribution is that what we have come to call *first-order* knowledge involves *second-order* knowledge because of what conceptual knowledge *is*.

To take an example, 'The Romans conquered Britain' and 'The Romans had good weapons.' would commonly be characterised as *first-order* claims, but we can see how they nevertheless have ideas that would be called *second-order* within them. It may appear as if no *second-order* concepts are present because *second-order* concepts are not explicitly named or referred to, but if I were to say, 'The Romans conquered Britain' and 'The Romans had *bad* weapons.' you might notice the implicit causal relationship nestled within your sense of surprise. 'The Romans conquered Britain because they had *good* weapons.' may well be giving explicit representation to a meaning that was already present in the *under-ply* constituting the original two sentences. How bewildering then for a teacher struggling under the misapprehension that they are trying to teach one and then another actually distinct knowledge-type, or that there is a part of their curriculum which involves one knowledge-type which is actually distinct from another part of their curriculum which involves another.

It is possible to further exemplify the singular nature of knowledge from the *conceptual how* perspective using Sarah's lesson (described in section 1 above). The utterance, 'medieval peasants were harvest dependent' would typically be considered a fact about the past and so classified using the current knowledge-type distinction as being *first-order* knowledge. The utterance makes no explicit reference to cause, a concept typically classified as *second-order* or *disciplinary* knowledge. But the appropriateness of the inferential relations constituting the claim that 'medieval peasants were harvest dependent', that is, what this utterance means to a pupil, is the seemingly *second-order* notion of causal relationship, specifically the interrelationship of agent and circumstance.

The example from Sarah's lesson offers the same argument as that used above with the examples of 'Roman' and 'weapon'. Teaching for pupil understanding of what it means to be harvest dependent *could be* understood as teaching for the recognition of the implicit

inferential relations which constitute the seemingly *second-order* claim that 'in causal analysis, agency and context intertwine in complex ways'. Likewise, the claim that 'agency and context intertwine in complex ways' only makes sense to the extent that it is constituted by responsiveness to the implicit inferential relations that constitute the seemingly *first-order* or *substantive* claim that peasants were harvest dependent. From these concrete examples we can start to think about the ways in which the knowledge-types arise from two ways of characterising the same conceptual knowledge because of how that conceptual knowledge is constituted as responsivity to implicit inferential relations.

One phenomenon, responsivity to a particular set of implicit inferential relations in the world involving medieval peasants, is being offered under different descriptions. One description calls upon the relations responded to in *this* case, the other description calls upon a generalisation, a distillation of the principle involved in the relations in this case. Not different relations or relations constituted differently but the same relations characterised more abstractly, a responsivity that potentially strengthens as more cases fall under the same abstraction.[64] There is an important question as to whether or not the pupil recognises the relations under both descriptions or not, but for now, it is illuminating to see that the relations constituting one utterance or description, are the same relations involved in constituting the other utterance. It seems unhelpful to characterise pupils' understanding of 'harvest dependence' as *first-order* knowledge if it is constituted by causal understanding and is taught with a view to enhancing pupils' understanding of how 'agency and context intertwine' in causal analysis. Likewise, it seems unhelpful to call 'agency and context intertwining' *second-order* knowledge if it is arrived at or constituted through understanding this instance of 'harvest-dependence'. The relations pertinent to, 'agency and context intertwining' in causal analysis, are, for the historian, the relations that give meaning to the understanding of 'harvest-dependent' and vice versa. This assertion in no way challenges the notion that a teacher can often gain better access to pupils' causal commitments when they pose a question that explicitly calls for causal reasoning.

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[64] Pupils can be responding to the implicit inferential relations in the world that constitute the word or concept of 'fluctuate' without knowing the word we use to refer to the relations that constitute fluctuate. Here, teaching the pupils the new word is straightforward, because they are already responsive to the relations in the world.

But how can the knowledge-types distinction in history education be understood if an implicit act of inferential responsivity underpins all conceptual knowledge whether the concepts can be classified as being about phenomena in the world such as kings, battles, and marriages or about relations between phenomena in the world such as cause, evidence, change and so on, *and* if the relational connections commonly characterised as *second-order* knowledge, as distinct from *first-order* knowledge, actually constitute any and all knowledge whether classified as *second-order* or *first*? I now return to the early knowledge-type theorisation in history.

*Returning to the early knowledge-type theorisation in history education*

The Inferential account of meaning enables fresh analysis of the early knowledge-types theorisation. In Chapter 2, I read Lee (2005) as proposing that when you make historical claims, or answer historical questions, you are implying identifiable views about how the world works (how cause works, how evidence works, how account writing in history works). In Chapter 2, I pointed to a key consideration, the *embedded* nature of the second-order or disciplinary understanding – the 'it is *as if* you think' – that Lee (2005) read off pupils' explicit claims. Lee and colleagues laboured to get at the implicit, to make it explicit. For example, in Lee and Ashby's research using differing historical accounts of the fall of the Roman Empire (Chapter 2), the conceptually weaker pupil did not begin by saying they think there is a fixed truth and historians' job is to find and report it. Instead, the pupil revealed this idea in what they said about the empire's fall when imagining one historian had failed to identify the correct day of the empire's collapse. In Lee and Ashby's formulation of knowledge-types, we come to see the relations that pupils took to pertain in the world because those relations were *already* implicit in what they said and thought. In other words, these pupils could not say what they originally said unless they took the world to be a certain way. The taking of the world to be a certain way was constituting the meaning of their utterances. By an Inferentialist description of conceptual meaning, Lee and Ashby were pointing out the commitments these pupils were undertaking, the responsivity to relations by which pupils' notions of historians, accounts, empires, fall and so forth, were meaning. From Lee's (2005) work, we also see that the pupil neither needs to be explicitly conscious of, or accustomed to, articulating the assumptions

about the world that they must be operating with in order to claim what they claim about the world.[65]

To use an Inferentialist language, Lee was able to talk about pupils' responsiveness to implicit inferential relations because he went looking for implicit relations embedded in the claims pupils make, and furthermore, he went looking for particular structural relations deemed pertinent to the practice of history. But where our knowledge-types theorisation potentially breaks is if we inadvertently separate the inferential responsivity from the words and concepts that the inferential responsivity constitutes, and instead treat that inferential responsivity as though it were distinct from some other conceptual knowledge-type. If this is what we mean by our knowledge-type distinction, then, from the inferential *conceptual how* perspective, we are in error.

A potential misstep is in not seeing how it is *retrospectively* and *analytically* possible for us to distinguish 'what is seen' from 'a way of seeing revealed in what is seen'. It is our capacity for language that enables us to provide such a commentary on our conceptual knowledge. The concomitant mistake is then to try to feed that *analytical distinction* forward into a description of what goes into thought, as if different knowledge-types (some with and others without responsivity to implicit inferential relations) need to be combined by the thinker in an occurrence of historical thinking. The mistake rests in imagining the responsivity exists in a distinguishable way *in* the activity of conceptual thinking, rather than seeing the responsivity's distinctiveness or distinguishability as analytical, as available and potentially helpful in commentary about thinking.

Furthermore, *what* conceptual understanding *is*, a responsiveness to what we take to be relations in the world, became exclusively and mistakenly attached to one set of concepts which Lee (2005) rightly identified as being *about* relational or structural ideas, rather than being understood as an activity constituting *all* conceptual meaning. The relational or structural responsivity constituting what subsequently became labelled as distinctive, as substantive, or of a different order of knowledge, does not differ in kind. Lee's extraction and identification of structural relations (what I have called the conceptual *under-ply* from a

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[65] It is also worth noting that it is quite possible for teachers to be unaccustomed to paying deliberate attention to these constituting beliefs, which is a reason why the history education community draws attention to a knowledge-types distinction in the first place and is a reason why the distinction is so valuable.

*conceptual-how* perspective) as *distinct* concepts rather than as a responsivity to the world constituting any and all concepts, brings unintended consequences.

While I welcome Lee's recognition of how claims involve relational ideas, a consideration of the *conceptual how* helps to bring the potential limitations of the existing knowledge theorisation into view. We could already see some limitations in the existing knowledge-type theorisation in Chapters 2 and 3, without an *inferential conceptual how*, when noticing how *second-order* or *disciplinary* knowledge was appearing *extracted* or *embedded* in the literature, on the one hand, *entity-like* as a rule or tool, a general description of structural relations or on the other hand, *act-like* in making a particular claim involving that rule or tool. When thinking about *second-order* or *disciplinary* knowledge, we could already see in the shortfall in pupil learning (Chapter 3), the potential damage caused by mistaking a description of something (the lens) for the performance of something (seeing through the lens). With an *inferential conceptual how* we now see through to the mistake of treating an implicit activity of responding to relations, which is universal to all concepts, as a defining characteristic exclusive to a particular subset of conceptual knowledge, concepts about relations. If this is what we mean by knowledge-types, then, from an *inferential conceptual how* perspective, we are in error.

Without the theoretical tools made possible by a consideration of the nature of conceptual understanding, that is, without what I have called for the purposes of discussion in education, an inferential *two-ply* account of meaning, Lee (2005) and colleagues could neither foresee nor guard against the misunderstandings that could arise as a result of the steps they took in trying to explain a complex point. *What* we think is not simply *imbued with* but is *constituted by* responsivity to implicit inferential relations taken to pertain in the world, described here as ways of taking the world to be. This takes us back to my second claim in the previous subsection, the sense in which conceptual meaning is helpfully characterised as one phenomenon which can be discussed under two descriptions (a top and under-ply or *extracted* in explicit statements about the relations and *embedded* in use), rather than two phenomena in need of combination in the activity of conceptual thinking.

It is not that what we call *second-order* knowledge is simply *embedded* in what we call *first-order* knowledge and can be *extracted* revealing two separate knowledge-types which stand in need of combination in the activity of thinking. From the *conceptual how* perspective, there

is an important sense in which what Lee referred to as *second-order* knowledge (responsivity to patterns of implicit inferential relations) *is* the reasoning that constitutes what is referred to as *first-order* or *substantive* knowledge (our claims about the past). 'Constitutes' here is understood in the sense of what it is for the claim to be meaningful, be it appropriate or not. 'Constitutes' in the sense of that which gives meaning to the claim, not in the sense of establishing as a matter of truth, of historical fact or plausible argument.

From the inferential *conceptual how* perspective, when considering what concepts *are*, the taking of relations between phenomena is not a *complementing* knowledge added to our other knowledge of phenomena which is somehow constituted without the taking of relations between phenomena even though the way a teacher might discern a pupil's responsivity to implicit inferential relations is overtly to ask them to explicitly reason with their understanding, and Lee and Ashby did. The idea challenged is that the conceptual knowledge of phenomena is distinct in knowing activity rather than in retrospective description from the conceptual knowledge of the relations between phenomena. Responsiveness to relations between phenomena is not simply something that happens only once we understand enough knowledge of phenomena constituted through some other non-inferential means. Rather, from the inferential *conceptual how* perspective, the taking of relations between phenomena *is* what it is to understand phenomena conceptually.  As exemplified above, to respond to even the simplest of phenomena in the past, the concept of king, or battle, marriage or tax, is to have responded to implicit inferential relations, relations we can **also** go on to call cause, evidence or change, and so on. When considering the micro level of the occurrence of conceptual thinking, what it is to think conceptually, it would be a mistake to imagine an activity of combining two knowledge-types, one involving the reasoning of relating and one that does not.

In what sense is it that we cannot teach for one knowledge-type and not another? A consideration of the *conceptual how* provides a new argument from that already proposed in the existing literature. We must teach for both knowledge-types because, in a very important sense, there is no such thing as conceptual knowledge of one and not the other. To say that there is no such thing as a fact, no such thing as a claim about the past, no such thing as a concept that picks out a person, event, place or period, *without* responsivity to structural relations (implicit inferential relations), is not to argue that such claims arise *thanks to* the

employment of some other knowledge, some mutually dependent and equally vital historical knowledge, but rather it is to say that meaning, conceptual meaning-making, *is* responsivity to structural relations. At stake is a fine-grained care over what we mean by our knowledge-type distinction because the impression we give and the language we use to describe it has teaching consequences (exemplified in the final section). The qualifiers in use here are nuanced and so the probability of category conflation is high.

I used the analogy of bees and flowers (Chapter 2) to characterise one way of thinking about the relationship between knowledge-types. Bees and flowers exist side-by-side, inseparable yes, one does not exist without the other, pollen and pollinators are mutually dependent, but they are not inseparable in the sense of being singular. Existing theorisation (Chapter 2 and 3) leans towards a complementary relationship between interdependent knowledge-types and there is a sense in which this characterisation is warranted, that is, a sense in which it is trying to get at something helpful.

We *can* use an analytical distinction between knowledge types to hone our choice of focus when designing lessons to say that we are deliberately attending to this or that (a way of seeing or what is seen). We *can* name the 'ways of seeing' that seem to be in play, as Lee (2005) did. But from the *conceptual how* perspective, we ought not to then imagine that there could ever be something seen without a way of seeing, or a way of seeing without something seen. It is perfectly reasonable to distinguish concepts *about* particular people, places, events and so on, from concepts *about* key structural relationships of interest to historians. The difficulty comes if our claims related to what concepts are '*about*' slips into additional unwarranted impressions or assumptions about what concepts *are*, including differences in what is entailed in conceptual understanding between different knowledge-types.

As discussed in the final section of Chapter 5 below, better for the teacher to scrutinise what implicit inferential relations pertain in the historical knowledge to be taught and in the pupils' understanding, and to imagine that the teacher has the choice of explicitly drawing attention to that knowledge under one description or under another (as *extracted* in explicit statements about the relations or *embedded* in use), but not that they are working at various moments with a type of conceptual knowledge that involves sensitivity to relations between phenomena while in another moment they are working with another type of knowledge that does not involve sensitivity to relations between phenomena. The *inferential conceptual how*

perspective enables us to discuss the sense in which knowledge-types are not best construed as *complementary* and *interdependent* knowledge.

Without consideration of the *inferential conceptual how*, knowledge types are prone to creating the impression of a strong separation, and thus, an analytical convenience with the capacity to enhance teaching decisions, risks becoming a potential teaching hazard if misunderstood. Classroom implications is taken up more fully in the following section, however, we can already anticipate what is at stake. The Inferential point that it is not simply in explicit claims of causal relationship that causal inferential relations are in play, it is also in the very words and concepts such as 'weapon' that will be used to make some factual statement or causal claim. By implication, there is not some point at which we now know enough concepts to be able to begin to reason causally, to meaningfully call this thing a weapon is already to reason causally. For sure, there is work to be done to further elaborate how this responsivity to implicit relations iterates outwards in webs of meaning, and how we can take up an interest in relational claims explicitly, however, a fundamental concern here is to show how the seemingly simplest unit of conceptual understanding, for example, the word 'weapon' or 'Roman', does not bottom out in some relation-less or non-reasoning activity from which we build subsequent reasoning and this insight has significant implications when we turn to consider concept formation and teaching.

Concluding this return to the early theorisation, it is important to note that even if the knowledge-type distinction is understood, it is not enough. When we consider existing descriptions of conceptual development, that is, when we articulate weaker and stronger conceptions of history as described in Chapter 2's discussion of the CHATA project and conceptual change, it is important to notice that an identification of more naïve and more expert conceptualisations (for example, pupils' conceptions of causation in history) is *not* an account of what concepts are, in the sense of how they are meaningful, or *how* they develop. This existing articulation of more or less sophisticated conceptualisations is insightful. It speaks to *what* is worth learning. It provides educationalists with something to aim for in their teaching. Yet, in and of itself, the mapping of such 'progress' does not address the question of *how* any conceptual meaning is constituted, be it weaker or stronger, or of how a pupil is to make progress, or of *how* the teacher is to support them in making such progress. Understanding meaning as involving responsiveness to the implicit inferential relations which

are taken to pertain between phenomena in the world provides implications which cannot be derived from existing knowledge theorisations which stop with the identification of knowledge-types; or from theories that simply suggest knowledge *is* constructed, socially or otherwise; or from taxonomies or mappings of progress, as helpful as these insights are. An examination of what is entailed in our words having meaning at all, brings us a step closer to being able to better understand and influence the process of concept formation, in so far as it helps educators to see what might be going on, and going wrong, for some learners, and what educators can do about it.

To summarise the above return to the early knowledge-type theorisation, we can now see the sense in which the knowledge-types distinction exists in our description of conceptual knowing rather than in the activity of conceptual knowing, and how we ought not to mistake the activity of conceptual knowing for a subset of knowledge. What is indistinguishable in occurrence, the occurrence of making our words mean something, is rendered distinct in the subsequent description of the occurrence. Thus, the *conceptual how* perspective of conceptual meaning as responsivity to implicit inferential relations sits well with early theorisation of knowledge in history education, *if*, we retain the notion of *second-order* knowledge as an emergent feature in our *description* of knowledge, but not if we adopt a notion of *second-order* or *disciplinary* knowledge as an actually separate, complementing and interdependent knowledge type, to be combined with a different knowledge-type in the activity of thinking or meaning-making.

## 3. Classroom implications of teachers' knowledge theorisation

In this third section of Chapter 5, I first explore some detrimental implications of teachers operating with an ambiguous knowledge-type distinction and then explore alternative teaching options and a fuller construal of teaching choices.

### A detrimental flattening of conceptual understanding

A cluster of problems can emerge if we fail to see the meaning-making aspect of conceptual knowledge as *one* phenomenon, not the combination of two phenomena. For example, if

knowledge-types are understood as no more than complementary or mutually dependent, there can be a reification of flattening of conceptual understanding.

*First-order or substantive knowledge*

*First-order* knowledge never appears as *act-like* in the literature because the *conceptual how* aspect of knowledge is not the feature of knowledge under discussion. Whether or not this exclusively entity-like characterisation is helpful, the resultant impression can be of one knowledge-type that is acted upon using another knowledge-type (Chapter 2) which inadvertently risks stripping *first-order* concepts of their constituting activity of responsiveness to implicit inferential relations.[66] Thus, in history education, one knowledge-type can appear to the teacher as constitutionally more inert, perhaps simpler (*entity-like*), while the other appears more dynamic and complex (*act-like*).

As we saw in Chapter 5 section 2, the mistaken impression that some concepts do **not** entail responsivity to structural relations arises partly because reasoning or relational responsivity has become the defining feature of a *particular* class of concepts, *second-order* or *disciplinary* knowledge, rather than the activity constituting any and all conceptual meaning. One unintended negative consequence of only seeing a *complementing* relationship between knowledge-types is the way it risks leaving *first-order* knowledge without reasoning activity. Failing to see the reasoning *under-ply* of what has been called *first-order* knowledge can spin teachers off in either of two wrong directions. Teachers may not give the lesson-time or learning support needed in certain segments of the lesson if they *underestimate* the reasoning challenge entailed when pupils are making meaning of what is called *substantive* or *first-order* knowledge. This can occur if we imagine the challenge in the comprehension of new factual content is not a reasoning challenge but is simply that of paying attention to and remembering what is said, ahead of getting to the historical reasoning task which is pushed out to some later point. Equally, a teacher can underestimate the educative potential within so-called *substantive* or *first-order* knowledge resulting in pupils missing out on rich opportunities to develop their historical reasoning when encountering new factual content.

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[66] The argument is not that it unhelpful to imagine some knowledge as just known and acted upon or used in the construction of other claims; only that this convenience can also mask an important feature of knowledge and may impact teacher decision making negatively.

While some pupils may be left behind because they are not making sense of the content, those making sense may not move ahead much in their understanding if the new cases taught do little more than spread laterally offering up the same structural understanding appearing in a new time or place, when instead, the new period, place and people could also add much value to the quality of pupil responsivity to implicit inferential relations. Thus, teachers can risk offering some pupils history lessons that do little more than re-tread already familiar and sometimes unhelpful relations under the guise of new names and dates when pupils would benefit from encountering more enriching relations.[67] The teacher's opportunity to be strategic in their content selection and question choices can be missed if they fail to appreciate the historical reasoning occurring in the comprehension of seemingly substantive or first order historical knowledge. The teaching of what has been called *substantive* or *first-order* knowledge is the means to advance pupils *disciplinary* or *second-order* understanding if the teacher has chosen well, or it can be a missed opportunity if the teacher has chosen badly. A main mechanism by which pupils advance their *second-order* or *disciplinary* knowledge is lost if the power to reason in more appropriate ways when making sense of *first-order* or *substantive* knowledge is missed.

Imagining that the distinct nature of the knowledge-types necessitates a particular lesson order is another detrimental consequence of an ambiguous knowledge-type distinction. Arguably, as discussed below, there are better and worse sequences in learning, but from the *conceptual how* perspective, these are not based on one knowledge-type devoid of historical reasoning preceding another knowledge-type that involves historical reasoning. An Inferentialist account of conceptual meaning underscores the teacher's expertise to select, structure and sequence the content and activity of their lesson in accordance with the complexity of the history being studied and the needs of the pupils undertaking the learning; thus, avoiding the imposition of an arbitrarily established teaching sequence, for example, *first-order* knowledge first, *second-order* knowledge second, rather than a warranted order of lesson sequencing. As explored further below, the basic question in light of the *conceptual how* is to ask what implicit inferential relations are in play.

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[67] I end Chapter 5.3 by returning to how we talk when using the knowledge-type distinction in history because it is important to acknowledge the benefits as well as the drawbacks of the distinction. For example, the original knowledge-type distinction in history education worked to illuminate the danger of pupils accumulating quantities of factual knowledge without enhancing the qualities of their historical reasoning.

*Second-order* or disciplinary knowledge

Perhaps ironically, what has been called history's *disciplinary* or *second-order* knowledge is just as prone to reification through its loss of *under-ply* if the knowledge distinction is understood without consideration of the *conceptual how*. Statements explicitly involving *second-order* knowledge, or utterances setting out *disciplinary* principles, are only meaningful in so far as they are constituted by responsiveness to implicit inferential relations taken to pertain between physical and social phenomena in the world. Educationalists ought not to proceed as though claims *describing or naming* the act of responsivity can be treated as equivalent to the required act of responsivity or that understanding someone else's claim necessarily equates to the ability to respond to the utterance's constituting implicit inferential relations for oneself. Teachers should not necessarily imagine that what has come to be called *second-order* knowledge can be taught simply through being explicitly shared with pupils in utterances that describe the 'rules and tools' that historians respond to in their work. That would be to ascribe the *top-ply* of utterances naming history's *second-order* 'tools and rules' a power they may not have for some pupils. As described below, sometimes it appears as though explicit sharing is sufficient, but the Inferentialist account serves to explain the sometimes and the sometimes not.

While it is vital that teachers are enabled to be sensitive to the distinctiveness and value of historians' disciplinary understandings, their ways of seeing, a key point is that this knowledge can only be developed or leveraged, in the first instance, through the activity of responding to *implicit* inferential relations between phenomena. As discussed in section 1 and 2 above, while 'ways of seeing' can be extracted and named in sentences removed from any particular phenomenon, sentences about *second-order* or *disciplinary* knowledge are only meaningful in keeping with pupils' responsivity to the relations between the particular phenomena. This is just another way of saying that the *under-ply* constitutes the *top-ply* from the *conceptual how* perspective.

Thus, the educative danger of overreliance upon explicit utterances about *second-order* or *disciplinary* knowledge, without adequate care for the *under-ply* constituting it, is that pupils can be taught to respond *in some measure* to what has come to be called *second-order*

historical insights yet, nevertheless, without pupils becoming appropriately responsive to the implicit inferential relations in the world that constitute the historian's or history teacher's meaning-making. When these pupils then encounter new cases which could be helpfully informed by the desired responsivity apparently just evidenced by the pupil in their utterance *about* the 'rules and tools' of *second-order* knowledge, that understanding is not actually available to constitute pupil thinking about the new historical issue at hand. I believe we saw something of this problem in the research shared in Chapter 3 when pupils could say things about history's 'rules and tools' because these words and concepts were constituted with some meaning but could not use these principles to create their own meaningful claims about the past. It was as if pupils could not operate with these principles implicitly, constituting more appropriate claims about the history they encountered.

This is not an argument in favour of abandoning explicit discussion of extracted *second-order* ideas or *disciplinary* principles.[68] If I insist that a pupil can be described as knowing the principle that a cause is a claim of causal relationship between phenomena and hold that the desired measure of this knowledge consists in the extent to which the pupil has related phenomena causally, I am not casting doubt on the role that *explicit* discussion of history's *second-order* knowledge can play. There is much value in explicitly naming second-order rules and tools, and teaching expertise depends on knowing when and how to do so well and not badly. For the pupil, if they hear the generalisation naming their existing responsivity, it may help consolidate their tentative understanding and recognise its relevance in future cases. Extracting the principle that a cause is a claim of causal relationship between phenomena from pupil responsivity to causal relations between particulars, does *not* mean that the causes of another event necessarily become available to that pupil by virtue of knowing this second-order principle. But if a pupil truly becomes responsive to this principle in one case, it is reasonable to imagine that responsivity could carry forward into other cases. Knowing the principle extracted from this case simply means that in the next case this pupil may be less likely to think that they have offered a cause when they have simply described something that preceded the event to be explained, and this is an important advance in their historical knowledge. The teacher needs to wait to see if this is indeed the case. Just because a pupil may not know how the principle applies in this or that case, because they lack knowledge of

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[68] I return to how we talk when using the knowledge-type distinction at the end of Chapter 5.3.

the particulars of a specific case, does not make knowing the principle itself less valuable. The pupil now has a way of seeing that stands to have helpful application in future seeing. The hope is that as they encounter a new causal challenge, having responded helpfully once, they may be more sensitive to causal relationships and not simply misconstrue cause as simply descriptions of actors, events or states of affairs that happen to precede the occurrence to be explained. As illustrated using the two lesson examples below, the *conceptual how* point is that explicit utterances articulating *second-order* knowledge need to be timed appropriately using a fuller construal of teaching choices which neither over-rely on explicit utterances nor miss the importance of making the implicit explicit.

### Creating the conditions of responsiveness and deciding when to make implicit inferential relations explicit (two example lessons)

A consideration of the *conceptual how* in concept formation could help clarify the nature of the knowledge-type distinction but it can also support teachers' decision making. When student teachers experience shortfalls in pupil learning it is tempting to respond either by simply removing the need for pupils to generate historical claims, asking instead for them to simply understand and repeat other people's claims, or to reduce one's teaching repertoire to simply explaining and modelling history's rules and tools and then asking pupils to apply or use them.  But it is only through induction into ever more appropriate implicit and inferential responsiveness to *the world* that words can be adequately meaningful, and this has implications for how we teach. The lesson examples below illustrate an alternative way to talk about teaching, a form of teaching that is already well established in many classrooms, teaching in which pupils are inducted into the world through the opportunity to respond to carefully chosen *implicit* inferential relations, teaching in which teachers sensitively time when they choose to make ideas explicit and when they keep pupils responding to implicit inferential relations in order to maximise the effectiveness of subsequent explication.

The teachers in the two examples below *support* learner concept formation and use by creating the *conditions of responsiveness.* This is an alternative to teaching approaches that are overly reliant upon the communicative power of explicit utterances (*top-ply*) which may

or may not evoke the necessary responsiveness (*under-ply*).[69] Teachers can curate pupils' encounters with the world in which relevant historical relations pertain. These encounters can serve as an initial step readying pupils to go on and find the explicit descriptions naming those relations more meaningful. As we shall see, because words can only mean what they mean by virtue of our responsivity inherent in use, pupils do not necessarily need to begin with an *explicit* description of the relevant inferential relations, but rather, they can benefit from the chance to respond to *implicit* inferential relations.

Below, I describe two lessons to illustrate how meaning can be forged from encountering opportunities for responsiveness to implicit inferential relations which constitute words *prior* to pupils being expected to make meaning of the utterance that explicitly describes those relations. The first is an example of a teacher building the *conditions for responsiveness* to inferential relations when the required responsiveness appeared missing for many. The second is an example of a teacher building the *conditions for responsiveness* to inferential relations when the pupils held inferential relations that were incompatible with those required for a more disciplinary understanding.

**Example 1. Building New Responsiveness:** A student teacher reported watching their mentor use diverse materials over the course of a lesson to teach their pupils about the restrained nature of Caribbean slave rebellions. The teacher then asked pupils to describe a final source. In those last few minutes of the lesson, as pupils began to pour over that source, they became bothered by the ways it jarred against what they had just learned. They saw how the depiction of violence in that final source ran counter to almost everything they had learned about the relatively peaceful acts of resistance. Constructively confused, pupils began to *demand* that they should know who created the source and when. The teacher had deliberately withheld the source's provenance to create this pupil-instigated, need-to-know request. When asked, the teacher revealed that the final source had appeared in a British newspaper designed to curb the growth of the abolition movement. Pupils then appreciated the relation of source provenance and historical claim - the source producers had a vested interest in a particularly negative depiction of the rebellions.

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[69] See Appendix 9 for examples from the literature exploring teaching for inferential responsiveness and a suggestion of possible implications for the qualities of knowledge if the appropriateness of responsiveness is not adequately considered.

Perhaps these pupils had already sat through a dozen lessons in which a teacher, unheeded or with limited referent resonance, had told their pupils about the important role that a source's provenance plays in historians' thinking. Perhaps they had been asked to remember and use this knowledge, and perhaps some had. In this lesson, however, pupils *felt* just how important it was to question a source's provenance and did so as if spontaneously. Pupils became responsive to the implicit inferential relations which appropriately constitute the statement that the provenance of sources matters to the claims that can be made using them. It was inconceivable for pupils not to question the source provenance. Details of the source's authorship were now understood as integral to the claims that could be made – an insight the teacher had planted, subsequently unpacked, and finally named in an explicit utterance *after* pupils became appropriately responsive to the relations giving meaning to the historical insight.

**Example 2. Changing Existing Responsiveness:** In a second example, pupils were given the opportunity to see how they thought about the role of identity in attitude formation when a student teacher taught a lesson examining Victorian attitudes to the female suffrage campaign. Having studied a number of contemporary attitudes and the range of people holding each view, the student-teacher teaching the lesson revealed to pupils that a particularly visceral attack advocating a 'good whipping' for those women working towards, 'this mad, wicked folly of 'Women's Rights'', came in a private letter written by Queen Victoria. Through the materials and activities in that lesson, pupils had been building up to realise their inability to conceive of layers of identity, where someone could be female but that that single feature alone did not exhaust who they were or necessarily predict how they felt about a topic. The shocking realisation that a woman could have taken such a stance did not render the gender identification pointless; it simply tempered its worth in relation to Queen Victoria's multi-dimensional identity as a female *and* as a monarch. As intended, the lesson revealed to pupils both Victorian attitudes towards women *and* their own attitudes towards generalisation.

Perhaps pupil understanding was only nascent, but the shock pupils experienced in response to seeing Queen Victoria pen an anti-female view, could not be anything other than the beginnings of their grasp of the inadequacy of their reliance on single identity markers. By knowing one thing about Queen Victoria, and many about their own experience of gender,

they interacted with the world as if they knew all they needed to know. Their shock laid their responsivity bare to themselves. The teacher was readying the pupils to become more responsiveness to the relevant set of inferential relations latent within the utterance of the explicit sentence - 'When we generalise about people, we ought not to assume the dominance or exclusivity of a single identity marker.'  Whilst pupils might not yet be able to articulate that thought fully for themselves, their *shock* testifies to the relevant inferential relations being implicitly present, just as the pupil *demand* for the source provenance in the previous example evidences the first-person, implicit inferential relations sought by that teacher.

*What would be lost moving from explicit to implicit?*

Let us imagine, in contrast, that a teacher already pulled the implicit inferential relations out from its occurrence into an explicit utterance such as, 'The provenance of sources influences the claims one can make based upon them' or 'When we generalise about people in history, we ought not to assume the dominance or exclusivity of a single identity marker.' and began either lesson with these utterances. Such an inversion would change the teaching and learning and resultant pupil knowledge because the direction of travel from implicit to explicit is not simply a pedagogical choice.

First, it could change the experiential strength for pupils. With this alternative direction of travel, there could neither be the pupil demand (to know the source provenance) nor shock (to see a woman hold such views) experienced by pupils in the lessons described above. This experiential dimension no doubt adds strength and memorability to pupil learning through the intensity of their attention. For some pupils, this may be the strength of experience of the world that is needed, if they are to break free from the limits of their existing responsiveness. Thus, by providing pupils with the claim setting out the pertinent relations more explicitly first, the teacher may inadvertently direct less pupil attention rather than more attention to the appropriate inferential relations that constitute the claim.

Second, explicit to implicit teaching could change the assessment opportunity for teachers. The 'demand' and 'shock' in these lessons served as powerful indicators of pupil understanding, thus, had the design moved from explicit sharing of the principle followed by some requirement to recognise or act upon the teacher's explanation, the teacher would

have lost the opportunity to discern whether or not the relevant implicit inferential relations are indeed constituting the pupils' meaning when they hear, speak or repeat the explicit utterance about the importance of source provenance or identity in history.

To reiterate the *conceptual how* insight, if the teaching begins by giving the explicit utterance it can be more difficult for the teacher to know if the meaning pupils' make from that explicit utterance is populated with the *desired* relevant implicit inferential relations, and not with other less helpful responsivity. The pupils may have enough responsiveness to know the meaning of the word and enough memory to repeat a definition, rule or insight but without the necessary responsiveness to the pertinent relations, the pertinent limits to their understanding may remain intact. Explicit utterances require some responsivity to implicit inferential relations; however, *repetition* and even some *application* of concepts and conceptual insights during teaching activities, may not include the appropriate responsiveness to implicit inferential relations. Unwittingly rehearsing responsivity that is inadequate to the case at hand may inadvertently be further embedding limitations in pupil understanding or may chip away at confidence and enthusiasm.

Third, the change in teaching direction relates to different knowledge. Without the chance to register 'demand' or 'shock', the teacher would have scuppered the opportunity to have pupils forge responsiveness to *implicit* inferential relations as they occur *implicitly*. The act of responding to implicit inferential relations between phenomena is changed into the act of understanding the relations explicitly described by others. There is every reason to suspect that the meaning-making differs when a teacher deploys claims that explicitly name the relations which they hope pupils will then be able to respond to as they occur implicitly in the world versus when they name these relations after pupils begin to respond to them as they manifest implicitly in the world. There is an important difference between implicit relations which pupils take to pertain when responding to the world and the explicit relations that are pointed out to them.

*Wherein lies the teaching expertise?*

Are the two lesson exemplifications above not outliers? Why go to so much trouble to design encounters with the world that have the potential to shift pupils' responsivity? Assuming the

Inferentialist principle that responsiveness constitutes representations rather than representations straightforwardly bestowing the capacity for responsiveness, it matters if teachers develop expertise in creating the *conditions of responsiveness*. A key pedagogical question arising from the *two-ply* inferential account of conceptual meaning is whether educators risk pre-empting the development of pupils' historical knowledge by attempting to give pupils more representations than they can become *sufficiently* responsive to at that moment. An Inferentialist informed pedagogy relies on creating conditions for pupils to forge the necessary responsiveness to implicit inferential relations. It also recognises how this forging occurs in relation to pupils' existing responsiveness to implicit inferential relations. The teachers in the examples above had identified that their pupils were not adequately sensitive to the influence of a source's provenance on the claims that can be made using that source and that their pupils were being inappropriately deterministic in their assumptions about the influence of identity. Therefore, they planted the opportunity for pupils to forge new responsivity by coming to see the relationship between source provenance and claim in the slave revolt lesson and by coming to see the layers of identity shaping someone's attitudes in the suffragette lesson.

An Inferentialist perspective reminds us that it is our responsivity to implicit inferential relations that give our words meaning, the words themselves are not inherently meaningful. To rely on explicit descriptions of implicit relations in the absence of the appropriate responsivity to implicit relations can fail because it can rely on cashing in, rather than stimulating, the very responsivity that the teacher imagines is being created by the description. The teachers in the two lessons above used language to bring about the conditions of responsiveness, but they did not use language to explicitly describe the implicit relations that pertain *until* they had supported pupils by making available the necessary conditions of responsivity. To do otherwise risks assuming the existence of the thing you are trying to create.

Part of the teaching skill in the examples above relies on each teacher's ability to make the most of the pupils' engagement with the case. For the teacher to leave the lesson discourse at the level of pupil demand to know a source's provenance *in this case*, or shock at Victoria's attitude *in this case*, and not articulate the abstracted principle as a generalisation to be carried forward in future cases, would also be to miss the fullness of the teaching opportunity.

A consideration of the *conceptual how* allows for a recognition of the educative power that rests in deciding which relations are available, both in the history and the pupils' prior knowledge, and controlling the timing of what is made explicit and when. From the *conceptual how* perspective, we see how the interplay of implicit and explicit counts.

Overtly asking pupils to generate claims that explicitly relate phenomena is central to history teaching. There is also a vital role when seeking to develop pupils' conceptual understanding for retrospective commentary unpicking claims and concepts that are overtly *about* relations between phenomena. The teacher must make implicit inferential relations explicit, but a consideration of the *conceptual how* supports teachers to discern when, how and why to do this. The choice of when to move back and forth between moving from explicit to implicit, or from implicit to explicit is made using a consideration of the responsivity teachers seek, the qualities of pupils' existing responsivity, and the means available to create the conditions of responsivity.

Teachers need not be limited to only being able to consider whether they explained what they know well, in sufficiently small and adequately exemplified chunks and with ample opportunity for application. With a *two-ply* account of meaning, teaching can be construed as the deliberate construction of the conditions of responsiveness and a sensitivity and ability to respond helpfully to learners' responsiveness to the implicit inferential relations within those conditions.

*What informs a teacher's decision about which teaching focus to adopt during a lesson?*

From a *conceptual how* perspective, teachers can explore how they are using their lesson segments and sequences (each comprising *content-activity-purpose* combinations, Chapter 1) to leverage pupils' responsivity. The teacher identifies when they can presume that the necessary implicit inferential relations are already available or are within easy grasp for certain pupils and when they need to leverage a step-change in pupils' thinking through breaking new ground. A re-phrasing of Sarah's Question 2 onto the idea of 'estimating peasants' chances' could have brought the meaning of the question into view. Teachers continually and intuitively make such tiny adjustments live as their lesson unfolds. The slave

revolt and Victorian women examples illustrate teaching to bring about significantly new responsivity through making available implicit inferential relations that are just *beyond* those to which the pupils are already routinely responsive.[70]

A teacher may legitimately choose not to attend explicitly to a pupil's implicit inferential responsiveness but to assume they can take meaning-making for granted in some utterances because they have discerned that their pupils' responsivity to the implicit relations constituting the knowledge is already sufficiently secure for the purpose at hand. Or they may choose to attend only minimally to it through a quick recap or through what I described above as 'discerner questions' in Sarah's Peasants' Revolt lesson when it would have been helpful to discern if pupils needed an 'estimating chances' discussion to tilt them away from identifying grievances and towards the effects of the constraints and enablers of circumstance.

When treating utterances as though they are inherently meaningful, the teacher believes that the pupils' *under-ply* to the words or concepts in use is already adequately constituted for the purposes at hand, not that the knowledge itself is of a sort that can be told easily because it is imagined to be a conceptual knowledge-type devoid of reasoning. Teachers move at greater speed and adopt certain practices when they believe they are covering sufficiently familiar terrain. Familiar in history may not necessarily be revisiting previously studied particulars. The place and period and people may be new to the pupils. Rather, the speed and minimal questioning reflects the teacher's confidence that the necessary concepts, say the concept of 'ruler' or 'famine' or 'conquer' or 'Spain' or 'evidence' or 'turning point', 'interplay of agency and circumstance' can be taken for granted even though pupils have begun a new unit of learning.

There are occasions when we can assume that our explicit claims and implicit responsivity are appropriate and shared with our interlocutor. There are occasions when our utterances can be taken to convey our meaning straightforwardly rather than standing in need of additional efforts to make implicit responsivity explicit. There are times when we cannot proceed as if

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[70] I am not convinced that teachers regularly set out to find lesson material that will bring about specific step-changes in their pupils' understanding so much as develop a keen sense of what potential understanding could be brought out from the use of particular lesson material. The ability to recognise the potential within the history they are teaching allows for the development of a worthwhile curriculum over time.

this were so. Teachers becoming sensitive to these differences matters. The understanding that pupils do not come empty-headed, and that what they learn depends on what they already know, aligns well to the inferential *conceptual-how* insight that, given *how* words do what they do, teachers must be careful about what world and what words they place in pupils' path, how and when. As with Sarah's lesson in Chapter 5.1, sometimes some words will not work. But using a *conceptual how* perspective, that shortfall need not be a complete mystery. Educationalists can offer a fuller explanation of how the world that teachers introduce pupils to risks remaining meaningless, unseen, or unencountered by pupils, even when it is placed in their path. A consideration of the *conceptual how* speaks to next steps, helping educationalists to discuss which words to offer and when, which examples from and encounters with the world to bring to the lesson and which to leave. In the two lesson examples discussed above, we see how teachers can use words to make the world available to pupils. We will still face the significant challenge of making teaching decisions, but better equipped.

## Revisiting how we talk when using the knowledge-type distinction

Just as Lee (2005) in the fall of the Roman Empire example (Chapter 2), orchestrated a way to see how pupils thought about what historical accounts *are*, it is helpful to *discern* which ways of seeing are in play for pupils and historians. It can, therefore, be very helpful for teachers to be able to articulate 'ways of seeing' to support their teaching decisions. Educators *have* been able to sharpen their teaching focus through helpful taxonomies delineating progress within pupils' understandings of history's *second-order* concepts (Chapman 2015). But from the *conceptual how* perspective, it is essential to avoid the misconception that history's *second-order* or disciplinary knowledge needs to be taught because otherwise *it* is missing, leaving 'just' *first-order* knowledge, meaning a knowledge-type devoid of structural relations. This articulation of the knowledge-types distinction can distort the nature of conceptual understanding. The implicit inferential relations are not missing, rather, what may be missing as we fail to pay explicit attention is our conscious awareness of these relations constituting what we have called *first-order* knowledge.

Pupils' responsivity to implicit inferential relations may be shallow and naïve, inappropriate for the task at hand, but responsiveness to implicit inferential relations or *under-ply* is not absent when we make or take a claim, any claim, including the knowledge that has been called *substantive* or *first-order*. To think otherwise may be to conflate what concepts are about or what we are asked to do with our conceptual knowledge and what concepts *are*. It may be to conflate what representations refer to or how they can be used with how they refer at all. It risks conflating the words we use to describe particular relations with the act of relating that constitutes the meaning of all words. Calls to 'go beyond' the level of facts are unhelpful if understood, not as the legitimate call to ask pupils to reason with the facts they know, but as implying that a fact or a *first-order* concept is somehow not an act of reasoning or a reasoned claim. There cannot be knowledge of one type and not another (in terms of the activity of knowing), but we can take one knowledge-type and then another as the focus of our teaching, if by this we do not mean the presence or absence of different knowledge-types (some involving responsivity to implicit inferential relations and some not), but rather, if we mean to refer to what our teaching focus is about.

From the *conceptual how* perspective, the common characterisation of some teaching as conveying no more than 'empty words' which pupils can learn to parrot back can be seen as a potentially unhelpful shorthand if taken literally. We see how the idea of 'empty words' is a dangerous phrasing, and how the idea of a missing knowledge-type is a disastrous construal. From the idea that all concepts are constituted through responsivity to implicit inferential relations, and the resultant understanding of a gradation of meaning or spectrum of appropriateness, we can see that pupils' or teachers' words are not literally 'empty'. Better to imagine that pupils are simply not *as* responsive as they need to be to the relations thought to pertain between the pertinent phenomena in the world, and moreover, are at times responsive to inappropriate relations. Teaching which attends only to the *top-ply* of sharing more utterances about history's 'rules and tools', or more utterances about particular cases of people, events, places in the past, without attending to enriching the *under-ply* of pupil responsivity to the implicit relations in the world, risks falling short.

It is because the *top-ply* of our utterances does not inherently guarantee a specific *under-ply* that we need to be sensitive to the difference between the explicit and implicit guises of conceptual knowledge, not because we need to 'go beyond' one knowledge-type, a type that

does not have an inferentially articulated *under-ply.* It is because we cannot assume the same *under-ply* responsivity is entailed in the same *top-ply* utterance that teachers must work hard to establish and influence what pupils mean, not because there is a particularly tricky and separate type of knowledge that needs to be cultivated or added to a more basic type of knowledge. It is the appropriateness of the responsivity constituting the claim that differs from use to use, not the absence or presence of *actually* distinct knowledge-types.

Using the inferential *conceptual how*, we can think of the teacher as taking the learner's responsiveness to relations constituting conceptual meaning as appropriate for the case at hand or as in need of development, not as having one type of knowledge present and another absent. Thus, for the teacher, a vital question regarding concept formation is what this pupil means by what they say, in other words, whether and in what ways pupils are responsive to the necessary implicit inferential relations. The teacher holds a discernment of their pupils' meaning against a discernment of the implicit relations comprising the desired knowledge and works to create the conditions of responsiveness.

Of course, we reason with what we know, and we are often explicit about this reasoning process, naming our interest using the concepts that are about patterns of relationship – cause, change, evidence and so on. The thesis argument, however, is that the reasoning involved in response to explicit demands to relate knowledge in answer to historical questions is a manifestation of the reasoning that is also involved in constituting our factual understanding in the first place. Constituted, not in the sense of established as fact within a community of enquiry but constituted in the sense of making conceptually meaningful. The *conceptual how* perspective enables us to talk about how what we refer to as a *second-order* or *disciplinary* insight can materialise not just in the *explicit* activity of offering structural relations between facts, that is, in the *explicit* task of weighing causes or comparing changes and so on, but it may also come when the lesson appears to be addressing first order or substantive knowledge, because of how second-order or disciplinary insight is manifest in the task of implicitly responding to implicit structural relations. To call for a more nuanced reading of what is happening in history lessons, it is not to underplay the role of overt demands for explicit reasoning. Pedagogically, we value pupils being explicitly asked to reason with facts because it can reveal and develop their concept formation. We value pupils being explicitly asked to reason with facts because the complexities of relationships may well intensify as

more relations are drawn deliberately into our gaze. Indeed, the relations between some phenomena may not come into view without curricular planning that takes up particular features of the discipline of history.

## Conclusion

To say that conceptual *under-ply* is always present is not to say that it is sufficiently accomplished or that it becomes more appropriate with time or with exposure to the world (Wineburg 2001, 2005). But equally, simply offering pupils more and more explicit reasoning activities without building the conditions of responsiveness, may also do little to advance pupil responsivity to more appropriate implicit inferential relations.[71] The teaching must be chosen because it stands to advance the qualities of pupils' responsivity to implicit inferential relations and the teaching must bring that latent potential to fruition. The potential for greater learning, the chance to enhance *these* pupils' responsivity is lost if new, nuanced and more complex implicit relations are not planted in the teaching or are present but remain invisible to pupils, obscured by the less appropriate relations pupils already take to pertain in their new encounters with the world.

Inferentialism can be used to suggest new discussions as teachers consider how they create conditions of responsiveness in their lessons and how these relate to pupils' concept formation and development. If, as an Inferentialist perspective would have it, it is indeed the case that we do not acquire a concept and only *then* reason with it, but rather, a concept's meaning for us is a kind of reasoning act in and of itself (a responsiveness to implicit inferential relations) and we continue to reason with it, then conceptual development is an altering of reasoning which begins under one shape and turns into reasoning under another, for any and all concepts and claims; it is not the absence and then presence of reasoning depending upon a knowledge-type classification.[72] From the Inferentialist account, a story about us learning to reason with our concepts is a partial, and potentially misleading account of meaning-making and concept formation. Reasoning is not simply something one does with one's concepts;

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[71] Thus, the conceptual how sheds light on the limitations to instructional design discussed in Chapter 3.2.
[72] Reason and reasoning here is meant in the broadest possible sense including affective responses and intuition, not simply conscious efforts to work through some problem logically.

concepts are constituted by responsiveness to implicit inferential relations. Rather than risking student teachers imagining unanswerable questions about how to combine what was never divisible, the root of the knowledge-types distinction can be clarified, and the strategies of *discernment* and *support* can become more fully available to teachers. Teachers' important teaching decisions include an examination of what to make explicit, when, for whom, how and why. As before, these decisions still rest on understanding pupils, including what they already know; understanding history, including what is worth teaching; and understanding the resourcing available to support conceptual development, including how we direct and spend attention.

## Chapter 6 Conclusion

So many of the features of our life are made available to us through our ability to represent. However, when we give symbol or representation to our response to the world, we raise the possibility of mistaking our representations for our response. We may even conflate features of the phenomena we are responding to with the nature of our representations or with the act of representing. In a way, the intimacy between responding and that to which we are responding makes perfect sense. Indeed, letting one thing stand for another is the mechanism by which discursive communication is viable. Like an actor in character, representation succeeds in so far as we can forget it is performing a role and is not the thing represented. Taking the representation as the meaning, that is, as the responsiveness it represents, is what makes it a representation in the first place. The problem is that the finer margins of gain in teaching rely on being sensitive to the underlying mechanisms by which representation stands for responsiveness, and understanding how responsiveness, in turn, is responsiveness to something in the world. The teacher's role is to support pupils to create helpful responsiveness currently unavailable to them. As such, a teacher's interest goes beyond relying on the fact *that* one thing stands for another to understanding *how* it does so.

One challenge is that once initiated into language use it may be difficult to imagine words as inherently meaningless. The role of the conceptual, of attributing meaning to representation, may be more easily expressed if seen in contrast to examples in which the representation involves a material component beyond a squeak or squiggle. So, for example, a banknote's

value to me, as it lines my pocket, differs from its value to a bird lining its nest, because of my capacity to make the banknote represent something. Or, without the activity of representing, one person's flag may well be another person's rag. As physical material, the cloth may help keep us warm or shaded, but we cannot use the cloth alone to wrap ourselves in a national identity without conceptual knowledge.

It may be difficult to remember the inherent meaninglessness of most squeaks and squiggles if you do not work in the business of conceptual meaning making and see daily reminders such as how the concept 'teacher' for my niece (Chapter 4) or 'harvest dependence' for Sarah's pupils (Chapter 5) only means what it means by virtue of the concept-user's responsiveness to the implicit inferential relations taken to be pertinent in the myriad of occasions in which the concept occurs. And as a teacher, working to change individual's meaning-making, it is not simply a kind of 'exposure to' the world that turns a piece of paper into a banknote, and a cloth into a flag, or the word 'teacher' into something that can stand in for responsivity to a cluster of implicit inferential relations. The encounters have an inferential dimension. Hence, to learn either concept ('teacher' or 'harvest dependence'), to learn any concept, is to encounter those occasions when the implicit inferential relations are in play and to become responsive to relations occurrence and applicability.

Once responsive, we may behave as if the words themselves have inherent meaning, we may have the impression that our statements carry meaning effortlessly, that is, without the underpinning activity of responsivity to implicit inferential relations, but this is illusionary. A collection of shapes marked on a page for example, or a series of sounds vibrated in the air, is only a husk, the external material trace of meaning-making activity, a mental activity which is simultaneously personal and communal, individual and collective. Take away the implicit inferential activity and the squeaks and squiggles are conceptually meaningless. I undertake the activity of making my words meaningful in each and every discursive activity. The impression that I do not, or that I imbue words with meaning as a one-time act, or through some non-inferential and wholly explicit mechanism is simply an expression of how good I am at linguistic meaning-making, it is not an expression of what conceptual meaning making is. Squiggles and squeaks are not representations until they are made to represent. They are unintelligible without the accompanying implicit and inferential activity that makes them stand as representation.

A simple sense of correspondence between word and world, or a *single-ply* assumption of meaning, may prove comfortable, even serviceable, in everyday life as a low-resolution picture of conceptual understanding. In everyday life we can go about our business as if the appropriate responsiveness to what we take to be the implicit inferential relations between phenomena in the world are in place, until they are not. Teachers, however, are in the work of developing this responsiveness in their pupils, not assuming it. I have argued that if we forget that the 'standing for' in representation entails an implicit inferential responsiveness we risk tilting towards an unhelpful knowledge-type distinction that may limit teaching as we come up short trying to work out how to unite something that is not best construed as divisible in the first place.[73]

Our responsivity to inferential relations in the world that constitute our conceptual meaning can be more or less rich, but our implicit inferential responsivity cannot be absent and then present in our conceptual knowing. The insight that the activity that *constitutes* our representation is the same activity by which we *use* our representation may have few repercussions in everyday life, but it has profound implications in education. Using a *two-ply* account of meaning, our responsiveness, and therefore our representation, is understood as becoming increasingly enriched along a continuum of meaning. The inferential *conceptual how* theorisation enables teachers to understand that while the content and the activity of their lessons can be thought of as different on a macro-level, teachers are leveraging a responsiveness to implicit inferential relations that is not best characterised as divisible on the micro-level. Without a *two-ply* account of meaning, teachers may be attempting to teach what they mistakenly take to be two *actually* separate knowledge types whose nature is misunderstood.

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[73] Three things I am **not** arguing for: In using Inferentialism to talk about concept formation in education I have not argued that our representation is only a responsiveness to implicit inferential relations. I have argued that new light is shed on how we think about education if we understand there is never conceptual meaning without a responsiveness to implicit inferential relations taken to pertain between phenomena. I am not denying that it can be more challenging to develop responsivity to some relations between phenomena in the world than others, the meaning of some concepts can be very complicated indeed, and the networks of relations believed to be in play when answering some questions can be more challenging than others. By using the term 'representation' and 'represents' I am not saying that the only function or use we put language to is representation. I have said nothing about the different language performances that we engage in. I have used the term 'representation' to talk about how our squeaks and squiggles become more than just things, how the marks on a page or vibrations in the air are meaningful. I have discussed the inferential conceptual how for the purposes of education.

Theorisation entails seeing and accounting for the limits of truth in intuition, an uncomfortable probing beneath the easy appeal of appearances. In what ways is a knowledge-types distinction intuitive and appealing? On a very basic level, it may be that our minds make an object of concepts when we feel we have somehow taken possession of them or brought them into our cognitive repertoire. It is as tough we have grasped some-*thing*. To this we add the experience of trying to work something out, a puzzling *activity*, using knowledge that we feel we have grasped. The notion that we learn facts or *substantive* knowledge, and *then* do something with it - deploy it, rearrange it, evaluate it, using other knowledge that informs this intellectual doing, corresponds well to the impression that we cannot manipulate or transform what we know without initially knowing something in the first place. Furthermore, pupils' thinking seems most readily revealed when they are asked to animate their knowledge, to put what they know to use in response to some challenge, rather than when they are asked to simply recall what they have memorised or just been told. It is plausible to assume that it is when a teacher explicitly asks for reasoning that they most readily see pupils' disciplinary or second-order knowledge in action. Thus, we *have* cause to think of a knowledge-type distinction capturing the facts we know on the one hand, and what we do with those facts in argumentation and expressive claims on the other. If a teacher values both the 'body and form' of their discipline, then a knowledge-type distinction gives them a language with which to think and talk about their practice. But from Inferentialism we have an explanation of what conceptual knowing consists in - a form of reasoning in the first place – and so we are given pause for thought. What conceptual knowledge can seem to be like to us as we experience it (knowledge of two differing types) need not be a good description of what it is from the perspective of the inferential *conceptual how*.

There is clearly a place for low-resolution, macro-level distinctions that help us to say something about our subject (history) and our pedagogical choices. As we saw in the example of the execution of Charles I in Chapter 1, the teacher needs to split, analytically, the lesson content from the activity from the designated learning purpose in order to think effectively about how they can leverage pupils' encounters and influence their concept formation. Teachers need to know what disciplinary knowledge matters and what it entails, that is, how it differs from novice ways of taking the world to be, and this involves teachers being able to sequence content and activity combinations in a way that enables them to elicit, interpret

and enrich pupils' responsiveness. Educationalists do not need to jettison describing lesson segments or lesson aims as geared towards attending to different knowledge-types, meaning analytically characterised aspects of knowledge. But teachers do need such low-resolution analytical distinctions to sit firmly on top of a secure, high-resolution consideration of the *conceptual how.* The nature of conceptual meaning challenges us to think again about distinctions separating *what* from *how,* or *entity* from *act,* or content from activity, or knowledge of the past from knowledge of the disciplinary processes of historical practice. Teachers can benefit from macro-level, low resolution distinctions between knowledge-types to help select foci and design content and activity combinations, *if* they remember that a separation of conceptual knowledge into what we know and what we can do with what we know is best construed as a macro-level convenience to describe our teaching approaches and subjects, it is not a micro-level description of what conceptual knowledge is or what it entails. The *conceptual how* makes available considerations that could enable teachers to help learners who seem less responsive from falling further behind their more responsive peers.

What sorts of classroom considerations become more clearly available with an inferential conceptual how? The Inferentialist insight suggests that it is not the case that *once* our concepts become meaningful our reasoning can begin. Rather, the Inferentialist account of meaning suggests that our 'squeaks' and 'squiggles' are meaningful to the extent that they are constituted by implicit inferential responsiveness to the physical and social world. According to Inferentialism then, we do not set about reasoning upon a stock of words (or facts) using a knowledge separate from that activity involved in understanding those facts or concepts. According to Inferentialism, those facts or concepts are not comprehended through activity assumed to be preliminary to, or distinct from, our responsiveness to inferential relations. While we can go on to see a myriad of relations between the things we represent, to represent anything in the first place was an act of relating because a representation is a representation in so far as, and in the ways in which, it is constituted by responsiveness to implicit inferential relations.

The teacher's ability to attend to the implicit inferential relations is important, especially if there is a propensity to take our explicit utterances as unproblematically meaningful. Within an Inferentialist account, educationalists can appreciate how the practices that may seem

sufficient for everyday conversation, or sufficient for those already holding domain specific knowledge, are not adequate for the purposes of education. In light of Inferentialism, I argue that educationalists ought to be wary of behaving in three ways, 1) as if the words and concepts themselves are intrinsically meaningful rather than being alert to how responsiveness to implicit inferential relations constitute their meaning, or 2) as if the derivation of meaning is a straightforward matter of definitions understood or not understood rather than occurring along a continuum of more or less appropriate meaning, or 3) as if responsivity to implicit inferential relations can simply be made available through explicit utterances naming the relations rather than encouraged to emerge in learner responsiveness through creating the conditions of responsiveness. Educationalists need to be much more cautious about assuming that the sharing of relations stated explicitly is equivalent to the independent forging of relations from the possibilities implicit in the world.

## Next steps: Implications of Inferentialism for teaching

I have argued that a consideration of the *conceptual how* can help educationalists to navigate what Muller and Young identified as twin dangers in curriculum theory, that of over and under-socialised knowledge (Young and Muller 2010, Young, et. al 2014). For the purposes of education, a *two-ply* theory of conceptual meaning accounts for knowledge and concept development without either losing sight of the world beyond the individual's cognitive *activity* or reducing knowledge to an *entity* existing beyond knowers and their knowing activity. This is a theorisation with clear classroom implications. When the nature of conceptual understanding is considered as inferentially articulated, teachers are engaging in two pivotal activities. They are listening out for pupils' explicit utterances as indicative of the qualities of pupil responsiveness to implicit inferential relations at play in the knowledge to be learned in order to respond to these in ways that move the pupils' understanding on. Crucially, they are *also* planning for the responsiveness to *implicit* inferential relations that give words their meaning. There are limitations to what can be achieved if teachers imagine that they are teaching for the reasoning that can be done once words have their representing function for it is reasoning which gives words their representing function. For the educationalist, getting beneath the explicit utterances from what is said to what is meant applies in both the case of

teacher's words to students and teacher's understanding of students' words. Teaching and learning stand to be enriched by a better understanding of the nature of representations (words and concepts) and how they mean anything at all, that is, by sensitivity to what I have called here the *conceptual how*.

I began by locating my motivation for this thesis with my concern over the shortfall between my student-teachers hopes for their pupils' learning and the learning outcomes realised, and between my own hopes for my student-teachers' learning and the learning outcomes realised. The teaching implications of incorporating the *conceptual how* into knowledge theorisation as explored in this thesis apply as much to the design and teaching of my history teacher education course as they do to the work of history teachers. Next steps for the knowledge shared in this thesis include incorporating these insights into my professional practice and looking to share them more widely through publication. I believe the ideas considered in this thesis provide potentially rich lines of enquiry for future research, most obviously, empirical research exploring what we can learn about *when* to make implicit inferential relations explicit for whom, why then and how.

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# Appendix 1

Charles I being executed outside the Royal Banqueting Hall in Whitehall, London. Engraving by C.R.V.N, circa 1649. National Portrait Gallery, London.
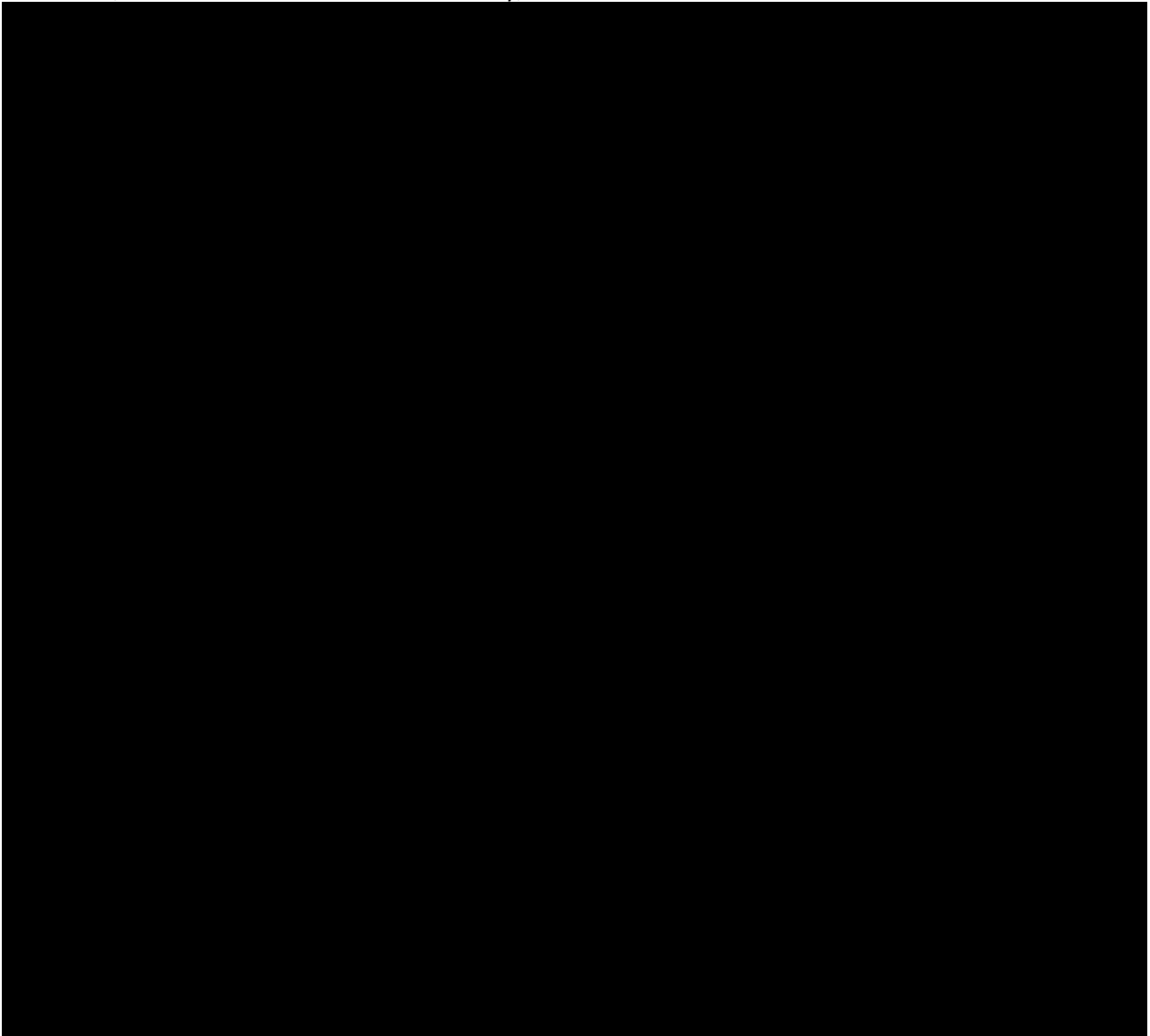
# Appendix 2

A knowledge *attribute* distinction likely contributes to a 'knowledge-skills' distinction, however, authors have taken exception to the notion that second-order knowledge simply refers to the reasoning activities that we ask pupils to do with information. For example, Chapman (2016:228-9) takes up what he sees as a conflation of a 'knowledge-skills' distinction with history's two types of knowledge when he writes,

> This distinction – between first- and second-order knowledge and understanding – does not map onto the overused distinction between 'knowledge' and 'skills', although it has often been understood in these ways both by critics (Cain and Chapman, 2014) and by some practitioners of the 'new history' (Lee, 2014). Second-order knowledge and understanding is not generic and not something that can be mastered merely by practice as skills can be; rather, second-order understandings are developed through reflection and through historical problem solving, processes essential to *knowledge building* and *knowledge organizing* more generally (Lee, 2005b).

Notice how Chapman (2016) is not objecting to the ascription of different 'attributes' to the knowledge-types. Chapman (2016) does not appear to be taking exception to the ascription of *entity-like* attributes to *first-order* knowledge and *act-like* attributes to *second-order* knowledge. Rather, Chapman seems to be calling out the potential loss of the subject-specific nature of *second-order* knowledge and he is taking issue with imagining that the cognitive *doing* entailed in second-order knowledge is somehow routine or mechanised rather than complex or contingent and requiring judgement and problem solving. Chapman (2016) is not alone. Multiple authors complain that *second-order* concepts, or *disciplinary* knowledge, is frequently misconstrued as historians' *practice* defined too narrowly as a routine and genericised process that can be atomised and hollowed of informed adjudication (Counsell, 2000; 2011; McAleavy, 1998). Whether student teachers operate with a 'knowledge-skills' distinction or a 'substantive-disciplinary' distinction or not, the fundamental 'attribute' distinction separating first from second-order knowledge remains. One type of knowledge is *entity-like* while another entails an *act-like* attribute.

# Appendix 3

Figure 2: 'Everyday' preconceptions connecting ideas about historical accounts and historical evidence.
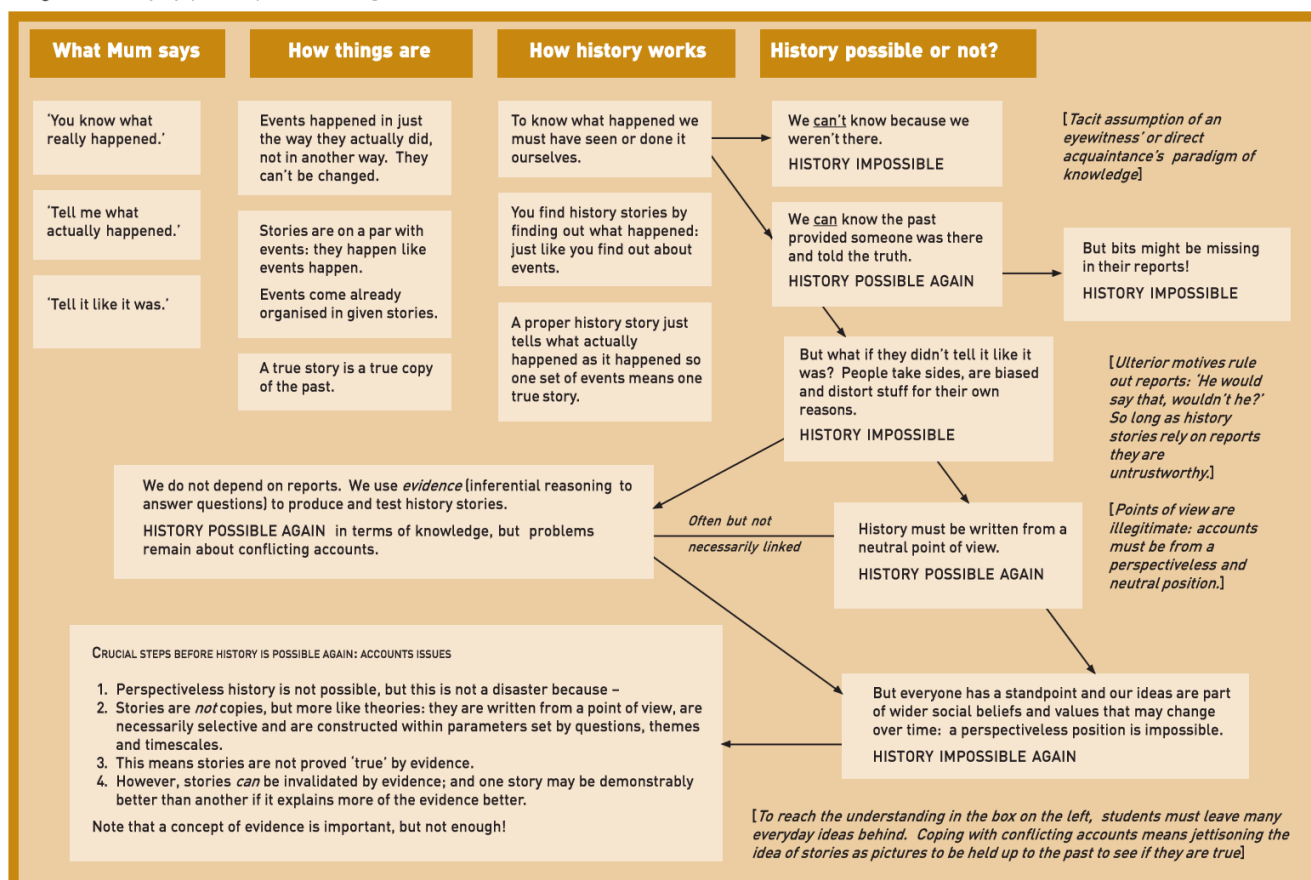


Lee, P. & Shemilt, D., 2004. 'I just wish we could go back in the past and find out what really happened': progression in understanding about historical accounts. *Teaching History*, (117), pp.25–31.

**See also,**

Lee, P. & Shemilt, D., 2009. Is any explanation better than none? *Teaching History*, (137), pp.42–49.

Lee, P. & Shemilt, D., 2003. A scaffold, not a cage: progression and progression models in history. *Teaching History*, (113), pp.13–23.

Chapman 2015 Thinking Historically Progression Map
http://www.pearsonschoolsandfecolleges.co.uk/AssetsLibrary/SECTORS/Secondary/SUBJECT/HistoryandSocialScience/PDFs/History2015/Thinking-Historically-Progression-Map-%281%29.pdf

# Appendix 4

Students understand and deploy the concept of *usefulness* without much difficulty. We would say they understand it, but students can struggle to see that a source revealing anti-Semitic Nazi propaganda is not 'a good thing' but it may still be *useful* to a historian investigating Nazi views and messaging. For many young students the word *useful* in everyday parlance has positive connotations that are inappropriate for the term's technical use in history and so *useful* as a qualification in source analysis needs to be decoupled from such value judgements. Some misconceptions related to the disciplinary understanding of the concept of *usefulness* can be easily addressed, others are not resolved so readily. When teaching Key Stage 3 students (11-13-year olds) about the concept of *usefulness* in relation to historical sources, it emerges that a key obstacle to their development is the failure to understand that *usefulness* is not an inherent feature of the source itself but is relative to the questions the historian asks of the source. The typical medieval church doom painting, for example, is *useful* for revealing medieval religious beliefs but arguably less *useful* for telling us about a place called hell (Le Cocq, 2000). This can be a tricky concept for young students to employ. As a history teacher repeatedly facing this same dilemma year on year, I often found myself holding up my large board marker and asking, 'How *useful* is this pen?'. Students chorus in unison, 'Very useful'. At which point, and not very gracefully, I attempt to thrust the pen up my nose, declaring through the tears that it turns out not to be that *useful* after all, that is, for picking my nose. We then move on to thinking about chocolate tea pots. Concern for the question, '*Useful* for what?' is crystal clear whatever the child's prior understanding and the example is deliberately ludicrous to hopefully enable it to take hold in pupils' minds and unsettle a prevalent misconception. Pupils need to see how the question changes the answer. Unpicking the example, students invariably read into my question about the *usefulness* of the board marker the assumption that I intend to write on the board with it, something they have seen me do hundreds of times. Their resultant assumptions about its *usefulness*, extrapolated out to the concept of *usefulness* more generally, seems to be that it is an inherent, self-evident feature of something. A perfectly sensible and serviceable idea in everyday usage but when investigations are more nuanced and the issues at hand more complex than understanding that a pen is good for writing on a board, assumptions serviceable in the simple and

straightforward scenarios have a way of resulting in confusion when transposed directly over into historical questions. The *use* to which the source information, for example, is being put, must be scrutinised and not assumed if one is to determine its *usefulness*. Students discarding sources on the merits of assumptions about inherent and self-evident worth will not do. Pupils' concept of *usefulness* cannot be left implicit and inadequate to the task at hand, it must change.

## Appendix 5

The field of conceptual change has been particularly rich in science education where there are thousands of articles reporting the difficulties pupils have in understanding science and suggesting interventions to overcome conceptual difficulties (Duit 2009). For example, rather than exploring whether pupils' answers were correct or incorrect, Rosalind Driver (1994) and her colleagues used classroom focused questions to assess pupil misconceptions. DiSessa (2014) maps the conceptual change field, summarising the fault line between 'coherence' and 'fragmented' views of concepts and their relevance to ideas about conceptual change and pedagogy. For example, along one strain, Driver (1983, 1989) compared learners' naïve theories to how scientific theories change over time. For Driver (1983, 1989), conceptual change might be achieved by unsettling pupils' *coherent theories* through introducing counter-evidence or 'cognitive conflict' (Posner, Strike, Hewson, & Gertzog, 1982). Others, DiSessa (2006) for example, have suggested that children's ideas are '*fragmented*' and are more an amalgamation of partial understandings. Rather than 'misconceptions' to be overcome, these researchers suggested that learners' ideas are sometimes partially right, 'synthetic concepts', more like mixtures of intuitive understanding and learning, including learning at school.

# Appendix 6

Working in the United States of America, though inspired by the research in England, Wineburg (2001, 2007) has added significantly to this research focus. He has used 'think aloud' protocols and qualitative data to record the processes that experts and novices engage in when reading historical texts. Wineburg's research shows how experts and novices approached the reading of historical sources quite differently. Specifically, Wineburg showed how the peculiar ways in which people with different levels of historical expertise read sources, reveals different epistemic beliefs and heuristics, and that these characteristics, and not the recall of historical substantive information alone, is what makes the difference in quality between experts' and novices' answers. Reporting on a body of research in 2001, Wineburg describes how novice and expert historical thinkers, despite holding comparable amounts of factual information about the material in the sources, still read very differently, 'for the students, the locus of authority was in the text; for the historians, it was in the questions that they formulated about the text' (Wineburg, 2001, p. 77). Again,

> For students reading history was not a process of puzzling about authors' intentions or situating texts in a social world but of gathering information, with texts serving as bearers of information ...Before students can see subtexts, they must first believe they exist.' (Wineburg, 2001, p. 76).

In the study reported in 2007, novice historical thinkers read historical texts, for example of the USA President Harrison's 1892 declaration of the Columbus Day national holiday, as offering information about Columbus. In contrast, expert historical thinkers, saw the text as an opportunity to engage in contextual thinking about 1892 not 1492 and to puzzle tentatively about how and why the source came into being. Describing the weaker thinking demonstrated by historical novices, Wineburg (2007:129) writes, 'It is almost as if the Columbus button in memory is pressed, and the document provides the green light to erect a soapbox and preach the gospel of our age.' Experts, however, positioned themselves not only to judge but also, paraphrasing, to learn by resisting first-draft thinking and its flimsy conclusions. Wineburg uses two ideas from psychology to understand the distinctions in thinking, the 'availability heuristic' and the 'spread of the activation effect'. Wineburg demonstrated how the epistemic models that children apply when construing the

implications of the historical content and activities that they are presented with, are appropriate to other contexts but not to the historical one. Literature beyond the English history education community has continued to research the epistemic nature of historical understanding (Maggioni et al., 2009; Stoel et al., 2017).

# Appendix 7

Enquiry can still be thought of in a number of ways in history education in the UK.

(i)    Enquiry as historians' knowledge-making process.

The principle of constructing an account of the past in response to a specific question only makes sense if knowledge of the past is problematised and if the past is distinguished from the stories we tell about it. All history is constructed from partial remnants left behind intentionally and unintentionally by those living before us (Paul 2015; Bevir 1994; Megill 2007). Enquiry makes history possible and is therefore an important object of study on history curricula. Communities still commemorate and mythologize the past; however, methods of enquiry replace memorisation and veneration in disciplinary history (Magill 2007). It is through understanding the conventions of acceptable scholarship that historians are thought to rely on the cumulative wealth of the community within which they work (Young 2008).

(ii)   Enquiry as educative device.

It is a mistake to think that the enquiry approach simply entails learning to engage in the historian's enquiry process, for the educative approach differs. Historians further the frontiers of existing knowledge through enquiry. School enquiry shadows some aspects of historians' enquiry but also functions differently. Pupils enter into a historical debate, or construct and critique historical accounts, not to contribute to the field but because understanding the field (first and second order knowledge) involves such participation. In the first instance, pupil enquiry is not to move scholarship forward, but to move the individual forward. From the discipline of history, we see the past as a construct in the present, and so knowledge of the past is the result of our historical enquiries, however, from the nature of learning conceived as conceptual change we see how the individual's knowledge is made visible by its use. Enquiry-based learning is an educative process through which the novice encounters and engages with the object of study (Dewey 1910).

Seixas (1993), working in Canada though heavily influenced by the English tradition, captures the distinctiveness of school-based historical enquiry well. He explains that academic history (in the discipline) and school history (in the classroom) are both communities of enquiry which

focus on history as meaning-making about the past, however it is a mistake to either conflate the two or to imagine them as inconsistent. On the one hand, if one sees no difference between the two, then school history loses its pedagogical power through inattention to the needs of novice history learners as they fail to develop the conceptual apparatus and knowledge needed to make sense of the past historically. For Seixas, 'obvious reasons why most students cannot converse directly with most of the writing of historians themselves: the vocabulary is too difficult; students lack the assumed prior contextual historical knowledge, let alone the contextual historiographic knowledge; the arguments are too complex and multifaceted; and so on." (1993:314). Seixas claims that treating pupils as if they can simply engage in historical enquiry, as in the academic community, results in their 'relativistic ignorance' since anything goes because they do not yet have the means to participate in the disciplined practice. On the other hand, if the two communities of enquiry are thought to be completely different such that pupils just learn facts, then school history loses its disciplinary nature by becoming overly inconsistent with the academic community. Seixas claims this results in pupils gaining 'dead knowledge' because, again, they do not have the means to participate in the disciplined practice.

(iii)    Enquiry as an organising principle in curricular design.

If the nature of learning is best thought of as a process of conceptual change, then there could be benefits from a pedagogical device that takes a discipline's structural or second order concepts as an organising principle. While complementing rather than excluding other organising principles of curricula design - time, place, topic or theme - enquiry also pin-points specific second-order features of historical thinking (Nakou and Barca 2010). On this basis, enquiry's calling forth an answer to a worthwhile question, an answer that is *one's own*, in some meaningful sense, is thought to provide a sure footing *from* which, *through* which, and *to* which the educative project can proceed.

# Appendix 8

If we understand Lee's (2005) knowledge *orders* or knowledge-types as meaning that one set of beliefs about how the world works *can be read off* another set of claims *about* the past, it is possible to come close to a *conceptual how* interpretation of his research findings. According to a 'what concepts are' or a *conceptual how* reading of Lee's work, the *second-order* **of** knowledge **constitutes** the *first-order* **of** knowledge – an *under-ply* of implicit responsivity to the world constitutes a *top-ply* of explicit utterance. But, whilst a reading of the knowledge-type distinction as referencing the *top* and *under-ply* of conceptual meaning aligns well with the origins of the knowledge-types distinction in history education, I do **not** advocate adopting this use of the terms. It would be exceptionally risky to use the same language to talk about different perspectives when the *conceptual how* is largely unexamined in the history education literature and when different ideas that are currently meant by the terms *first* and *second-order* or *substantive* and *disciplinary* often conflate diverse considerations. Our existing lack of discussion of the *conceptual how* and our unwitting slippage between pedagogical, subject, and *conceptual how* perspectives, will not be helped by compounding different readings of the same terms. Furthermore, Lee and others were not informed by a *conceptual how* perspective as they sought to articulate what they saw. Whilst the history education community is indebted to these early theorisers for the contribution they made articulating the knowledge-type characterisation, this theorisation, as is the fate of any theorisation, has also suffered from limitations.

# Appendix 9

Derry (2013) identifies Vygotsky's preference to understand the development of concepts as proceeding through activities in which the concepts function meaningfully, for example, Bakker and Derry (2011:12) write,

> Vygotsky stresses this point when he spoke of "a system of judgments" and argued that the idea of "general representations" is inadequate to express what a concept is in reasoning.... he argued that:
>
> 'we must seek the psychological equivalent of the concept not in general representations, . . . not even in concrete verbal images that replace the general representations—we must seek it in a system of judgments in which the concept is disclosed. (Vygotsky, 1998, p. 55)

Bakker and Derry (2011:12) elaborate Vygotsky's ideas further,

> Hence a concept is not first learned formally and then applied, but develops according to the domain of activity (including reasoning) in which it functions....it is possible to operate with a concept before fully understanding its meaning, for example for a child to begin to operate with complex structures before fully grasping simpler ones. The reason for this is that knowledge is not gained simply by an accretion of elements starting with the most simple....The meaning of any concept is not accessible immediately, all at once, but arises out of a developmental process involving a fine-tuning imposed by the norms governing application of concepts, namely the inferential relations that form the content of the concept in the first place. Likewise any application of a concept involves and draws on a whole series of judgments and actions, whether or not the concept user is explicitly aware of the judgments and actions involved.

Bakker and Derry (2011) explore what is entailed in privileging an inferentialist teaching approach using lessons with two sixth-grade classes (age 11). The lessons stimulated informal inferential reasoning with the statistical concepts of center, variation, distribution, and sample in connection to each other using tasks around a story of a fish farmer wants to know if genetically engineered fish grow bigger than normal fish. Bakker and Derry (2011:'8') ask, 'But should they learn the key statistical concepts before they can reason with them, or should they first be invited to draw conclusions? Or is there some intricate interplay between

learning to reason and developing concepts?'. They go on to describe the following challenge brought into sharper relief through an Inferentialist lens,

> 'The challenge to avoid inert knowledge—knowledge students have learned to reproduce but cannot use effectively (Bereiter & Scardamalia, 1985; Whitehead, 1929).... Even if students have learned the main statistical concepts and graphical displays, they often fail to use them to solve statistical problems. The best documented problem in this area is that students who have learned the arithmetic mean tend not to use it for comparing two groups (Konold & Higgins, 2003; McGatha, Cobb, & McClain, 2002; Pollatsek, Lima, & Well, 1981). In other words, we expect students to use the mean (or any other concept) within a process of reasoning, but they often use it purely descriptively or just calculate it out of habit. Mokros and Russell (1995, p. 37) go so far to argue that "Premature introduction of the algorithm . . . may cause a short circuit in the reasoning of some children." The challenge is therefore to stimulate inferential reasoning in such a way that students naturally use the mean and other statistical concepts, for example, when comparing groups.' (2011:'6-7')

'Inert knowledge' in history

A university-based student-teacher activity helps illustrate a history example of what Bakker and Derry (2011) refer to as 'inert knowledge' where relevant concepts are not being deployed 'naturally' to inform reasoning. Through it, I suggest that teaching which relies on giving representations and opportunities for the use of representations may be responsible for producing learning which is limited in its versatility and reach. For a few years I have shown STs a video clip produced by the Obama administration and hosted on the White House's official website during their presidency. It shows a soiree in which the first-couple and their guests enjoy the performance of a hip-hop song about Alexander Hamilton. I ask the STs what history they could explore through this clip. Suggestions such as slavery, migration, the War of Independence all receive attention. So far, no ST has suggested that they would explore features of the Obama presidency. In some ways, that is not unusual. Someone might protest that it is unfair to expect them to suggest the Obama presidency because it is too contemporary for school history, or that the content was so compelling that history lovers were disadvantaged, absorbed in what the song was about rather than what the video was about. In another way, it is very unusual. Why would history graduates drilled in the

importance of considering the nature, origin, and purpose of a source, fail to apply that knowledge in this case? Rather than being struck by the official branding and the scenes of the relaxed first-couple with adoring guests, pertinent aspects of my ST's historical knowledge lay fallow. Had I given them a typical source question from the 14-16 year old national examinations, no doubt they would have trotted out their source formulae but in this instance, what that formulae was meant to represent did not inform how they interacted with the world. What does it say about the qualities of their knowledge when it does not come to bear on the question I posed? My STs should not need to *remember* to think about the nature, origin, and purpose of a source, they should not be able to forget. Teachers evaluate pupils' learning constantly and continue to be struck by how little has been learnt of what they believe has been taught. Counterproductively, this can lead teachers to resort to further scaffolding of pupil learning and ever more explicit teaching when attending to the responsiveness to the implicit inferential relations of the concepts might result in stronger disposition to make moves in compliance with the rules determining the game.