Academic Critical Thinking, Research Literacy And Undergraduate History

Stefan Ekecrantz, Department of Education, Stockholm University, Stockholm, Sweden

Abstract:

The concept of critical thinking is pivotal in academia. Many see it as the very core of intellectual thought and the primary learning outcome of higher education. In addition to its universal merits, modern society presents challenges that arguably make this potential outcome more urgent than ever. One problem in critical thinking research and general discourse is that the concept is so broadly defined that it includes virtually anything and everything of virtue. In this article, a narrower concept of academic critical thinking is suggested as a framework for teaching and discussing critical thinking and research literacy with undergraduate History students. This, in turn, relates to an ongoing debate in critical thinking research if it is to be understood primarily as either a generic or a discipline-specific concept. Through a discussion of possible strengths and weaknesses of History in this regard, interdisciplinary critical thinking is proposed as a third way alternative to this long lived dichotomy.

Keywords:

Critical thinking, Criticality, Undergraduate history, Undergraduate thesis, Research literacy, Sweden, Higher Education, Holocaust denial, Internet

ACADEMIC CRITICAL THINKING, RESEARCH LITERACY AND UNDERGRADUATE HISTORY

Stefan Ekecrantz, Department of Education, Stockholm University, Stockholm, Sweden

Abstract

The concept of critical thinking is pivotal in academia. Many see it as the very core of intellectual thought and the primary learning outcome of higher education. In addition to its universal merits, modern society presents challenges that arguably make this potential outcome more urgent than ever. One problem in critical thinking research and general discourse is that the concept is so broadly defined that it includes virtually anything and everything of virtue. In this article, a narrower concept of academic critical thinking is suggested as a framework for teaching and discussing critical thinking and research literacy with undergraduate History students. This, in turn, relates to an ongoing debate in critical thinking research if it is to be understood primarily as either a generic or a discipline-specific concept. Through a discussion of possible strengths and weaknesses of History in this regard, interdisciplinary critical thinking is proposed as a third way alternative to this long lived dichotomy.

Keywords:

Critical thinking, Criticality, Undergraduate history, Undergraduate thesis, Research literacy, Sweden, Higher Education, Holocaust denial, Internet

Introduction

Some 15 years ago, I taught a course named 'Source criticism for the internet' as part of an undergraduate Contemporary History program in Sweden. During the course, the students were asked to evaluate Holocaust-denial websites that portrayed themselves as research-based, and discuss the possible applicability of classical historical method to this dilemma. Back then, traditional academia struggled with the possibilities and challenges presented by the relatively new information anarchy called the World Wide Web. One way of coping with this new phenomenon was to ask librarians, sometimes hastily turned digital information specialists, to produce lists of quality-assured databases and other digital resources. A message that was sometimes conveyed to students was that information gathered via such lists was deemed scholarly and trustworthy, while everything else was more or less suspect. Today the digital landscape has, of course, changed dramatically along with our competencies. Professional historians and their students still read books made of cellulose and ink – perhaps more so than researchers and students in many other disciplines – but few can do without an abundance of digital tools and online resources. There is, however, an internet phenomenon that most young people are exposed to today that makes the need for academic critical thinking and research literacy acute in possibly new ways: laymen pseudo-scholarly debates and copy-paste arguments in any and all areas of science, society, politics and history.

Research literacy and academic critical thinking – defined here as the ability to assess research critically – is a key responsibility of higher education. In an accelerating information society (Rosa, 2013), the need for such academic critical thinking is arguably more urgent than ever. The likes of John Dewey in the early 1900s and Edward Glaser in the 1940s highlighted the problem of a literate but uncritical populace, and the failure of education in relation to this (Abrami

et al., 2015). Political propaganda, news reporting and commercial messages required not only informed voters and consumers but also critically thinking ones as well. As such, the very notion of uncritical thinking in a wider sense was deemed as something of a democratic liability. When laymen opposition to Albert Einstein's work in the 1920s used fringe and unpublished scientific papers as support for the idea that the theory of relativity was part of a Jewish conspiracy, it had to rely on printed pamphlets and letters (Wazeck, 2013). Today such scientific arguments can be copied and echoed in the public domain without effort, creating barrages of selectively chosen facts that even experts in a field may struggle to assess.

Sometimes such potpourris of purportedly scientific arguments can be seen as tragicomical. Other times, pseudo-scientific debates may lead to more dire consequences, like when celebrities' anecdotal evidence skew public beliefs about risks and rewards of vaccinations, or misrepresentations of the science behind current knowledge about climate change. In a mapping of the so-called climate sceptical blogosphere, Amelia Sharman showed that a few particularly influential websites acted as translators of primary research, and by reinterpreting it selectively have had a substantial impact on the public's misconceptions on a global scale (Sharman, 2014). Undoubtedly, academic critical thinking has a vital role to play here.

Ideally, the student's undergraduate thesis may be what most effectively puts such critical thinking to the test. Through authentic student research, the potentials, limitations, and perhaps most importantly, the highly provisional nature of research are experienced from an insider's perspective. As many supervisors can attest, though, students sometimes struggle with even the most basic conceptions of criticality and research literacy when they write their second or third thesis. When that is the case, their undergraduate theses may not have been the nearly perfectly valid assessment method it is sometimes viewed as. There is an increasing amount of research into student learning during the thesis process, but up to now, very little has been done about the relationship between the finished text and the student's actual competencies (Ekecrantz et al., 2015). In assessment, grading and supervision, we get to evaluate the level of criticality in texts, but we know less about the authors' actual critical thinking abilities. We also know even less about their research literacy and academic critical thinking beyond the discipline of History. To address this, there is reason to enquire into general as well as disciplinary critical thinking literature alike.

General critical thinking research

A wide range of philosophical, psychological, educational and sociological traditions have long since claimed the concept of critical thinking as their own, making it both contested and exceptionally multi-facetted. In an insightful overview by Martin Davies and Ronald Barnett the vast critical thinking literature is mapped in a two-dimensional model, with one 'individual axis of criticality ("inner" focus)' and one 'socio-cultural axis of criticality ("outer" focus)' (Davies & Barnett, 2015). In this model, three partly overlapping research strands are placed, with *the critical thinking movement* as the one most concerned with an 'inner' focus, such as research into rationality, argument and cognitive perspectives. The second strand is *the criticality movement*, which is more concerned with critical thinking in action, in a given context, rather than individuals' abilities and inclinations in isolation. Lastly, *the critical theory movement* is the one most concerned with sociocultural perspectives and normative-ideological issues, like those common in critical pedagogy and the like. As a product, the History student's thesis can be seen as primarily related to the concept of *criticality*, and could perhaps be defined as '(potential) critical thinking in action, in a disciplinary context'.

From such a perspective, there is still an abundance of important issues raised in the two other 'movements'. In a large, widely cited study by Richard Arum and Josipa Roksa, serious concerns

regarding students' critical thinking are raised (Arum & Roksa, 2011). From what might be labelled a cognitivist perspective, they argue that American four year colleges did not significantly improve students' abilities in this regard. Arum and Roksa's work has been criticized for being empirically 'thin' (Murphey, 2011) in relation to its claims but a recent large meta-analysis by Christopher Huber and Nathan Kuncel paints a similar albeit slightly more optimistic picture (2016). The latter concludes that interventions specifically aimed at fostering critical thinking do not seem to have a measurable effect, a conclusion partly in disagreement with another meta-analysis by Linda Lian Niu and colleagues (2013). On closer inspection, many of the differing conclusions stem, to a degree, from differing definitions and methodologies used. With all the different traditions with vested stakes in the concept of critical thinking, such a variation is to be expected.

Along with this, in much of the critical thinking literature the concept seem to become inflated beyond most of its real life uses once academics are asked to define it in isolation. In a large Delphi study, the American Philosophical Association asked 46 renowned critical thinking researchers what the concept entailed. The resulting list of skills, sub-skills and inclinations encompass a vast variety of qualities, such as 'concern to become and remain generally well-informed'; 'to apprehend or appropriately formulate categories, distinctions, or frameworks for understanding' and 'diligence in seeking relevant information' (Facione, 1990, p. 13). In a study by Tim Moore, interviews with 17 Australian academics in History, Philosophy and Cultural Studies resulted in a similarly broad spectrum of perceptions, where definitions of critical thinking included 'simple originality'; 'careful and sensitive reading of text' and as 'the adopting of an ethical and activist stance' (Moore, 2013, p. 516). In a taxonomy of critical thinking developed by Martin Davies, his and Barnett's aforementioned movements of critical thinking, criticality and critical theory were added as extensions to the classical Bloom taxonomy of intended learning outcomes (Davies, 2015). In this, the criticality movement alone spans the entire scope of analysis, synthesis and evaluation. The critical thinking movement spans all the way from factual knowledge, and taken together, literally covers the entire cognitive domain in that taxonomy.

As seen in those examples, critical thinking may easily become indistinguishable from thinking in general, which would be at odds with most real-life uses of the concept. When we read a piece of student work and conclude that the author lacks in critical thinking, this arguably refers to something significantly less all-encompassing. Two constructs that that are often entangled with critical thinking in the literature are creativity and analytic quality. Albeit overlapping, the three are, for all practical purposes, hardly synonymous. Depending on focus, these and other qualities may be seen as prerequisites for, consequences of, or subsets of one another. It may be likened to a Venn diagram with overlapping sets that merge into a single concept depending on the topic at hand. A more pragmatic definition would need to stipulate that, for example, a History thesis should be able to exhibit high levels of one or two such qualities, while still lacking in one of the other. If not, all three run the risk of becoming analytically meaningless.

Incidentally, much of what is discussed in the described general critical thinking research, mirror many reoccurring themes in the History education literature – albeit mostly independently of each other. These post facto connections are perhaps particularly evident with regards to research and development in the UK and the US, predominantly with a focus on History education in school (e.g. Fines & Nichol, 1994). For overviews as well as in-depth discussions about current and past issues in History education, see e.g. Ian Davie's (2017) compilation in *Debates in History Teaching* – with contributions from key figures such as Peter Lee, Rosalyn Ashby, Dennis Schemilt and many others. In a more general sense, critical thinking research is engaged with issues similar to that of History education theorists such as Bruce VanSledright (2011), whose 'strategic' and 'second order' concepts very much can be related to corresponding constructs in the general critical thinking literature.

Disciplinarity and critical thinking

There is a decades-old and ongoing debate about whether critical thinking should be understood as a generic or discipline-based phenomena (Avery, 1994; Davies, 2013; Ennis, 1990; McPeck, 1990; Moore, 2011). Proponents of the generalist perspective usually argue that critical thinking builds on skills that are independent of the peculiarities of individual disciplines. Their counterparts in the specifist camp argue that all academic endeavours, including critical thinking, are always framed in a disciplinary context and that this leads to differing practices of criticality. This is usually coupled with the notion that this is not only a factual observation, but also that teaching and learning critical thinking needs to be approached from an individual discipline. Generalists usually claim that not only is critical thinking a universal skill that transcends academic disciplines, it is also most effective to learn this skill independently of a specific discipline. Or as self-proclaimed generalist Martin Davies puts it:

> The generalist view is that the skill of critical thinking is in large part (if not wholly) non-discipline-specific. That is, there is something about critical thinking that is general to all discipline areas. This implies that critical thinking is teachable independently of the disciplines, by using various approaches, for example, dedicated classes on informal logic or techniques of argument diagramming. (Davies, 2013, p. 530)

Whether a generalist view really implies a best practice in teaching and learning is debatable. Even with a generic definition of critical thinking, it is quite possible that this is in something that may most effectively be taught within a disciplinary context. However, it is not always clear what specifists and generalists are disagreeing on as the two often rely on differing underlying definitions of critical thinking. It obviously matters if critical thinking is defined as that which is universal and transcends academic disciplines, or if it is to be understood as that which sets practitioners within a particular discipline separate from others. As for effectiveness, Huber's and colleagues' (2015) meta-analysis concluded that students do improve both critical thinking ability and disposition through higher education, but that designated critical thinking courses did not add to these gains. Niu and colleagues came to a similar specifist conclusion in their earlier meta-analysis:

> This suggests that although critical thinking can be increased through teaching and learning, the detectable effect tends to be very small. The finding that students' discipline predicts the treatment effect of instructional interventions is also in line with the conclusion of previous research that the development of critical thinking is subject specific [...]. (Niu et al., 2013, p. 124)

In the empirical specifist literature, qualitative methodologies dominate, where for example academics are interviewed or surveyed about what they think constitutes critical thinking in their respective disciplines. If the aim is to map such potential differences, then there are some drawbacks of this methodology. For one, the very term 'critical' has different connotations in different disciplines regardless of actual differences in views and praxes, which might skew the outcomes in this type of study. It is quite plausible that interviewed historians may be more inclined to make stronger associations to source *criticism*, literary scholars might relate the question to *critique* to a degree and sociologists the same to *critical* theory. Such differences may very well lead to differing results that are in fact partly lexical or semantical.

In much of the generalist literature, problem solving, argument analysis and formal logic are seen as the essences of critical thinking. Most empirical studies build on either designated

critical thinking tests, such as the Halpern Critical Thinking Assessment (HCTA) or California Critical Thinking Disposition Inventory (CCTDI), or on parts of more general aptitude tests such as the Collegiate Assessment of Academic Proficiency (CAAP) or other. With few exceptions, these instruments primarily build on fixed response questions that subsequently are analysed quantitatively (Liu et al., 2014). Problem solving and reading comprehension is most often of a limited scope to allow for a larger number of questions in testing conditions.

The stark methodological differences in empirical specifist and generalist research on critical thinking are bound to yield different results. In some ways this is analogous to differing methodologies and subsequent results in the field of creativity research. In a much cited study by Kyung Hee Kim, a drop in creativity among US school children was reported, in contrast to increasing school aptitude test results and IQ scores during the same time period. Kim makes a strong argument for the case that standardized high stakes testing has played a role in this, reinforcing the dominance of correct versus incorrect answers – as opposed to fuzzy and unknown solutions often associated with creative thinking. Kim bases her conclusions on large-scale results on the Torrance Creative Thinking Inventory (TCTI) among US students. Emily Weinstein and colleagues ended up with way less conclusive results in an empirical study building on authentic student work. The researchers did a longitudinal analysis of 355 real life expressions of creativity such as student artwork and creative writing projects, and concluded that originality and complexity increased in art but decreased in writing. In critical thinking research, this type of nuanced approach is lacking and needs to be pursued further.

Generalist instructional approaches often involve teaching students to deconstruct arguments and assess their internal validity through formal and informal logic exercises. Validity and reliability are of course entangled concepts, but suspended judgement in academic critical thinking is arguably less concerned with internal validity and relevance of arguments. Mark Battersby and Sharon Bailin makes a similar point on formal logic in this context:

> The identification of fallacies, though important, plays only a preliminary role in the evaluation to individual arguments. Our approach to fallacy identification and analysis sees fallacies as argument patterns whose persuasive power is disproportionate to their probative value. (Battersby & Bailin, 2015, p. 9)

Criticality vis-a-vis others' research may be more about the ability to scrutinize the reliability of truth claims, which in turn often require specialist knowledge − and thus cuts to the core of the specifist-generalist debate. Apart from factual knowledge, scholarly truth claims assume a shared but rarely explicit epistemology. When an historian says 'we now know that ...' it means something quite different than if another specialist makes the exact same claim which would make it difficult to assess through logic. The sub-text of the historian's assertion of current knowledge and consensus may be something along the lines of: 'Given the scarce and fragmented data available, and given specific interpretations thereof − put together in a specific narrative and filtered through a number of philosophical-theoretical assumptions − it seems most plausible that ...' On the other hand, the very notion argued here that research debated in the public sphere has to be scrutinized by non-specialists as well, builds on the ideal of some kind of generic criticality − very much in line with most generalist sentiments. Mark Battersby has labelled this as being a 'competent layperson':

> A competent layperson is someone who has a broad understanding and appreciation of the intellectual landscape, someone who has strong generic intellectual abilities such as critical thinking and research skills which enable them to make inquiries into any area of

specialization with efficiency and appropriate confidence. The goal is to develop the skills and understanding necessary for thoughtful citizenship and an intellectually empowered life. (Battersby, 2014, p. 4)

He exemplifies this with two real life examples where different people were able to scrutinize their own cancer diagnoses and opt for treatments other than what their physicians had recommended, literally saving their own lives with academic critical thinking and research literacy. Neither were in the field of medicine, but through a firm grasp of scientific method they could understand some key literature well enough to question the specialists on evidence-based grounds. Such a competent layperson could be seen as something of a renaissance person in relation to research from a breadth of academic disciplines. This begs the question if and to what degree our students really become such polyhistors?

The History major as critical thinker

Historians often see their academic discipline and school subject as being under attack. Politicians and others may demand curriculum changes for various ideological reasons, and debates about its relative weight in relation to other subjects is always an issue. Partly as a reaction to the latter, many historians and educators have stressed the 'utility' of History, often with regards to generic skills and competencies. In doing so they often stress skills that specifically relate to critical thinking. The History Relevance Campaign (HRC) in the US summarizes such a view:

> People learn to think critically about complex societal issues through the practice of history [...] The practice of history teaches research, judgment of the accuracy and reliability of sources, validation of facts, awareness of multiple perspectives and biases, analysis of conflicting evidence, sequencing to discern causes, synthesis to present a coherent interpretation, clear and persuasive written and oral communication, and other skills that have been identified as critical to a successful and productive life in the 21st century. (HRC, n.d.)

Such claims, that studying History leads to particularly powerful critical thinking skills is commonplace. Alix Green problematizes what she sees as instrumental and neo-liberal premises behind some of these assertions. Her point is that the skills and abilities developed while studying History cannot be reduced to 'its capacity for generic trainability' (Green, 2016, p. 95). Historians, she argues, come to possess a set of discipline-specific analytical skills that are not generic in nature but are still highly useful outside of the discipline and academia:

> History's self-consciousness is often cited as a distinctive quality of the discipline. This involves, for me, a critical, sceptical approach to enquiry − alert to differences of perspective, to gaps, ambiguities and agendas − and also an awareness of the influences on our own practice. It is a quality highlighted by scholars advocating history's importance in contemporary life, the case being that critical historical thinking is a valuable resource for the informed exercise of agency, whether as a decision-maker at the highest levels or as an individual citizen. (Green, 2016, p. 97)

While slightly at odds regarding the discipline's primacy in this regard, Green's view is still very much in agreement with that of the HRC and others − that students of History become especially apt critical thinkers. As for the societal needs for research literacy and academic critical thinking discussed here, some of these potential merits of History can be seen as particularly valuable. In a recent study by Karen Douglas and colleagues a clear correlation is shown between adherence to conspiracy theories and degree of so called *hypersensitive agency detection*, that is, 'the tendency to attribute agency and intentionality where it does not exist or is unlikely to exist'

(Douglas et al., 2016, p. 7). One would expect History majors to be less prone to anthropomorphic personification of structural phenomena than most (see e.g. Carretero et al., 1994, pp. 373-374). With common insights into the chaotic interplay between individual agency and structural phenomena in history, a History major should be well equipped to scrutinize most overreaching claims of intentionality.

Apart from intentionality, a historian's general understanding of the complexity of any and all historical events also lends itself to critical analyses of the present. Single factor explanations are rarely, if ever, sufficient in historical research and History undergraduates are exposed to webs of pluralistic descriptions and explanations from their first day in class. Furthermore, historians are especially wary of anachronistic hindsight and simplistic perceptions of causality in analyses of current events and the recent past alike. Such critical abilities can be developed in most History courses, but in addition, student research and thesis work may offer some specific critical thinking opportunities. A student who has struggled with highly conflicting accounts of one and the same event can be expected to have developed a deep understanding of how a plethora of such sources could be used selectively by someone with a cherry picking agenda or through confirmation bias. Thus, to assemble a historical narrative in an undergraduate thesis offers hands-on experience of what it really takes to make a fair representation of conflicting evidence, which in turn should make them especially sensitive to purposely skewed selections of evidence.

Such learning outcomes might best be understood as ideals and, realistically, not all History majors will reach the same level, but the notion that students of History should be well versed in dealing with intentionality, pluralistic versus single factor explanations, anachronistic hindsight and conflicting evidence is hardly controversial within the guild. Such a positive self-reflective disciplinary examination is similar to the kind of analysis often associated with concepts like *decoding the disciplines* and *ways of thinking and practicing*, where scholars dissect their own disciplines to find ways to make them more accessible to students (Middendorf & Pace, 2004; Hounsell & Anderson, 2009; Shopkow et al., 2013). In essence, the norm in these kinds of endeavours is the professional practitioner's ways of thinking and doing things. But what happens if we turn our critical faculties towards ourselves, our own discipline and our own students? Not everything is a zero sum game, but if our students − by our own account − come to engage in some aspects of criticality more at depth, we might also need to ask what aspects they engage less in.

Objects of critical thinking in History

First we may need to look into what it is that are we and our students are scrutinizing critically. It is evident that classical source criticism of primary sources is very much at the forefront of the discipline's own critical thinking discourse. However, the general critical thinking literature encompasses a much wider range of 'objects' than that. One way to categorize such objects of criticality could be to use Martin Davies's categories of critical thinking dispositions as a point of reference. For long, it has been recognized that critical thinking is not merely about ability and knowledge, but also a matter of inclination and disposition. Some may score high on standardized critical thinking tests while they still fail to act accordingly outside of testing conditions − willingly or due to a lack of transfer. Davies has categorized such dispositions as falling under one or more of three categories: '(1) dispositions arising in relation to the self, (2) dispositions arising in relation to others, and (3) dispositions arising in relation to the world' (Davies, 2015, p. 57). These three categories, I suggest, may be refashioned into three levels of analysandum in general. In reverse order and made into a hierarchy, the first level would be 'world' or 'data', the second 'others' research', and the third level, 'self', would relate specifically to one's own research. Before elaborating further, it needs to be stressed that apart from a shift in focus from critical

thinking disposition to objects of academic critical thinking, Davies' categories are not framed as a hierarchy. Furthermore, his third category refers to dispositions to think and act critically in society in general, rather than the narrower concept of 'data'.

Criticality and 'world' or 'data'

At this level, the object of criticality in History would most typically be historical primary sources. Many lengthy lists of abilities, skills and competencies that form various definitions of critical thinking could arguably be summarized as 'the things historians do and think about regarding sources'. Much of the critical thinking literature today could quite possibly benefit from historians scrutinizing, selecting, and interpreting sources as a template of sorts. Regarding transfer, we would expect someone who is able to interpret bias and context in political speeches and media in recent history to be able to do the same in the present. This also translates into a research literacy perspective with regards to political science, sociology etcetera, where similar contemporary sources may be used in research and in public discussions thereof. All historians, and ideally their students, should be able to identify strengths and weaknesses in the use of such primary sources in research, such as potentially simplified analyses, when explicitly declared motives are equated with underlying intentions, when difficult and messy sources have been disregarded in favour of the easily accessible and so on. Thus, while the object of criticality may relate to others' research, at this level it is mainly about scrutinizing the use of sources, and usually with the discipline of History as norm.

Criticality and other's research

Like all epistemic communities, historians have ways to relate to previous research that are developed to cater to discipline-specific needs and traditions. The main results in historical writing are most often framed in a voluminous and intricate narrative, building on interpretations of a vast array of primary sources that most likely will never be replicated in its totality by anyone else. Other historians of course scrutinize single arguments, facts and interpretations, but when the overarching results are challenged, this usually builds on new perspectives, new theories and new sources. This makes the processes of intersubjectivity different from those of disciplines where exact replication of results is both feasible and an ideal. In linguist Mona Blasjo's extensive comparison with Economics, History is described as being far more pluralistic and multi-voiced (Blasjo, 2004). In more linear text traditions, like Economics, the compilation of previous research can be seen as more integrated with the empirical results. To cite someone else's work in such disciplines generally implies that the author presents this as the best and most relevant piece of work, agrees with its results and builds on them. This would be the logic behind the ever-increasing use of bibliometrics, citation analyses and so called impact as measures of research quality. For many historians this is an odd notion, as individual citations in lengthy monographs sometimes mean little more than the fact that someone has written about the same topic, and that it is considered good form to inform the readers of this fact.

Such dissimilarities stem in part from underlying differences in just how we build knowledge cumulatively. Chemists researching quasicrystals and physicians researching vesicle traffic need specific methodologies to be able to build on an immense body of global and highly interconnected research. This includes iterative systematic reviews, quantitative meta-analyses and syntheses, compiled according to strict and shared criteria. Historians researching religious heterodoxy in early reformation Antwerp relate to a quite different type of body of research, and need to do this in other ways. Some social sciences can be placed somewhere in between such extremes.

In Thomas Moore's interviews with Australian historians and others about critical thinking, a similar picture of disciplinary differences regarding how academics relate to previous research emerges:

> From my informants in the other disciplines, the accounts took on a different flavour. Several of the historians, for example, thought that to be critical in history did not so much involve the 'rendering of judgments' on the arguments of others, as the ability to draw on various sources and materials to develop one's own arguments. (Moore, 2011, pp. 265-266)

If this is true, it should be a matter of degrees. Historians – and their students – obviously engage critically with previous research, but in comparison with some other disciplines, this may more often relate directly to the interpretations of sources. Preliminary results from an ongoing research project about critical thinking and the Bachelor thesis in five academic disciplines seem to lend some support to this notion. In this project, four colleagues and I are analysing 809 student theses selected in the Swedish quality assurance exercise of 2011–2014. In that randomized, double-blind review process, a total of 211 History theses from 17 universities were assessed by a panel of senior historians. They evaluated the quality of each thesis against 15 different rubrics, all drawn from the general qualification descriptors for the Bachelor degree (cf. Ekecrantz, et al, 2015). These descriptors, in turn, had previously been adapted from the Dublin descriptors as part of the Bologna process (Gallavara, et al, 2008). The one rubric that was given significantly lower averages than the others was the one about students' abilities to relate critically to previous research.[1]

Some of the student theses did of course get positive evaluations in this regard, along with comments like 'relates actively, critically and relevantly to previous research'[2] or 'significant reading of relevant research, which lays the foundation for comparative interpretations of some complexity'.[3] More common though, and corresponding to the relatively poor quantitative measures, were comments like 'poorly developed ability, and the student cannot relate to previous research other than on an empirical level'[4] and 'the literature is enough for a limited overview. However, the student is not able to use it critically [...]'.[5] All 211 theses had received passing grades in line with various local criteria prior to the external quality assurance exercise. It seems plausible that the described shortcomings had been counterweighed by other qualities, such as a sufficient use and analysis of historical sources, but this remains to be investigated further.

Regardless if these preliminary results can be generalized or not, most would arguably agree with the rather trivial observation that students of different disciplines are trained to interact with previous research in different ways. This, in turn, could serve as a starting point for a discussion about how individual disciplines such as History prepare students for generic research literacy and criticality.

Criticality and self
To study history is a self-reflective endeavour by default. Early on, all students of History are confronted with the notion of self in relation to presentism and anachronism (cf. Levisohn, 2015, p. 7). To try to understand pro-German sentiments in Europe in the 1920s and 30s without one's inherent lens of the subsequent Holocaust is a common example in teaching. Furthermore, all students majoring in History are exposed to the challenges of subjective and ideological historiographical uses of history. This adds to a more advanced understanding of the past, the discipline, research in general and of self. Thus, we can expect our students to be rather advanced

---

1 M = 1.91 on a 1-3 scale, where 1 = unacceptable quality, 2 = acceptable quality and 3 = high quality (n=211). Combined averages for all 15 rubrics: M=1.99 (SD=0.03).
2 Ref. ID: A-2013-03-2706, Archive of the Swedish Higher Education Authority (SHEA) [transl.].
3 Ref. ID: A-2013-03-2702, SHEA [transl.].
4 Ref. ID: A-2013-03-2713, SHEA [transl.].
5 Ref. ID: A-2013-03-2704, SHEA [transl.]

in their understanding of the issues of subjectivity and objectivity in research. They should be well equipped to assume a nuanced perspective on how research in general may be influenced or driven by ideological agendas, without necessarily rejecting its results. However, if the discussion above about criticality and others' research is valid, we may need to ask how well we prepare our students to scrutinize their own research, beyond their use of historical sources.

The hierarchy suggested here started out with criticality on the level of 'data'. Although source criticism in historical research is a highly complex endeavour that requires a lot of students and professional historians alike, the mere notion of bias in primary sources is a concept that is easily comprehended. All students enter higher education with some understanding of suspended judgement and that not everything can be taken at face value. 'Data' such as commercial messages and political propaganda may be obvious artefacts in this context, while published research and textbooks may be less so. Conversely, however, someone who has scrutinized the subjectivity as well as the strengths and weaknesses of others' research, should arguably be able to do so with regards to more obviously biased material. As for the level of criticality and self, related to one's own research, a similar asymmetry might conceivably be expected. If so, students who have reflected upon their own possible confirmation biases, and scrutinized their own possible misrepresentations of earlier research, should perhaps be able adopt the same approach with others' research.

Such a hierarchy cannot be stipulated *a priori*, but may if nothing else function as a heuristic in teaching. One way of using it is to use source criticism as a shared point of departure and approach a wider range of critical thinking from there, such as, for example through the level of 'others' research'. In the following I outline different ways to possibly go about this in teaching.

Students' academic critical thinking beyond historical sources

A teaching and learning activity that I have found profoundly effective is in-depth analyses of small sections of published work. In this activity several small groups of students are asked to choose different pieces of original research in areas that are relevant to what they are studying at the time. They then pick a random two page spread of each piece that contains at least a handful of references to previous research. Each group then maps individual arguments and discusses how they interpret the use of each individual reference on those two pages. What is this particular part of the text communicating? Is a factual statement supposedly supported by that literature? Does it signal that this other research is original, empirical work even if this is not stated explicitly? Is it a mere mentioning of existing literature, put forth as a service to the reader? What different interpretations could different reasonable readers make of it? And so on. After having put these alternative analyses on paper, I ask them to investigate these footnotes or parentheses the same way they would if they were historical sources. This time, though, the sources are digital and printed research, and the location is the university's library rather than an archive.

I currently use this activity in an undergraduate course in philosophy of science in educational sciences, where I first give an introductory lecture about the empirical underpinnings of some particularly influential work about feedback and student learning. I expand on a recent study where I found that layers upon layers of meta-studies and syntheses have come to misrepresent the nature of the primary research behind it (Ekecrantz, 2015). Through a Chinese whispers type process, decades of research about feedback and locus of attention in the workplace have been misrepresented as being about feedback and student learning. These sometimes rather blatant misrepresentations are discussed as being unintentional, and more so consequences of common scientific processes and the cumulative nature of research. Apart from highlighting the importance of methodological rigour in general, issues regarding intersubjectivity, transparency, confirmation

bias in research, criticality and suspended judgement can be addressed quite effectively via such real life examples.

When the students later on report back on their own findings, and get to hear about the other groups' findings, the students tend to become elated or upset − or both. In my experience, they have all (*sic!*) come across a range of serious problems in their respective expert accounts. This is regardless of the type of research they have analysed, be they doctoral theses, articles in prestigious journals or monographs published by high-end publishers. One common problem in the segments the students have scrutinized is that several references in question do not correspond content-wise with the arguments they are supposed to support. Occasionally this is obvious just from a quick review of the abstract, but other times they need to read the referenced literature at length. A more subtle problem is when the relationship between a specific argument and its references is ambiguous. An author may not explicitly claim that a referenced piece of work represents a large empirical study, but if several reasonable readers come to assume that this is the case, it still serves as a suitable starting point for analysis. Sometimes this work turns out to be merely an opinion piece or a non-substantiated comment made in passing – like many suggestions and ideas put forth in this text. Another rather common phenomenon is that stated insecurities and reservations in the original work are toned down, and thus are presented as more definitive.

This way, the students get to experience first-hand when respected researchers may not have been diligent enough regarding the work they are building their own argument on. All this makes for a learning experience that has the potential to change the way students think of published research and scholarly literature in general. Is this really the case? How do we know this? And, with what degree of certainty? One of the reasons why this experience tends to strike a chord is that the selection of research and supporting evidence is done haphazardly. It was not a prepared selection made by their professor to prove a point in class. The combined findings of the different groups creates a fuller picture of what the nuts and bolts of research may actually look like, including its many imperfections. In addition, I can attest that this activity also lends itself to serious self-appraisal by the teacher as well. Would our own research come out unscathed if it was subjected to this level of scrutiny? This question may be used in important discussions with the students about the conditions of published research. Sometimes researchers are perfectly diligent when it comes to central points of their work, while being less so in peripheral parts of their argument. When this happens, a piece of work may still hold up for its intended uses, in spite of shortcomings at the margin. This also mirrors the type of nuanced analyses History majors engage in with historical sources, where detected problems would not necessarily mean that a source should be dismissed in its entirety.

In the described course in philosophy of science in educational sciences, I round up the activity with a discussion about the text books in the students' own required reading. In this particular case, I have identified a few passages regarding student learning and learning styles, referring to the work of Kolb (1984) and others, that do not fully hold up when pitted against more recent research (e.g. Coffield et al, 2004). The main idea is to illustrate that not even the literature that I require them to read – and that will be part of the exam no less – is beyond critical scrutiny. And, that the necessary simplifications in any and all textbooks will always be at odds to some degree with the more nuanced and less assertive research behind it. The aim of this discussion is to underscore that the need for academic suspended judgement is not primarily about guarding against fraudulent research and low quality literature, but is rather to be understood as an academic state of mind of sorts.

Another alternative is to directly approach the same type of possible misrepresentation issues in the students' own research, i.e. on the level of criticality and self. In supervision of student theses, the students can be asked to submit a small section of their own work to this type of in-depth analysis. This could be done as a formative peer assessment, but in line with the mechanisms of the proposed hierarchy above, a self-assessment format might be even more effective if used successfully. In my experience, this requires precise instructions to make it clear that the aim is for the students to step back and review their own work as they would if they were analysing sources, and to try to draw from this experience. This could, for example, be achieved by asking the student to identify the references that they feel a future reader might misinterpret, regardless of reason.

Interdisciplinary criticality?

As a discipline, History may have a special role to play in the general critical thinking literature, as well as in the literature about disciplinarity. When it comes to History majors' abilities to competently partake in public debates about research in other disciplines, as discussed in the introduction here, more knowledge is required. I have argued for the idea that their relative expertise in dealing with primary sources could and should be extrapolated to other objects within and outside of History. As for specifist and generalist perspectives, it may be necessary to have been submerged as student researcher in a single discipline, but to become the competent layperson, polyhistor or renaissance wo/man, interdisciplinary competencies may just be the key. The 'jack of all trades, master of none' is not what we are looking for, but there are many opportunities to engage with interdisciplinary intersections that we do not always make full use of (Schwieler & Ekecrantz, 2017).

Historians are a highly heterogeneous group of teachers and researchers with regards to interdisciplinary competencies, and there are limits as to what we can reasonably expect of them. Some are highly specialized while others are more experienced in a variety of disciplines. However, all are obviously well equipped to engage in at least some aspects of interdisciplinarity with their students, including critical assessment of research in other academic disciplines. As a way forward, it may be necessary to outline a framework for such interdisciplinary criticality and to establish different degrees of realistic expectations thereof. For future research as well as for educational development, it might possibly be useful to think of it in terms of a Vygotskian zone of proximal development (see e.g. Glick, 2004). A child might be able to do some things without help, some things s/he is not yet able to do at all, and the zone in between (ZPD) is the things the child could potentially do with the help from an adult. As a paraphrase of sorts, we could label the corresponding aspect of academic critical thinking as the 'interdisciplinary zone of proximal development'.

Firstly, we would have an area of academic critical thinking that the students could fully engage in on their own, in this case historical research. Secondly, there would be a zone of research that students might be able to scrutinize critically at least partially with some help. One example could be a History major who needs help to understand the basics of statistics in quantitative research within Political Science or Sociology related to their own work. With such help, students might, to a degree, be able to assess many of the arguments independently, while still not being able to conduct such research themselves. That 'interdisciplinary zone of proximal development' could for instance be addressed in the teaching and learning activities described above by including literature from neighbouring disciplines or in supervision.

Lastly, there are areas that would go beyond the realm of what historians would normally engage with critically in research, such as Chemistry, theoretical Physics and many others. This, however,

is not to say that we and our students should stay away from research-related public debates on genetic engineering, climate change and nuclear energy. On the contrary. If anything, these debates would most definitely benefit from more people trained in classical source criticism taking part.

Correspondence

Stefan Ekecrantz
stefan.ekecrantz@su.se

References

Abrami, P., Bernard, R., Borokhovski E., et al. (2015). Strategies for teaching students to think critically: A meta-analysis. *Review of Educational Research,* 85 (2) pp. 275-314.

Arum, R. & Roksa, J. (2011). *Academically adrift: Limited Learning on College campuses,* Chicago, Ill. Bristol: University of Chicago Press; University Presses Marketing distributor.

Avery, J. (1994). Critical thinking pedagogy. *Inquiry: Critical Thinking across the Disciplines,* 14 (1) pp. 49-57.

Battersby, M. (2014). The competent layperson: Re-envisioning the ideal of the educated person. *Inquiry: Critical Thinking across the Disciplines,* 29 (3) pp. 4-12.

Battersby, M. & Bailin, S. (2015). Fallacy Identification in a dialectical approach to teaching critical thinking. *Inquiry: Critical Thinking across the Disciplines,* 30 (1) pp. 9-16.

Blasjo, M. (2004). *Studenters Skrivande i Tva Kunskapsbyggande Miljoer,* Stockholm: Stockholm University Press. Diss.

Carretero, M., Jacott, L., Limon, M., et al. (1994). Historical knowledge: Cognitive and instructional implications. In: Carretero, M. & Voss, J. (eds) *Cognitive and Instructional Processes in History and the Social Sciences.* New York and London: Routledge.

Chapman, A. (2017). Research and practice in History education in England. *The Journal of Social Studies Education*, 6(1) pp. 13-41.

Coffield, F., Moseley, D., Hall, E. & Ecclestone, K. (2004). *Learning Styles and Pedagogy in Post 16 Learning: A Systematic and Critical Review*. London: The Learning and Skills Research Centre.

Davies, I. (ed.) (2017). *Debates in History Teaching*, 2nd Edition. London and New York: Routledge.

Davies, M. (2013). Critical thinking and the disciplines reconsidered. *Higher Education Research & Development,* 32 (4), pp. 529-544.

Davies, M. (2015). A model of critical thinking in higher education. *Higher Education: Handbook of Theory and Research.* London: Springer International Publishing, pp. 41-92.

Davies, M. & Barnett, R. (2015). *The Palgrave Handbook of Critical Thinking in Higher Education,* London: Palgrave Macmillan.

Douglas, K., Sutton, R., Callan, M., et al. (2016). Someone is pulling the strings: hypersensitive agency detection and belief in conspiracy theories. *Thinking & Reasoning,* 22 (1) pp. 57-77.

Ekecrantz, S. (2015). Feedback and student learning? – a critical review of research. *Utbildning & Lärande / Education & Learning*, 9 (2), pp. 14-33.

Ekecrantz, S., Parliden, J. & Olsson, U. (2015). Teaching-research nexus or mock research? – Student factors, supervision and the undergraduate thesis in History. In: Ludvigsson, D. and Booth, A. (eds) *Enriching History Teaching and Learning: Challenges, Possibilities, Practice.* Linkoping: ISAK, Linkoping University, pp. 15-32.

Ennis, R. (1990). The extent to which critical thinking is subject-specific: Further clarification. *Educational Researcher*,19 (4) pp. 13-16.

Facione, P. (1990). *Critical Thinking: A Statement of Expert Consensus for Purposes of Educational Assessment and Instruction*. Millbrae, CA: The California Academic Press, pp. 1-20.

Fines, J. & Nichol, J. (1994), *Doing History 16-19: a case study in curriculum innovation.* London: Historical Association.

Gallavara, G., Hreinsson, E., Kajaste, M., Lindesjoo, E., Solvhjelm, C., Sorskar, A. & Zadeh, M. S. (2008). Learning Outcomes: Common Framework – Different Approaches to Evaluation Learning Outcomes in the Nordic Countries. *Joint Nordic Project 2007–2008, by the Nordic Quality Assurance Network for Higher Education (NOQA). ENQA Occasional Papers 15*: ERIC.

Glick, J. (2004). The history of the development of higher mental functions. In: Rieber, R. & Robinson, D. (eds) *The essential Vygotsky.* New York: Springer Science & Business Media, pp. 345-357.

Green, A. (2016). *History, Policy and Public Purpose: Historians and Historical Thinking in Government,* London: Palgrave Pivot.

Hounsel, D. & Anderson, C. (2009). Ways of thinking and practicing in biology and history. In: Kreber, C. (ed) *The university and its disciplines: Teaching and learning within and beyond disciplinary boundaries.* New York and London: Routledge, pp. 71-83.

HRC. (n.d.). *Critical Skills*. Available at: http://www.historyrelevance.com/critical-skills.

Huber, C. & Kuncel, N. (2016). Does college teach critical thinking? A meta-analysis. *Review of Educational Research*, 86 (2) pp. 431-468.

Kolb, D. (1984). *Experiential Learning: Experience as the Source of Learning and Development*, Englewood Cliffs, N.J.: Prentice-Hall.

Levisohn, J. (2015). Historical thinking – and Its alleged unnaturalness. *Educational Philosophy and Theory*, pp. 1-13.

Liu, O., Frankel, L. & Roohr, K. (2014). Assessing critical thinking in higher education: Current state and directions for next-generation assessment. *ETS Research Report Series* 2014, pp. 1-23.

McPeck, J. (1990). Critical thinking and subject specificity: A reply to Ennis. *Educational Researcher,* 19 (4), pp. 10-12.

Middendorf, J. & Pace, D. (2004). Decoding the disciplines: A model for helping students learn disciplinary ways of thinking. *New Directions for Teaching and Learning*, pp. 1-12.

Moore, T. (2011). Critical thinking and disciplinary thinking: A continuing debate. *Higher Education Research & Development,* 30 (3), pp. 261-274.

Moore, T. (2013). Critical thinking: seven definitions in search of a concept. *Studies in Higher Education,* 38 (4), pp. 506-522.

Murphey, D. (2011). 'Academically Adrift: Limited Learning on College Campuses'. *The Journal of Social, Political, and Economic Studies,* 36 (4), p. 498.

Niu, L., Behar-Horenstein, L. & Garvan, C. (2013). Do instructional interventions influence college students' critical thinking skills? A meta-analysis. *Educational Research Review,* 9, pp. 114-128.

Rosa, H. (2013). *Social Acceleration: A New Theory of Modernity*. New York: Columbia University Press.

Schwieler, E. & Ekecrantz, S. (2017). Towards a model of teaching disciplinary boundaries – History with Literature and Literature with History: Theoretical implications. *Arts and Humanities in Higher Education*, 16 (2), pp. 141-155.

Sharman, A. (2014). Mapping the climate sceptical blogosphere. *Global Environmental Change*, 26, pp. 159-170.

Shopkow, L., Diaz, A., Middendorf, J., et al. (2013). The history learning project "decodes" a discipline: The union of teaching and epistemology. In: McKinney, K. (ed) *The Scholarship of Teaching and Learning in and Across the Disciplines.* Bloomington and Indianapolis: Indiana University Press, pp. 93-113.

VanSledright, B. (2011). *The challenge of rethinking history education: on practices, theories, and policy.* New York: Routledge.

Wazeck, M. (2013). Marginalization processes in science: The controversy about the theory of relativity in the 1920s. *Social Studies of Science*, 43 (2), pp. 163-190.