

The knowledge illusion:

who is doing what thinking?

Focusing on students' attempts to explain the relative significance of different factors in Hitler's rise to power, Catherine McCrory explores the vexed question of why students who seem able to express necessary historical knowledge on one occasion cannot effectively reproduce it on another. Drawing on a detailed analysis of what it actually means to 'know' something, she plans a series of accessible activities allowing as many students as possible to secure essential knowledge for themselves, rather than simply relying on the authority of the teacher who told them. She goes on to explain how careful diagnosis of the gaps between what students say and the reasoning that underpins their utterances can help teachers to decide where they can usefully 'give' students particular insights and where the students need to 'arrive at' those insights through their own cognitive labour.

Most of us have taught what we thought to be a pretty good lesson sequence and then been disappointed with how little our students seem to have learned. Or perhaps the lessons did not feel quite right but we struggled to identify why or what to do about it. Such experiences throw up a number of questions with which the history education community has grappled for many decades: How does knowing facts relate to understanding the import of those facts in answering history's 'what', 'how', and 'why' shaped questions? Are there different *types* of knowledge in history and, if so, how do they interact and develop?

One such knowledge-type distinction, common in the British history education community and influential internationally, is between substantive historical knowledge (knowledge of what happened in the past) and second-order knowledge (the conceptual and procedural knowledge that make the study of the past possible).¹ This distinction gives history teachers important ways of thinking about variance in their students' achievements, but my focus in this article is on the difficulties experienced by students who *appear* to hold relevant knowledge about the past but cannot deploy it effectively. Such difficulties can be seen, for example, when exam candidates deliver a narrow recitation of substantive information that is *related* to, but not *responsive* to what was actually asked.²

I faced this problem as I re-worked a short sequence of causal reasoning lessons through which I wanted my Year 10 students to learn to explain Hitler's rise to the Chancellorship. The sequence was informed by the standard exam question, 'Was the economic crisis the main reason Hitler became Chancellor?'³ In sharing this example I offer tentative ideas about what we might mean when we claim that students *have* historical knowledge. My interest is not in any particular type of knowledge, nor am I making claims about the importance of one type over another; I am seeking to delve a little deeper into what kind of thing knowledge actually is.⁴ A clearer appreciation of the nature of knowledge itself might shed light on why students vary in terms of the types and sophistication of the knowledge that they develop and offer implications and teaching strategies worthy of classroom experimentation.

The original lesson sequence: finding students' starting points

My initial sequence centred around a three-circle Venn diagram card-sort, illustrated in Figures 1 and 2, in which students became familiar with relevant substantive knowledge about Germany in the 1920s/early 1930s and which imposed a causal structure on the mass of detail by using three analytical categories: economic, political and 'Hitler'.⁵ Most of the essays written as a result included three well-informed paragraphs, rich in substantive detail and each with a good basic structure, but my students could not *use* their experience of the card-sort to explain how the factors combined and eventually culminated in Hitler becoming Chancellor, nor could they make a case for the relative importance of each of these factors.⁶

In response to the weaknesses in my students' essays I could have revised the sequence in a number of ways; for example, by creating more alluring activities, offering more foolproof writing structures or providing ever more explicit success criteria, all of which have their place.⁷ The potential success of any revision, however, rests on the teacher's diagnosis of the problem, on their vision of what is possible and desirable, and on their ingenuity in creating learning experiences capable of addressing the issue identified.

In my appraisal, there was nothing wrong with my Venn diagram card-sort. The problem was that I thought it would *suffice*. While categorising causes is one essential stepping-stone

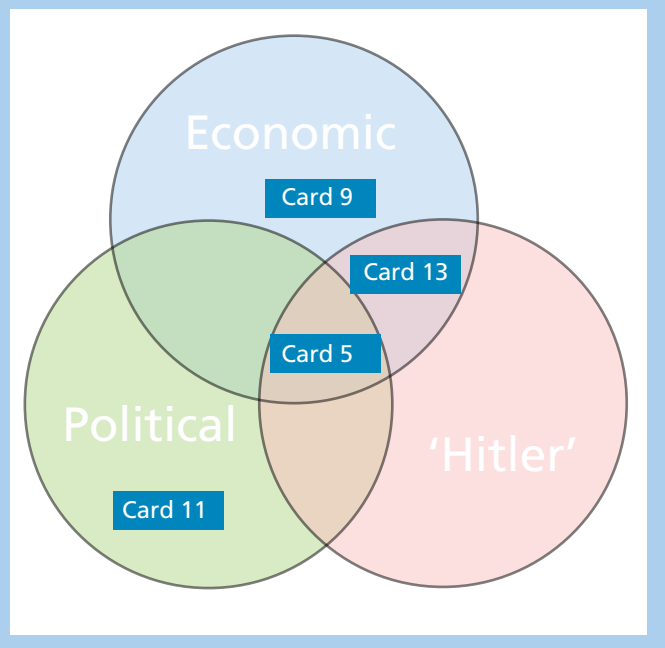
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Figure 1: The principles informing my creation of cards for the Venn diagram activity

The cards that I designed were intended to achieve three objectives:

- a) to offer a comprehensive but basic overview of the relevant information;
- b) to represent all three causal factors that I hoped students would identify when sifting information; and
- c) to provide some content within *each* segment of the Venn diagram and thus allow the students to generate causal arguments. This meant including a number of straightforward cards that obviously belonged within a **single** category, such as cards 9 and 11; some more challenging statements that belonged in the overlapping segments between **two** categories, such as cards 2 and 13; and some much less obvious statements that reflected the overlap between all **three** categories, such as card 5.



in explaining Hitler's rise to the Chancellorship, it is not the only, nor even the most important, thinking required. My students neither recognised the point of the question nor the analytical process required to answer it. In asking them to write an essay at this point, I had asked them to 'perform' much too early – it was wasteful writing designed to convey understanding they did not yet have, because I had managed to circumvent the necessary thinking. I had misjudged the students' starting points and the thinking steps appropriate to answering the enquiry question.

Who is doing the thinking and what thinking is it?

As I considered what was needed, it became clear that my students could not simply locate and lift reasons for Hitler's rise (or for the relative importance of diverse causes) from the cards because the cards did not explicitly contain this information. I think that is a *good* thing! My solution was *not* to insert explicit reasons for Hitler's rise into the cards. The task was not intended as a kind of treasure hunt in which the students would merely locate arguments ready for transcription. The point of asking the question was that the students should *generate* a causal argument, not merely remember and (perhaps) make sense of someone else's argument.

The provenance of the argument that they presented mattered. I cared about *whose* cognitive labour had produced this manifestation of knowledge and not simply that the knowledge should be made manifest. The mystery I needed to solve was why the students had not generated causal arguments, since I had specifically designed the cards to contain the details from which such explanation could be constructed. It was not that the students did not have the right substantive details. It was not even that they did not, *in some sense*, 'know' the substantive details. But it was clear that these facts somehow lacked meaning for them *in relation to* this question. My activity would have been adequate for a student who *knew* both the details on the cards and *the implications* of those details *within* an understanding of

how they think the world works – in this case, how students think events in 1930s Germany were and were not caused. In what sense can students 'know' the details on the cards yet not 'know' their implications in relation to this historical question?

What does it mean 'to have historical knowledge'?

If an utterance, such as 'there were many reasons for Hitler becoming Chancellor' or 'the economic situation was the main reason Hitler became Chancellor', is to have meaning, that meaning rests in the underlying reasoning that gave rise to and follows from it.⁸ Students' underlying reasoning can be cut short in two ways; either by students deferring to authoritative testimony without scrutiny or by predominantly thinking of meaning on a representational level, by which I mean that students assume that they understand sentences because they can identify the things in the world to which the words refer.

To take each in turn, if the child's reasoning, and therefore the meaning behind their utterance, is limited to 'because the teacher said so' or 'the exam board values that kind of thing' or 'that's what's on the cards' or 'the smart student said it', then the sense in which they can be said to *know* it, is quite weak. If we think of our words as the expression of a mental undertaking – that reveals how we think the world is and that commits us to certain implications – then our statements are a kind of obligation.⁹ If, 'because the teacher said so' is all that sits behind a student's claim, that student has obliged themselves to the source of knowledge – to the authoritative figure – with limited obligation to their thinking about the referents of their statements and their implications – in this case, the circumstances and events leading up to Hitler becoming Chancellor. What underpins the claim is very shallow indeed.

The second sense in which underlying reasoning can be cut short requires a little more explanation. Take the everyday example of a sentence such as, 'It is red.' This same sentence might mean quite different things when uttered

Figure 2: The cards used in the Venn diagram activity (Round 1)

1 The split between the Social Democrats (SPD) and the Communists (KDP) meant that they spent time attacking each other rather than uniting against the right in the early 1930s.

2 The intrigues that brought Hitler into office rested on the fact that conservatives and Nazis shared many values and the former believed they could control the Nazis.

3 Unemployment soared from 1.4 million in 1928 to 6 million in 1932 (approximately 1 in 3 of the labour force).

4 The Great Depression intensified feelings against the Weimar Republic and paved the way for the collapse of democracy.

5 Diverse groups could unite around general Nazi themes: nationalism, hostility to socialism and the political mess of the Weimar Republic, as well as traditional and family values.

6 The main element of electoral campaigning was the local political meeting. Different things could be promised to different people at a time when there was not instantaneous national media coverage.

7 Hindenburg, under the influence of leading business and army figures, invited Hitler to become Chancellor and form a coalition government in January 1933. It was hoped that Hitler could be harnessed to serve their needs.

8 Successive Chancellors from March 1930 to January 1933 failed to lead Germany out of economic crisis.

9 Farming was heavily hit after the Great Depression.

10 Industrial production fell by 42%.

11 Proportional Representation encouraged weak coalition governments as it made it difficult for any single party to win a majority and allowed extreme parties to have a voice in the Reichstag.

12 Hitler promised work and bread and to help farmers take Germany out of economic crisis and turn it into an idyllic rural society.

13 Hitler courted army and business leaders, especially in 1932. He held a meeting of big business and reassured them they had nothing to fear from the Nazis.

14 Nazi Party growth in electoral support from 2.6% of the vote (seats) in 1928 to 37.3% of the vote (seats) in 1932.

15 By July 1932 the Nazi Party was the largest in the Reichstag; by turning the Nazi party into the most popular German political party, the voters had helped Hitler to use his political skills to put pressure on Hindenburg to make him Chancellor.

16 Hitler viewed the use of propaganda as a crucial weapon in winning mass support. He believed that the public could be fooled into believing anything if they heard the message over and over enough times, and that most voters 'will more easily fall victim to a great lie than to a small one.'

17 The Munich Putsch changed Hitler from an incompetent street fighter to a shrewd and skilful politician. Hitler changed his strategy to gain power as a result of his experience of the failed Munich Putsch: he would now try to win power through elections and then, as leader of Germany, destroy democracy with a legal revolution.

18 When the US stock market (called Wall Street) crashed in October 1929 the value of shares collapsed and many US businesses were ruined. Americans, suffering from the economic crisis, ended their loans to Germany and demanded the repayment of existing loans.

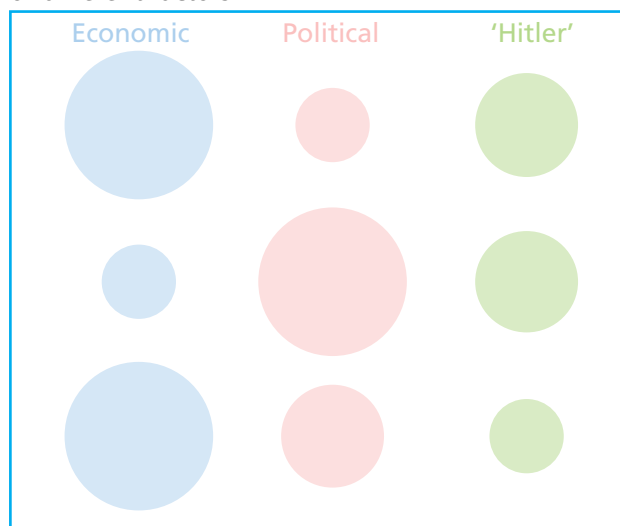
19 Many German businesses were forced to close. They were heavily dependent on loans from the USA.

20 The German Communist Party was the largest in Europe outside the Soviet Union. The Communists had a lot of support from the working class and close links with the Soviet Union.

Figure 3: The benefits of including specific opportunities for students to build up to self-discovered insights

1	Insights that students have discovered for themselves are likely to have increased longevity and greater applicability and versatility in new contexts than 'given' insights that are subsequently reasoned through by the student. Students need to commit to memory a vast range of names, dates and events in history. As far as possible, I wanted to avoid adding what ought to be background capacities to this memory load. I wanted to avoid students having to call up a remembrance of a fact learned – that when you see 'X', a particular kind of question stem, you do 'Y' in response; intending instead that the logic of a sensible answer could come from inside them as mental reflex. A memorised 'rule of thumb' is perhaps better than having no idea how to answer a particular style of question, but why settle for this compromise when many students are capable of so much more?
2	I know with greater assurance that a student has forged the reasoning implied in the insight when they generate rather than merely repeat it. Students might write quite similar arguments by the end of a shared lesson sequence and so it may look as if they hold the same knowledge; but what ultimately matters is whether they can each apply the necessary understanding independently and spontaneously. Teachers can only be sure that students' background capacities have changed when the learning functions in the background position. Given everything the class had shared in this sequence, I could not be sure that I was not just seeing foregrounded reasons rather than backgrounded reasoning. The measure of the background capacity generated through <i>this</i> sequence was not so much in <i>this</i> answer as in what the student would do spontaneously and independently in their next causal analysis
3	When insights are teacher-'given' rather than 'arrived at' by the pupil, the element of creativity is lost. Comprehension of another's thinking is hugely valuable but it is not the same as the act of original generation.

Figure 4: 'What size circles?' Diagram illustrating different judgements about the relative importance of different factors



by different people – by a toddler, for example, or by an interior designer. What is the difference in meaning when the words remain the same? Arguably, the difference lies in the wealth of experience that sits behind them; the wealth of experience that the words represent, that they are symbols of and stand in for. Even if students can ascribe a dictionary definition to each word in the claim – that is, the referent in the world thought to correspond to each distinct element; for example, the man called Hitler and not another man, or the 'thing' called an economy and not another thing – the real conceptual power of the sentence remains quite weak.

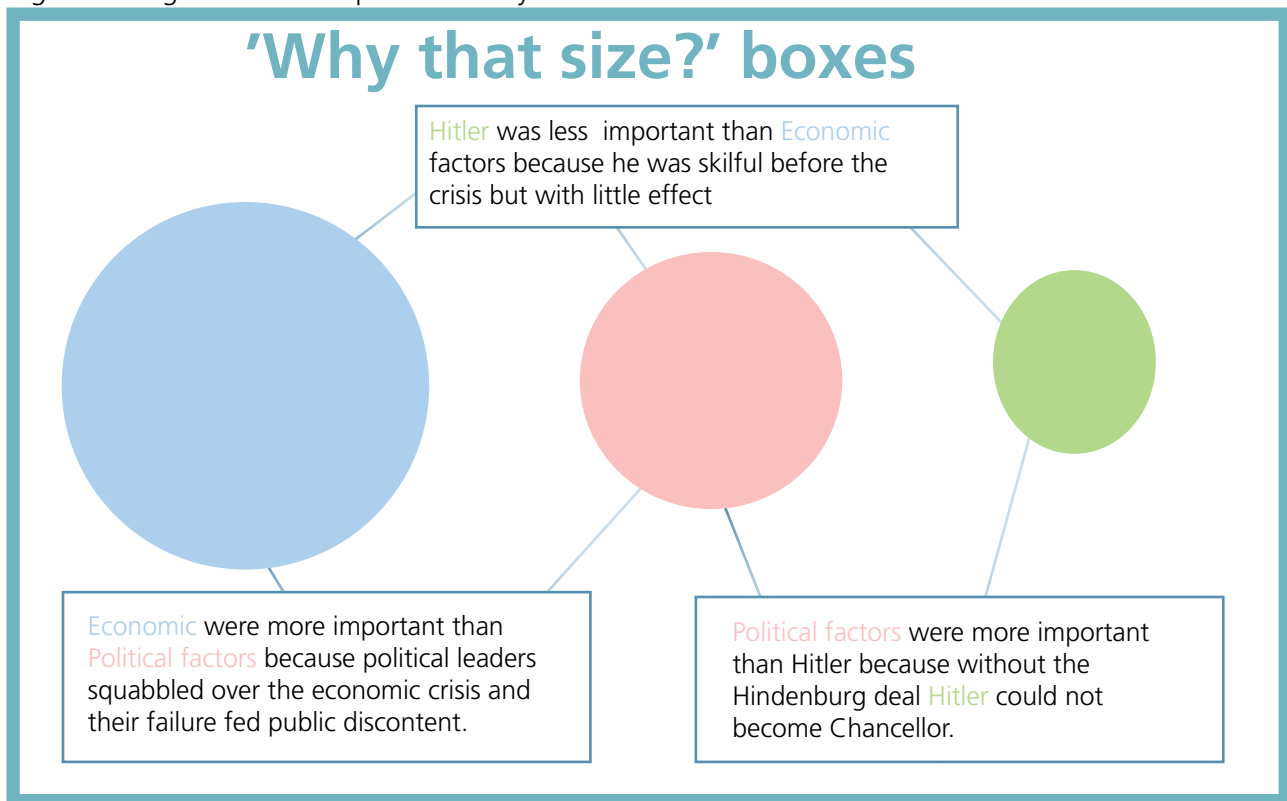
If pressed, students' ability to reason with the antecedents and consequences of their statement will fizzle out quite quickly when the statement rests upon thoughtlessly deferring to authority or capping reasoning at the identification level. The philosopher Wilfrid Sellars captured this underlying mental arena as 'the space of reasons'.¹⁰ It refers to the conceptual judgements implied in any claim, even one as simple as 'It is red'.¹¹ We do not commonly think of such simple statements as entailing reasoning because it goes unspoken and unnoticed;

but the importance of conceptual reasoning becomes clear when we contrast an interior designer's claim 'it is red' with that of a parrot merely repeating what it has heard that designer say. 'Red' functions as a concept when it is used to refer to the colour of red things and is understood as distinguishing those things from others that are green or blue. The development of that reasoning can be seen in the way in which a young child gradually learns the meaning of the word 'kitten' – a process that entails multiple and varied encounters with 'if...then...' reasoning.¹² Imagine the child learns the word first while looking at a picture book that features a young cat. Later, out walking with her father, she encounters a woman in a fur coat and announces, 'Kitten, kitten, kitten'. Her father corrects her. Next, the child strokes her teddy bear, and responds to the soft fur by announcing 'Kitten, kitten, kitten'. Again her father corrects her. The child then meets the neighbour's cat – 'Kitten, kitten, kitten', she declares, and so on, back to the picture book.¹³ The philosopher Robert Brandom contrasts meaning understood as a network of 'if...then...' reasoning sitting behind language (inferentialism) against meaning understood as simply a word-to-world correspondence where meaning is just the thing in the world that the word picks out (a referential or representational model of meaning).¹⁴

According to inferentialism, learning the name for simple concepts such as cats or colours requires reasoning, and by implication, multiple encounters, and diverse contexts, as the child hones their understanding of what can legitimately be ruled in and out by their use of the word 'kitten'. If we include an inferentialist perspective within our understanding of knowledge, any and all concepts (substantive, second-order and procedural concepts) function with a referential and an inferential guise. 'Peasant', 'law', 'revolution', 'cause', 'corroborate' and 'substantiate' each have a short-hand, representational meaning – the word-to-world naming – and a background, 'space of reasons', the bundling and re-bundling of implications of how we take the world to be.¹⁵

Teachers see the gap between words and the speaker or listener's 'space of reasons' every day; they recognise that the same words do not carry the same strength of meaning for every student in

Figure 5: Diagram used to explain the 'Why that size?' boxes



the class because what each student says or writes is a token of a network of inferential bonds that are the culmination of their knowledge to date. This gap matters to teachers because they have to help students both access and alter these underpinning inferential networks and that means understanding the partial and particular role that symbols, such as words, play.

Implications of inferentialism for the history classroom

One crucial feature of these underlying inferential connections is that they typically 'go without saying'; they are assumed norms which are taken for granted and allow our interactions to continue. Imagine, however, how sophisticated they must be within a knowledge domain such as history which is determined by substantive, second-order and procedural knowledge and relies on many unfamiliar, challenging and abstract concepts. Think how easy it is for teachers to mistake shared words for shared meaning in a context where students are routinely exposed to the same vocabulary and phrase patterns but where they integrate those ideas into their thinking in more or less sophisticated ways and with more or less engagement with the referents in the world to which those phrases apply. A pedagogical implication of Brandom's inferentialism is that teachers need to get behind the veil of words and draw out the underpinning reasoning in a way that enables students to see and be held accountable for the commitments and entitlements implicit in what they say.

Teachers can easily misjudge the strength of students' background capacities, not least because it requires binocular vision: one eye on the students' underlying reasoning and one on the reasoning entailed in the intended learning. My Year 10 students heard the words in the question but their understanding of the historical reasoning that it required was largely missing. Their background capacities had led them to

see substantive details as facts that could speak for themselves once selected. By implication, their concept of cause was one that entailed amassing details of what was occurring prior to the event being 'explained' and laying them out clearly on the page. They were not engaging with the economic, political, and 'Hitler' categories as devices to organise causal claims that could be of unequal influence. They interacted with the facts as if sorting coloured buttons into jars, with no conception that information was not simply there to be shuffled for content classification but rather to be interrogated for influence, interconnectivity and importance.

I had ignored the strength of the underpinning inferential bonds through which my students made sense of the Venn diagram activity. They were side-stepping the relevant thinking, not simply because I *let* them, but because my activity *led* them to do this, designed as it was on the basis of my assumption that the words in the question and the details on the cards meant to them what they meant to me.¹⁶ I thought that fleeting inclusions of words like 'cause' and 'relative importance' with a couple of probing questions – 'What do you think?' and 'Why do you think that?' – would unlock the students' thinking.

In the often reciprocal relationship between teaching and learning, I simply *got* back from the students a reflection of what I originally *gave* to them. I had not engaged explicitly with their reasoning about the relative importance of these three causal categories and neither had they. In designing my lesson I had engaged with the thinking involved in sorting information into content categories, so that was all the students did.

Another important issue is that teachers can struggle to teach for the depth of *reasoning* needed to make statements meaningful because they distort knowledge into its representational guise, severed from its inferentially determined meaning. This

Figure 6: Supporting questions designed to direct students towards the overlap cards

Supporting question	Example of student response and the card cited in support
1. Both the economic crisis and Hitler's own actions were important in his appointment as Chancellor but can you make a case for one being more important than the other? Use your Venn diagram. Which cards might help? (<, >)	E>H: Card 14: Nazi Party growth in electoral support from 2.6% of the vote (seats) in 1928 to 37.3% of the vote (seats) in 1932
2. Does it seem as if the political situation is changing because of the economic crisis or is the economic crisis changing because of the political situation? Which cards might help?	E>P: Card 8: Successive Chancellors from March 1930 to January 1933 failed to lead Germany out of economic crisis; AND Card 4: The Great Depression intensified feelings against the Weimar Republic and paved the way for the collapse of democracy.
3. How could you argue that (a) Hitler's actions outweighed the importance of the political situation in bringing about his appointment; or (b) vice versa; or (c) that both were equally important? Which cards might help? (>,<,<=)	P>H: Card 7: Hindenburg, under the influence of leading business and army figures, invited Hitler to become Chancellor and form a coalition government in January 1933. It was hoped that Hitler could be harnessed to serve their needs.

distortion is worth thinking about a little further. Teachers have to pin concepts down in order to identify them clearly. Knowing exactly what it is they are teaching helps teachers work out how to teach it. But if they try to teach concepts as mere statements of fact they are unlikely to equip students with the understanding necessary to make them part of their background capacities. If I aspire for my students to understand the rise of Hitler through a 'web-like' rather than a 'linear' characterisation of causation my understanding of the operation of this second-order concept has been distilled from a multitude of reasoning encounters. An inferentialist perspective would caution against imagining that such terms as 'linear' and 'web-like' can be used as 'reference-like' statements – that simply need to be made clear, relevant and interesting, or to be exemplified as if they were 'facts' to be recited or applied. Such an approach will lead to disappointing results as soon as the outcome activities require something subtly, but significantly, different from what has been so neatly presented. The quality actually required (of good historians and by exam mark-schemes) is that students' knowledge of causation as a 'web' should pervade their analysis.¹⁷

This is an important but subtle idea: why is simply sharing the conceptual insight in its referential form and then getting the student to apply the idea so that the teacher can check their comprehension of it not enough to provide students with the rich inferential bonds they need behind their statements? Surely this not precisely what teaching is about – inducting students into society's existing knowledge and ways of knowing? In addressing this question, it is important to acknowledge that what we mean by 'sharing' and 'comprehension' deserves extended discussion and depends on our understanding of how students learn and of the distinct nature of knowledge domains (for example, how historical knowledge differs from knowledge of physics). Here, I would like to share just two ideas briefly. First, I suggest in Figure 3 a number of reasons why it could be advantageous to design learning sequences that *build up* to student discovery or revelation rather than relying solely on 'give and check got' approaches to teaching. Second, I recognise that while there may be a number of students

whose learning is not hampered by a 'give and check got' type of instruction, such an approach risks distorting the process of knowledge acquisition for many others.

As background capacities, concepts are tools; they exist, becoming what they are *in use*. Just as a hammer sitting on a bench remains a tool, but becomes a hammer in the fullest sense when it is engaged in hammering, implying a user and a purpose, so 'causation as web-like' is a headline, a referential statement. It is only as powerful or meaningful as its user's background capacity; that is the student's capacity to show how these and those events are related causally in this topic. Students' 'reasoning' – in other words, what the student understands by their claims – potentially strengthens as it is flexed, fleshed out, tested and amended when the student brings it to bear upon the question in hand. It is forged over multiple and diverse encounters. The toddler needs to learn the word 'kitten' through sufficient encounters with 'kitten-like' things in the world and in relation to relevant accompanying concepts so that their reasoning in relation to those encounters can give meaning to the word 'kitten'. Likewise, if the student does not encounter sufficiently compelling experiences of causes operating within a web, and of the features associated with that kind of interplay, then there is little in their 'space of reasons' for these words to name.

As teachers, we cannot be satisfied with the mere inclusion of 'evaluative' or 'linking' or 'explaining' sentences. If the meaning-making behind the original claim is weak, no amount of writing frames, model answers or question formulae intended to help students to replicate the appropriate material will satisfy the need to strengthen their underlying reasoning; that is, the students' sense of what is ruled in and out and implied by the claim – what it is they think they are saying when they construct the sentence. The implication of adopting an inferentialist perspective is that student progress is seen to depend on a patient and deliberate building up and strengthening of knowledge through relevant reasoning about authentic encounters with the referents of particular words and not simply by providing the words themselves.

Figure 7: The cards used in the Venn diagram activity (Round 2)

21 Schleicher (December 1932-January 1933), lasted 57 days as Chancellor.

22 Von Papen (March 1932-November 1932) was driven out of office by a Reichstag vote of no confidence.

23 From March 1930 (Bruning) to January 1933 (Hitler), President Hindenburg used Article 48 to choose and keep Chancellors in power.

24 The 1st Weimar president, Ebert (1918-25) used Article 48 sparingly with the aim of sustaining democracy. President Hindenburg (1925-34) used it frequently in a way that undermined the power of the Reichstag and democracy.

25 From 1919 to 1923 the Weimar Republic only survived being overthrown by extreme left- and right-wing parties because of the loyalty of the police and army.

26 Germany had recovered from its first economic crisis (Hyperinflation 1923) largely thanks to American loans which dried up after the Wall Street Crash in October 1929.

27 The democratic system in Germany 1919-1933 did not have widespread support. The Nationalists (DNVP) looked back nostalgically to the semi-autocratic state of the imperial period, while the German Communist Party (KPD) sought a proletarian revolution.

28 Hitler didn't just want to abolish the Treaty of Versailles. He explained in *Mein Kampf* how he sought to unite all German-speaking people (including Austrians) and not just to return Germany to her 1914 borders.

29 Catholics tended to remain loyal to Catholic parties and factory workers (trade union members) remained loyal to left-wing parties.

30 Hitler used his time in prison after the failed Munich Putsch to lay out a clear set of political ideas for the party in a book which he hoped would become a bible for his followers.

31 Hitler used his time in prison after the failed Munich Putsch to transform the Nazi Party into a major national political party, which would compete for public votes in democratic elections. Their electoral professionalism enabled the Nazi message to reach parts of Germany that other parties did not reach. They also targeted specific interest groups with specific messages – trained speakers addressed local and concrete issues.

32 The Nationalists' (DNVP) message was equally as nationalistic and hostile to the socialist threat as the Nazis. The Nazi party was never part of government in the Weimar period and could add a populist and anti-establishment message.

33 In 1929 the Nazi party and the Nationalists (DNVP) joined together to denounce re-negotiations of reparations and the resulting Young Plan. Hitler, the extremist fringe politician, was now seen centre stage with leading conservatives and given an unprecedented degree of respectability.

34 The nature more than the number of political parties mattered as many were closely aligned with socio-economic interest groups, for example, the Social Democrats (SPD) had mainly working class membership, and the People's Party (DVP) was closely aligned with big business interests. The inability of parties to agree on the funding of unemployment relief caused the Grand Coalition to collapse in 1929-30.

35 Bruning (Chancellor March 1930-March 1932) used President Hindenburg and Article 48 to introduce unpopular measures. Public spending cuts and tax increases made the economic crisis worse and President Hindenburg forced Chancellor Bruning to resign.

36 The appointment of Hitler as Chancellor in January 1933 was not due to overwhelming electoral support: 63% of the voters opposed Hitler. The highest percentage of votes ever won by the Nazis was 37.2% in July 1932. When Hitler was given the job of Chancellor in a coalition government by President Hindenburg in 1933, Nazi support was actually slipping.

37 Between July and November 1932 the Nazis lost 2 million votes.

38 It was clear that Hindenburg did not want to appoint the upstart Nazi leader, refusing to make Hitler Chancellor in August 1932.

Figure 8: Round 2 supporting questions designed to direct students towards the overlap cards

Supporting question	Card chosen by a student to justify their decision
1. Why was the new state (Weimar Republic) able to survive inflation and not the Depression?	Card 18: When the US stock market (called Wall Street) crashed in October 1929 the value of shares collapsed and many US businesses were ruined. Americans, suffering from the economic crisis, ended their loans to Germany and demanded the repayment of existing loans. AND Card 26: Germany had recovered from its first economic crisis (Hyperinflation 1923) largely thanks to American loans which dried up after the Wall Street Crash in October 1929.
2. Why was the Nazi party in the political wilderness until the late 1920s?	Card 14: Nazi Party growth in electoral support from 2.6% of the vote (seats) in 1928 to 37.3% of the vote (seats) in 1932.
3. Why did the Nationalists, who had similar policies to the Nazis, not gain more votes?	Card 32: The Nationalists' (DNVP) message was equally as nationalistic and hostile to the socialist threat as the Nazis. The Nazi party was never part of government in the Weimar period and could add a populist and anti-establishment message.
4. Why did the Communists, who also offered a radical alternative to the Weimar Republic, not gain more votes?	Card 1: The split between the Social Democrats (SPD) and the Communists (KDP) meant that they spent time attacking each other rather than uniting against the Right in the early 1930s.

So how can teachers help students 'get at' the underlying referent reasoning – providing them with a sufficiently rich 'if...then...' responsiveness to the referents in the world and not just with the words thought to represent them? In explaining how I revised my lesson sequence I share the ways in which I used symbols other than language and questioning to interrupt the students' assumptions and engineer experiences of the relevant reasoning in response to referents rather than permit them to 'sleep-walk' through the kinds of activities which would make the necessary thinking too much of a hit-or-miss affair.

Revising the lesson sequence to enhance underlying responsiveness to the world

I needed my students to see that a claim about relative importance requires a process of judgment so I asked them to play with the size of the circles representing each factor on the Venn diagram. The circles could be presented as all of equal size, or as two equal circles with a larger or smaller one, or all as different sizes, as illustrated in Figure 4. The additional use of mathematical symbols and vocabulary – 'more than' (>), 'less than' (<), and 'equal to' (=) – to express circle size combinations and variations was quite basic but nevertheless captured *relative* expressions (comparing one to another) rather than discrete characterisations of single factors. Students then turned these choices into thesis statements.

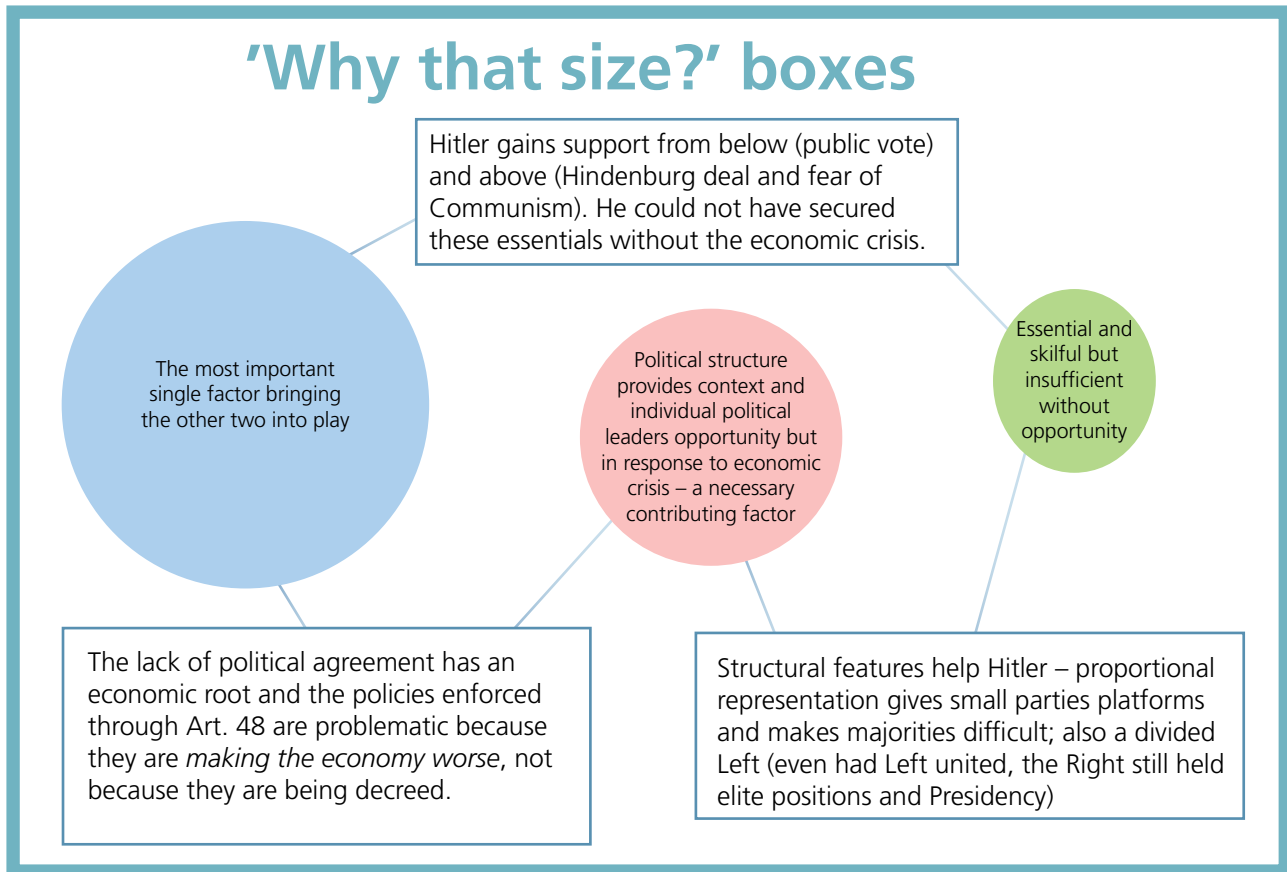
Setting aside the issue of the quality of the students' judgement process, what matters about this activity is that determining the circle size intrinsically requires an evaluation of relative importance. It is impossible to draw the circles without deciding on the relative importance of the causal factors that they each represent. The decision to be made is much more apparent than when writing sentences about the relative importance of the referents that the words are meant to convey. Drawing circles of a particular size temporarily lowers the literacy demands while increasing the

likelihood of students entering the relevant 'space of reasons'. While some students have little difficulty in holding on to the sentence referent, others all too readily manipulate the symbolic conventions that they have been given – within word mats or writing frames – without any commitment to the ideas the words are meant to symbolise.

As students determined the size of their circles and compared their decisions to those of their neighbours, they invested in a tangible judgement visibly different from other valid possibilities. Seeing their decision in contrast to other students' decisions opened the possibility of justification, defence and critique – a stance for one particular size configuration was a stance *against* other possible configurations. The assertion that 'the economic situation was the main reason Hitler became Chancellor' became something contested, not something to memorise. I did not need to tell students that the relative importance of different causes was a matter of argument; they looked to their neighbours' circle sizes and told me that the answer entailed disagreement. I helped them to name the learning they had arrived at for themselves. The words in the question now stood for something that students had experienced and manipulated first-hand. A slightly richer reasoning now lay behind their concept of cause.

The task to determine the size of each circle had changed the possibility of what could be done with the information on the cards. Students' essays written at this point, however, reveal that while they were now confident in advancing a claim about relative importance, they tended to *assert* such claims rather than being able to *argue* for them. Once again, I got back a reflection of what I had *given*. I had invited judgement and that was what I got. But I had not engaged sufficiently with the justification of that judgement and neither had the students. Recognising that students' underpinning inferential bonds were operating differently from mine signalled that something important remained unsaid and unseen. I therefore introduced a further element – 'Why that size?' boxes, as shown in Figure 5, to help students see the need to justify their decisions.

Figure 9: An example of the explanations written by one student to explain her decisions about the size of each circle in Round 2



A clearly-defined space (an empty box) on the information capture sheets compelled the students to record their ideas about why they had reached their decisions about the relative importance of the three factors. Again these boxes gave physical form to the thinking required: (a) we need reasons; and (b) they need to be reasons for the relative importance of the three kinds of factor; *not* reasons for content classification, *nor* even reasons as relationships between a particular factor and a specific event, but rather reasons why this causal factor is more, less, or just as important in causing Hitler's appointment as that one. The physical space of these boxes encouraged pupils to see not just *what* was needed and how these arguments differed from the 'raw' information contained on the cards, but also to recognise when they did not have any reason for that claim or when they could not adequately express the reasons that they felt intuitively. As teachers, establishing precisely *what* needs to be done by our students but cannot yet be done is useful; even more so, if it can be established through a relatively simple preparatory task rather than more extensive written work. It enables the teacher to think carefully about what to foreground next in their teaching and how.

Even after these activities, some students were still struggling to generate arguments as to why this or that factor was more or less important. Both of my sequence adaptations (the circle and box exercises) clarified the student '*destination*' – to judge and justify – but they said nothing about student '*route*'. It was as if some of my students were saying, 'I know I need to do it, but how do I set about judging and justifying?' They were still being asked to perform much too early; their boxes were sparsely populated and their essays were being 'improved' not by their greater causal reasoning but by their neighbours' arguments. I had not engaged with *how* to arrive

at a claim for the relative importance of different factors and neither had many of them.

The route lay in helping them to understand how the Venn diagram functioned and why I had structured the task in that particular way. Some of them had still not recognised the significance of the overlap spaces on the Venn diagram; they did not realise that if they could establish how one category or factor impinged upon another they could use their knowledge of this influence to help them assess the relative importance of one in relation to the other. For me, this was self-evident: it 'went without saying' because somewhere in my background capacities I had realised that I could assess relative importance on the basis of the links between causal factors. The 'no-brainer' quality of some knowledge is peculiar to the knower, however, and teachers must be cautious about simply 'giving' students the referential fact devoid of the relevant reasoning. Telling is not always teaching. I wanted to help students to arrive at this insight for themselves. I realised that if students were not ready to tell me the significance of the cards in the overlap categories, they were in danger of having more referential 'rules of thumb', statements to remember, but still lacking the corresponding background capacities that would make those rules helpful.

I therefore tried to engineer student *discovery* of the role that overlap cards could play by using supporting questions, such as those listed in Figure 6, to focus their attention on the particular cards within the Venn diagram that had helped them to generate arguments about relative importance.

For some students this was enough. They benefited from narrowing the focus on to a single combination of factors and moving methodically from one factor combination to the next,

others still did not recognise the significance of the overlap cards at the end of this third adaptation (the use of supporting questions). I could have given them that insight and hoped for student comprehension and use but I was reluctant to do so. As I redeveloped my teaching of this topic in subsequent years, I decided instead to break the material down, presenting it in two 'layers'. On the first occasion, I provided a relatively simple set of cards with limited information. After completing the sequence of tasks with that information, my students tackled the whole process again with the addition of a more complex set of cards for Round 2 (shown in Figure 7). This gave them a second chance to see the destination and route for themselves and improve their judgements and justifications by repeating the cycle of Venn diagram, circle size, argument boxes and supporting questions with reference on the second occasion to the full range of cards. The second layering of information and activities gave all students a chance to engage with richer substantive detail when they were already feeling confident about the nature of the task and had invested in it. Those that had begun to grasp the role that the 'overlap cards' play in generating reasoning about relative importance were primed to make such connections as they sorted the second set of cards, adding them to their existing Venn diagram. Students used their deepening knowledge of the material, destination and route, to amend or complete new versions of their 'What size circles?' and 'Why that size?' boxes. Figure 8 sets out the supporting questions from Round 2 designed to give them one last chance to see the role of the overlap cards for themselves.

The second run through the activities proved extremely powerful, as Figure 9 demonstrates. I learned that students benefited far more from this layering than if they had engaged in these activities once each in relation to two different topics, such as Hitler becoming Chancellor and then Hitler becoming dictator. I believe that deep engagement on one occasion, rather than more a more superficial approach for two separate questions, yielded better learning because the nuance of students' argument rests on the quality of their substantive knowledge, their investment in the referents and corresponding arguments, and the confidence they have developed in themselves and their capacities. In my experience, students could translate their deeper understanding of one question into their thinking about alternative questions and subsequent topics. Knowing that I was going to revisit the question, providing a second layer of information, also helped me to resist the temptation to circumvent their thinking process and give away insights before the students were ready. (I will acknowledge, however, that by the end of the second round I was happy to give everything away, hoping that the groundwork I had laid would support students' understanding of the principles that those statements embodied.)

How can we protect student meaning-making in our lessons?

I have suggested that the strength of students' inferential bonds can be difficult to access and that teachers can easily struggle to teach for underlying reasoning. There are, however, a number of ways in which teachers can avoid their lessons deteriorating into the amalgamation of vast quantities

of information about the past or endless engagement in uninformed reasoning and writing tasks that get students running on a treadmill of activity that only exercises their existing background capacities rather than developing them further.

1. By giving careful thought to what we mean by knowledge

We need to recognise the potential gap between the manifestation of knowledge and the strength of the student reasoning or meaning-making that sits behind the claims advanced. It is helpful to remember that *what* words are meant to symbolise matters just as much, if not more, than the symbols themselves; that words cannot symbolise everything; and that words are not our only symbols.

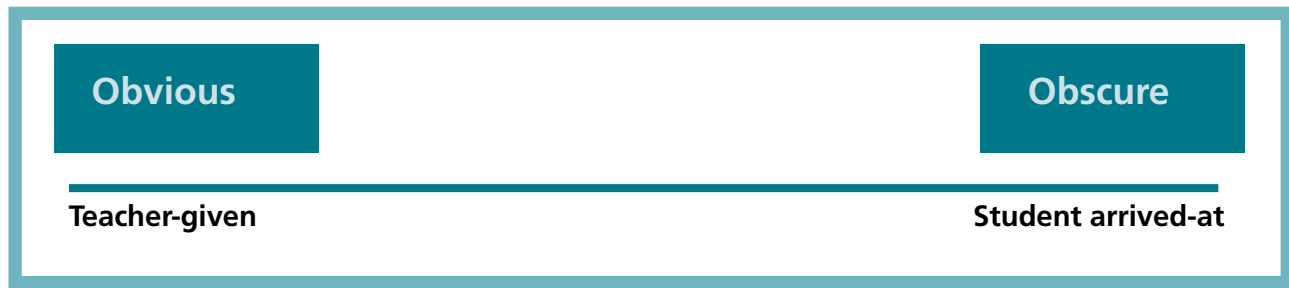
2. By thinking carefully about who is doing the thinking

By structuring lesson planning and evaluation around questions such as, 'Who is doing the thinking in this activity?'; 'What thinking is it and with what material and support?'; 'For what end or purpose?'; and 'How does this fit into the broader programme of learning?' The third is by understanding that, when designing activities, any activity will not do and, of course, the same could be said of factual content. Teachers need to be precise about the *relevant* 'space of reasons' for the intended learning – relevant to the students' start-point and to the historical problem posed. Through teacher experimentation and careful observation (or 'field-notes' – the term I encourage student-teachers to apply to their lesson plans and evaluations), we can begin to understand what it means to control a number of aspects of the lesson which require sophisticated decisions about where to direct students' attention, when and how long to have it linger on particular points. If we are not getting the knowledge manifestations we want, the reason may be that we are simply getting back a reflection of what we have given.

3. By experimenting with making the target knowledge more or less explicit

We create opportunities for cognitive labour through our choice of what we ask students to think about (and with what support and for what purpose). While it may seem counter-intuitive to make the target more obscure on occasion, strategic choices about when to focus the cognitive labour on self-discovery rather than on merely grasping other peoples' insights depend on teacher purpose. I use the continuum shown in Figure 10 to help me to articulate one way to think about teaching. For example, the visual nature of my circles and boxes deliberately makes the point of the question very obvious. On this occasion I did not want students to invest their cognitive labour in working out the focus of the question – what exactly it was asking (though on other occasions I would need to be sure that they could do that for themselves). I had also chosen in this lesson sequence to make the relevant substantive knowledge easily available through my choice of the information provided on the cards and to make the links between different factors quite obvious by creating cards on which two or more factors were already combined. Having said that, I made students work hard for the arguments supporting their judgements about relative importance and I made the significance of the overlap cards very obscure at the beginning to maximise

Figure 10: Continuum diagram



students' opportunities to arrive at the insight for themselves, gradually making it more obvious until I finally gave it away as an object for comprehension.

In sharing this continuum, however, I want to refute the simplistic assumption that 'arriving at' is good and 'given' is bad; that one characterises learning that is active while the other is necessarily passive; or that this particular characteristic is defined at the task level. For example, depending upon exactly how the tasks are orchestrated, card-sorts can be a way of providing either knowledge that is 'given' or knowledge that is 'arrived at'. The same is true of individual reading. I would suggest that lessons need to balance 'telling' with precisely-designed opportunities for student discovery. We 'give and check' (that students have 'got' it) for some aspects of the lesson and we 'have pupils arrive at' for others. Knowing which to do when, for whom, and why is central to teacher expertise.

Including an inferential perspective in our understanding of meaning could support our thinking about historical knowledge. The suggestion that a simple act of naming involves reasoning encourages us to re-think how we often separate 'knowing' (sometimes labelled as comprehension or description) from 'higher-order' reasoning such as explaining or evaluating.¹⁸ Thinking of reasoning as an integral component of every and any claim or utterance might help sharpen our clarity as to whether we are discussing the *act* of knowing – what it means to know, what kind of a thing knowing is – or the *type* of thing that we know about – knowledge related to procedural concepts, second-order concepts, substantive knowledge. This perspective also helps us see variation in the outward performance of various students as a manifestation of their varying inward 'space of reasons' and that this space is where symbols get their meaning, from first-hand relevant reasoning in response to referent recognition.¹⁹

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¹ See, for example, Shemilt, D. (1980) *Evaluation study: Schools Council History 13-16 Project*, Edinburgh: Holmes McDougall; Ashby, R. and Lee, P. (2000) 'Progression in historical understanding among students aged 7-14' in P. Seixas, P. Stearns and S. Wineburg (eds), *Teaching, Learning and Knowing History*, New York: New York University Press; Wineburg, S. (2007) 'Unnatural and essential: the nature of historical thinking' in *Teaching History*, 129, *Disciplined Minds Edition*, pp. 6-11; Seixas, P. and Morton, T. (2012) *The Big Six Historical Thinking Concepts*, Toronto: Nelson Education.

² In the GCSE paper set by Edexcel in January 2009, for example, Question 5b asked 'How much continuity was there from the Roman period to the end of the Middle Ages in medical treatments and home remedies?' The examiners' report on students' performance in the exam noted (p.18) that there were 'a number of answers which did not analyse the question and provided detailed accounts of Roman public health or which appeared to be "prepared answers" focusing on the concept of how much progress was made during this period.' http://qualifications.pearson.com/content/dam/pdf/GCSE/History%20B/2009/Exam%20materials/5HB01_1A_pef_20100823.pdf

³ This question formed part of the Edexcel GCSE History B, Schools History Project, Germany 1919-1945 depth study taught in my department at the time (2003-2011).

⁴ For discussion of the specific role that (substantive) knowledge plays in student learning see: Hammond, K. (2014) 'The knowledge that "flavours" a claim: towards building and assessing historical knowledge on three scales' in *Teaching History*, 157, *Assessment Edition*, pp. 18-24; Donaghey, L. (2014) 'Using regular, low-stakes tests to secure pupils' contextual knowledge in Year 10' in *Teaching History*, 157, *Assessment Edition*, pp. 44-51; Palek, D. (2015) 'What exactly is parliament? Finding the place of substantive knowledge in history' in *Teaching History*, 158, *A Grounding in History Edition*, pp. 18-25.

⁵ By 'Hitler' I meant the actions of Hitler and the Nazi party. Le Cocq has written about the possibility of students gaining substantive knowledge and 'critical thinking' simultaneously in Le Cocq H. (1999) 'Note taking, knowledge building and critical thinking are the same thing' in *Teaching History*, 95, *Learning to Think Edition*, pp. 14-19.

⁶ Arthur Chapman has contributed extensively to our understanding of the analytical demands of causal questions. See, for example, Chapman, A. (2003) 'Camels, diamonds and counterfactuals: a model for teaching causal reasoning' in *Teaching History*, 112, *Empire Edition*, pp. 46-53; Chapman, A and Facey, J. 'Documentaries, causal linking & hyper-linking: using learner collaboration, peer and expert assessment and new media to enhance AS students' causal reasoning' in H. Cooper and A. Chapman (eds), *Constructing History 11-19*, London: Sage.

⁷ Numerous teachers have contributed excellent examples of activities promoting students' causal reasoning; for example, Woodcock, J. (2005) 'Does the linguistic release the conceptual? Helping Year 10 to improve their causal reasoning' in *Teaching History*, 119, *Language Edition*, pp. 5-14; Chapman, A. and Woodcock, J. (2006) 'Mussolini's missing marbles: simulating history at GCSE' in *Teaching History*, 124, *Teaching the Most Able Edition*, pp. 17-27.

⁸ Michael Oakshott described education as an initiation into a conversation that has been going on since our time in primeval forests. He asserts how, 'it is this conversation which, in the end, gives place and character to every human activity and utterance.' Oakshott, M. (1962) *Rationalism in Politics and other essays*, London: Methuen, pp. 198-99. I am using 'utterance' in this broad sense to include all and any type of expression: oral or written.

⁹ Brandom, R. (2000) *Articulating Reasons: an introduction to inferentialism*, Cambridge, MA: Harvard University Press.

¹⁰ Sellars, W. (1997) *Empiricism and the Philosophy of Mind*, Cambridge, MA: Harvard University Press.

¹¹ Jan Derry has been a key figure in making links between inferentialism and education. Derry, J. (2014) 'Abstract rationality in education: from Vygotsky to Brandom', in M. Young and J. Muller (eds) *Knowledge, Expertise and the Professions*, Abingdon: Routledge; Derry, J. (2013) *Vygotsky Philosophy and Education*, London: Wiley Blackwell.

¹² Brandom, *op. cit.*

¹³ To say that we construct meaning is not to say that knowledge is relative – there is a conventional definition of 'kitten' that we are not entitled to ignore with impunity.

¹⁴ Brandom, *op. cit.*

¹⁵ While this article focuses on students' understanding of the second-order or disciplinary concept of causation, the same distinction between the referential and inferential ways in which concepts function applies also to substantive concepts such as 'revolution' or 'parliament'.

¹⁶ It is important to note that in exceptional circumstances some students do engage in the relevant reasoning despite the omissions in lesson design discussed here. This is, however, more happy coincidence than a result of teacher design.

¹⁷ Shemilt in his evaluation study of students following the Schools History Project programme commented, '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.... 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, *op. cit.*, pp. 10-11.

¹⁸ The distinction has served us well in parts, but it has also thrown up some challenges commonly described within the history education community as a 'false dichotomy'. For example: Counsell, C. (2000) 'Historical knowledge and historical skills: a distracting dichotomy' in J. Arthur and R. Phillips (eds), *Issues in History Teaching*, London: Routledge; Cain, T. and Chapman, A. (2014) 'Dysfunctional dichotomies? Deflating bipolar constructions of curriculum and pedagogy through case studies from music and history' in *The Curriculum Journal*, 25, no. 1, pp. 111-29.

¹⁹ Recognition is as much about the student registering dissonance and experiencing interruption in their bundles of inferential bonds (and therefore curiosity) as it is about familiarity.