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HISTORICAL REASONING

The Interplay of Domain-Specific and Domain-General Aspects

Carla van Boxtel and Jannet van Drie

Introduction

Reasoning is a key activity in many disciplines and related school subjects, such as physics and mathematics, but also economics, history, and geography. This chapter is about historical reasoning, which can be conceived as a process in which information from historical sources is used to reach justifiable conclusions about the past. In the 1990s historical reasoning became one of the core constructs in the cognitive-oriented research on the teaching and learning of history (e.g., Carretero & Voss, 1994; Leinhardt, Beck, & Stainton, 1994; Perfetti, Britt, & Georgi, 1995; Voss & Carretero, 1998). In the past decade, historical thinking and historical argumentation have also become important concepts in history education research (Ercikan & Seixas, 2015). Although there are differences, these terms all stress the fact that history learning is not merely about learning historical facts and chronology.

There is no agreed-upon definition of historical reasoning. We conceive historical reasoning as a coherent set of historical thinking activities that aim at reaching justifiable conclusions about historical phenomena according to the norms and practices of the discipline of history (Van Boxtel & Van Drie, 2018; Van Drie & Van Boxtel, 2008). Important components of the historical reasoning process include critical analysis and synthesis of information about the past—making use of historical concepts—to reach conclusions, and providing historical evidence to support these conclusions. Elsewhere (Van Boxtel & Van Drie, 2013) we have argued that historical reasoning is a key activity in the history classroom, because it enhances the appropriation of historical knowledge that can be applied in new situations and contributes to students' understanding of the constructed nature of history. The ability to reason historically is valuable for understanding and evaluating reasoning about the past that students come across in historical narratives and representations outside the classroom, such as in the media, at home, and in museums.

The domain-specific or domain-general character of historical reasoning is not an issue of much debate among scholars in the field of history education research. Historical thinking and reasoning are mainly approached from the idea that it concerns domain- or disciplinary-specific activities and competences. History is considered a distinctive academic discipline with its own body of concepts and key ideas, vocabulary, and ways of relating concepts and ideas and establishing warrants for truth claims and forms of inquiry (cf. Hirst, 1974). In his much-cited book *Historical thinking and other unnatural acts*, Wineburg (2001) characterized historical thinking and stated that it does not spring automatically from psychological development, but is an unnatural act that needs to be taught. An orientation to the past that is not informed by disciplinary means of investigation and forms of argument often reflects *ahistorical* thinking—for example, not taking into account the historical context when processing evidence (Wineburg, 2007). In the same line, other researchers have emphasized that thinking and reasoning historically require a deep understanding of how historical knowledge is constructed and of second-order concepts that structure the discipline of history, such as causation, change, and time (Maggioni, VanSledright, & Alexander, 2009; North, 2005; Stoel, van Drie, & van Boxtel, 2017). On the other hand, it is acknowledged that historical reasoning is an example of informal reasoning that also characterizes reasoning in other disciplines. Argumentation is an important characteristic of informal reasoning, because there is not one correct solution (Means & Voss, 1996; Voss, Perkins, & Segal, 1991; Weinstock, Neuman, & Glassner, 2006). One of the criteria of sound argumentation is that conclusions not only need to be supported with arguments based upon evidence but that one also has to take into account reasons that support the contradiction of the conclusion. When problems are ill-structured (lacking established problem-solving procedures and a single correct solution), which is the case in history, generic reasoning heuristics and metacognitive understanding and skills are believed to play an important role (Perkins & Salomon, 1989).

The discussion above raises the question of whether historical reasoning concerns a way of reasoning that is highly domain-specific or has much in common with informal reasoning and argumentation in other domains, at least in domains related to history, such as geography, civics, and economics. Answering this question not only contributes to our understanding of historical reasoning, but is also informative for the development of domain-specific and cross-domain curriculum design. We will argue that historical reasoning is a process that is to an important extent shaped by domain-specific strategies and knowledge, and applied to tasks that are characteristic but not exclusive to history. Furthermore, we argue that when people reason historically, they apply general strategies of argumentation and critical evaluation of information sources, but these seem to interact with the application of first- and second-order knowledge, and with an understanding of the constructed nature of history.

Our exploration of the domain-specific and domain-general facets of historical reasoning is informed by the work of Smith (2002). Smith (2002) discusses two

potential arguments for the stance that thinking is domain-specific. Thinking can be considered domain-specific when it hardly has procedural substance, being merely the application of domain-specific declarative knowledge. This stance is based upon the idea that thinking and reasoning are strongly determined by substantive knowledge that is unique in each discipline. Second, when thinking skills that are applied in a particular domain do have procedural content, the tasks might be so unique to the domain that there is no generality.

Below we examine three reasoning tasks characteristic of the discipline and school subject history: the evaluation of historical sources, the construction of a historical explanation, and the analysis of processes of continuity and change. For each type of task we discuss the strategic knowledge involved (and the underlying understanding of second-order concepts) and the role of first-order knowledge and argumentation strategies. The distinction between first-order knowledge (e.g., who, what, where, when, and chronology), second-order conceptual ideas that structure the discipline (e.g., causation, change, and evidence), and strategic knowledge of how to research and interpret the past (e.g., interpret within historical contexts, construct an evidence-based argument) is based upon the types of historical knowledge that are distinguished by VanSledright and Limón (2006). Furthermore, for each task, we explore whether the tasks and strategies involved are also considered key tasks and strategies in other school subjects that focus on human action and society: geography, economics, and civics.

Historical Reasoning Tasks

Smith (2002) argued that the domain-specificity of thinking and reasoning might be a result of tasks that are unique to a discipline. We use the term *task* following the definition of Crookes (1986), who defined a task as a piece of work or activity, usually with a specified objective, undertaken as part of an educational course, at work, or used to elicit data for research. This definition is applicable to both the work of historians and the activities of students in the history classroom. Important dimensions of a task are the processes involved in performance and the outcome. There is a clear outcome, which can be evaluated by peers or the teacher.

Which tasks are characteristic of the domain of history? Historians and students can reason about different things when they try to answer a historical question. They can reason about aspects of continuity and change, causes and consequences, and differences and similarities between historical phenomena or periods (Van Boxtel & Van Drie, 2018; O'Reilly, 1991). In an inquiry task, for example, students can be asked to construct reasoning about the changes in working and living conditions during the Industrial Revolution, based on their analysis of historical documents, images, and accounts of historians. Tasks can also ask for a critical analysis of a given instance of reasoning (e.g., critique a historical explanation that is provided in a newspaper article). Because conclusions need to be supported with historical evidence, historians evaluate the usability and reliability of

information from historical sources. In the history classroom, this ‘reasoning *about* historical sources’ (see Rouet, Britt, Mason, & Perfetti, 1996) is a key activity in document-based writing tasks. In these tasks students answer a historical question using primary source documents, culminating in an essay in which they provide historical arguments and evidence to draw their own conclusions (De La Paz et al., 2014).

Below, we discuss three reasoning tasks: the evaluation of historical sources, the construction of a historical explanation, and the analysis of processes of change. These tasks are the ones that have gained the most attention in history education research. We illustrate reasoning about causes and consequences and about change and continuity with episodes from the discourse of three students working on tasks about the development of Dutch parliamentary democracy. The triad consists of Ben, Senna, and Macha. They are students of 16–17 years of age in upper secondary education. They are in the highest track, preparing for university. We describe each episode in terms of the type of historical reasoning and historical knowledge that is involved and in terms of the argumentation process that takes place. Our analysis of the types of knowledge, procedures, and argumentation processes involved in each task will be used to discuss the level of domain specificity.

Evaluation of Historical Sources

Historians construct interpretations of historical phenomena by making inferences from sources. Examples of primary sources—produced in the time itself—are letters, diaries, books, government documents, pictures, film, archeological objects, or oral evidence. Historians also use interpretations of other historians (secondary sources). The distinction between primary and secondary sources is not absolute. Secondary sources can become primary sources when studying how—in a particular historical context—people interpreted historical events or themes. An important task in the context of historical inquiry is the evaluation of the usability and trustworthiness of information from sources. Historical sources often provide incomplete information and are mediated by persons living in another time. Each primary source only gives a partial account of an event, often only from a particular perspective, which is shaped by, for example, belief systems of the time or a person’s social position or religion. The Ottoman sultan Mehmed II who announces his conquest of Constantinople in 1453 gives a different account of this conquest than a soldier from the Ottoman army, a Greek Orthodox cleric who had to flee from the city, or a Venetian merchant.

Research on the evaluation of historical sources mainly focuses on the evaluation of documents. Wineburg (1991) studied how experts and novices investigated historical texts and distilled three heuristics or strategies. The first is considering the source of a document (sourcing). Who made it? What do we know about this person? Was the author a participant? Had he or she an interest at stake? Is it a public or private document, official or not official? This kind of information is important

because it can be used to predict the perspective the source will give on a particular event, which then can be checked during close reading of the source. A second strategy is placing the document in a temporal and spatial context (contextualization). Wineburg and Fournier (1994) argue that contextualization is important, because we are inclined to view the past through the lens of present values. They give the example of the Emancipation Proclamation, written by Abraham Lincoln. Lincoln's words, "I am in favor of the race to which I belong, having the superior position," can be interpreted in different ways. One has to construct a historical context for these words, looking at the occasion in which they were uttered, the location, the kinds of people who were present, things that Lincoln said at previous occasions, and the climate of opinion and the linguistic meaning of words in the 1850s. The third strategy that Wineburg mentions is comparing the information in multiple sources against each other (corroboration). In the process of evaluating the trustworthiness of a source and confirming or refuting specific interpretations, sources are compared, asking the question of where the information in the sources coincides or differs and why (Perfetti, Rouet, & Britt, 1999; Wineburg & Fournier, 1994; Wolfe & Goldman, 2005).

Research has shown that experts and novices differ in their knowledge of sources and sourcing, and that experts apply this knowledge when investigating historical sources (e.g., Wineburg, 1991; Rouet et al., 1996). Lee and Shemilt (2004) describe how students can make progress in their understanding of historical evidence. A recent study of Reisman (2012) shows particularly that the sourcing strategy can be effectively taught. Reisman points to the fact that this strategy can be easily demonstrated by discrete, concrete actions and practiced on a single source, whereas contextualization and corroboration require connections to prior knowledge and connections between multiple sources. De La Paz and Felton (2010) showed that students who received instruction about how to analyze historical sources (historical documents and cartoons) and answered the question about how the author's viewpoint may have an effect on his argument developed more sophisticated claims and rebuttals than students who did not receive this training. Nokes (2017) defines five levels for students' use of source information in their writing of a historical argument. At the highest level students critique documents using source information and use critique to strengthen their written argument.

Several researchers acknowledge the importance of first-order knowledge when evaluating sources (Reisman, 2012; Rouet, Favart, Britt, & Perfetti, 1997; Wineburg, 1998). Background knowledge facilitates contextualization and meaning making. It is not only detailed knowledge that facilitates this process of contextualization. In an expert study by Wineburg (1998), the historian without a large amount of detailed knowledge about the American Civil War had enough knowledge of the sequence of events, the major figures and antecedents, and aftermath of the war to create a context to explain the diverse collection of documents. In our own study with students in upper secondary education, we found that

particularly colligatory concepts, such as the Industrial Revolution or the Cold War, were used as tools to create a historical context when interpreting a historical document or image (Van Boxtel & Van Drie, 2012). For example, students who were successful in situating an unfamiliar cartoon about Stalin's proposal in 1952 to unite and neutralize Germany in an accurate historical context used a rich associative network of concepts and images (e.g., communism, Stalin, divided Germany) that were anchored to the colligatory concept 'Cold War.'

To what extent are the three strategies to evaluate historical sources that we discussed above unique for the discipline of history? Of course, the task of evaluating the trustworthiness of sources is not unique to history. Bråten, Helge, Strømsø, and Britt (2009) argue that not only tasks in the domain of history, but also out-of-school tasks (e.g., reading newspapers) and tasks in other academic domains (e.g., biology, social science, law, and medicine) require decision making regarding which sources to trust and which to distrust. They investigated the evaluation of sources of students reading multiple texts about climate change. They focused on the use of source characteristics to evaluate the trustworthiness of sources and the construction of relations between sources (whether they present, for example, similar, complementary, or contradictory perspectives). However, nothing is mentioned about the importance of contextualizing the sources. In their study about evaluating the trustworthiness of online sources, Barzilai and Zohar (2012) also mention the sourcing and corroboration strategy. Students in this study were asked to search for information to answer a question related to health and a question related to the environment. Students differed in the extent to which they noted and used source characteristics, such as the author name, the target audience, and the Google ranking. The source's trustworthiness was evaluated based on authority, expertise, the use of scientific evidence, and the source's perspective and bias. Contextualization is also not mentioned as a distinct strategy in the study of Barzilai and Zohar.

Several scholars in the field of social science, economics, and geography education mention source evaluation skills. Kim and Bednarz (2013), for example, consider the assessment of the quality of data, such as accuracy and reliability, an important component of critical spatial (geographical) thinking. They also mention the corroboration strategy: a dataset can be considered reliable when the accuracy of the set is confirmed by several sources. Sandahl (2015) states that critical thinking and source criticism are important aspects of thinking and reasoning in social science education but does not define the strategies involved.

We conclude that, although evaluating the trustworthiness of sources is not specific for the domain of history and sourcing and corroboration are also applied and taught in related subjects, placing a source in a temporal context (historical contextualization) is clearly a domain-specific strategy. Historical contextualization is particularly relevant in the context of a historical inquiry and requires the application of historical knowledge, such as knowledge of historical persons, events, developments, phenomena, and chronology.

Construction of a Historical Explanation

The construction of explanations for historical events and developments is widely acknowledged as a core activity in doing history (e.g., Carr, 1961; Hewitson, 2014; Woodcock, 2011; Lee & Ashby, 2000; Seixas & Morton, 2012; Van Drie & Van Boxtel, 2008). A causal explanation is constructed by relating conditions, context, and historical actors to the event or development that needs to be explained (Stoel, Van Drie, & Van Boxtel, 2015; Rozendal & Van Boxtel, submitted). The constructive nature of the explanation needs to be taken into account. Alternative explanations are always possible but need to be grounded in historical evidence.

Strategies that are mentioned in the research literature are identifying multiple causes (embedded in a network of interactions and relationships); analyzing individuals' motives and actions in the context of the broader context of the time; and making a distinction between direct and indirect causes, long-term and short-term consequences, intended and unintended consequences, and conditions that create circumstances in which a particular event is more likely to happen (Chapman, 2003; Halldén, 1998; Lee & Shemilt, 2009; Seixas & Morton, 2012; VanSledright & Limón, 2006; Woodcock, 2011).

An important characteristic of causal reasoning in history is that one also tries to explain actions of individual people within the historical context in which these actions take place. Historical empathy is one of the tools that historians apply in order to better understand motives and actions of historical actors. Several researchers emphasize that empathy not only involves the cognitive process of reconstructing the historical context, but can also involve emotions, for example when one tries to imagine how a person in the past may have felt or thought (see De Leur, van Boxtel, & Wilschut, 2017). When trying to understand motives and actions of historical actors, personal and present-day values can play a role. A possible flaw is presentist or anachronistic thinking. Bringing in personal experiences and ideas about current issues, however, can result in biased reasoning. Research has shown that this is particularly the case when reasoning about sensitive history. When historical issues are more vital in collective memory, students' reasoning is more prone to ethnic identity bias (Goldberg, Schwartz, & Porat, 2008). A study by Savenije, van Boxtel, and Grever (2014) found examples of how moral judgments can obstruct historical explanation and reconstruction.

The example below (Figure 8.1) illustrates how students try to distinguish between the present and the past. The episode is from a task in which three students investigated the question of why in the 1930s the Dutch national-socialist party (NSB) gained more support initially, while in the end the party was not successful. Students had to search for six websites that provided reliable information about the topic and give a common answer to the research question. In this episode students tried to make sense of the reasons why people in the Netherlands would support the national-socialist party. They first tried to construct a historical context. The students agreed that nowadays the publication of a racist magazine would be considered "weird," but that this was different back then.

1	Ben	(reads aloud), ha ha, for the ones who are fond of anti-Semitic propaganda there was a magazine
2	Ben	(surprised) But who is fond of something like that?
3	Senna	Yes
4	Ben	For the lovers there is a just a racist magazine
5	Macha	Yes of course there was something like that
6	Senna	Yes, indeed
7	Ben	But, when nowadays you would publish a racist magazine against Muslims or something like that, people would find it very weird

FIGURE 8.1 Historical reasoning episode in which the students construct a historical context for the growing support for the NSB

1	Senna	Yes, okay, let's start with why, initially, the NSB got a lot of support. Why, initially it gained a lot of support?
2	Ben	There have to be at least 6, isn't it?
3	Macha	Because of the crisis, isn't it?
4	Senna	Because of the crisis?
5	Macha	Yes, that's what I think
6	Ben	Ehm, look here, where was it, people who felt that they had been shortchanged?
7	Senna	Yes, with the particular point of view, that
8	Ben	That's the same with, nowadays, the PVV*, that people blame other people, although they themselves didn't achieve anything.
9	Ben	You have that type of people in the train, they blame others for their misery
10	Macha	In the train?
11	Ben	Yes, when I travel by train, you always have those people who have a conversation, those people who have difficulties all their lives, and that's other people's fault

* The PVV (Party for Freedom) is a right-wing, nationalist political party in the Netherlands.

FIGURE 8.2 Historical reasoning episode in which the students try to understand the growing support for the NSB

Historians reason less with general laws or mechanisms, because every time and situation is considered unique. However, reasoning with mechanisms is not completely absent in history. In the next example presented in Figure 8.2, Ben also seemed to reason with a mechanism when he tried to make sense of why people in the past joined the national-socialist party. He explained how the crisis made people vote for a party like the NSB: when people are in difficult circumstances, they can feel they have been shortchanged, and blame others for that. He thought the same mechanism is at work with the contemporary right-wing party in the Netherlands.

The probabilistic model of explanation, which is one of the models used in history, focuses on mechanisms that make the occurrence of an event more probable (Paul, 2014).

Several researchers emphasize that intentions and structures interact and ‘co-produce’ events (Chapman, 2016; Hewitson, 2014). A pitfall that is characteristic of causal reasoning in the domain of history is reasoning from hindsight. The significance of particular causes can be overestimated, because we know the outcome. That is why some historians also apply counterfactual thinking. Would the event also have taken place when the potential cause did not happen?

The reasoning in Figures 8.1 and 8.2 illustrates that students are inclined to connect information about the past to their personal experiences or knowledge about current phenomena. In Figure 8.1 this is functional because in this way students explore the differences between our current way of thinking and the way of thinking in the past. In Figure 8.2 it is functional because it helps to define a possible mechanism that contributes to our understanding of why people joined a national-socialist party. Thus, using personal experiences does not necessarily result in presentist thinking.

1	Ben	Here it says, the aim of the NSB to breakthrough as a fascist breakthrough party failed as a result of the pillarization.
2	Ben	Pillarization*, that's what we talked about
3	Senna	yes
4	Ben	yes, but he also argues, he says a lot, but also that the NSB was actually pretty large.
5	Ben	It was the same as with socialism, liberalism and communism.
6	Ben	It was a normal political movement.
7	Ben	It appealed to people and they also had ideals for a better country, the same as other parties.
8	Ben	Back then, nobody knew that it would end up with the Holocaust, something terrible, but
9	Macha	Here it says, because they became more extreme, the number of adherents decreased.
10	Ben	He says, he denies it, here he says
11	Senna	Thus we have two different
12	Ben	Here he says, they have always been extreme
13	Macha	That they didn't become worse?
14	Ben	At the beginning, he argues, there already were murders, and still people approved
15	Ben	Also the malpractices in the neighboring country of the Nazis were approved
16	Senna	Yes
17	Macha	But here it says that the main cause of the decrease was the radicalization that took place since 1935 which resulted in the alienation of many adherents.
18	Ben	Oh, here it is. Because of the pillarization many people stayed with the party of their pillar, and did not switch to the fascist party
19	Senna	Yes, but actually, that is not a reason why the number of adherents decreased.
20	Macha	No

* Division of Dutch society in four groups (pillars), roman-catholics, protestants, social-democrats and liberals, who held different views on life, religion and politics.

FIGURE 8.3 Historical reasoning episode in which the students identify causes of the decline of the NSB

Understanding of causation in history and of strategies to explain historical phenomena is not enough to construct an explanation. This understanding and these strategies can only be applied when there is enough first-order knowledge. Causes and consequences are described with facts and concepts, and temporal relations (chronology) need to be identified in order to establish causal relationships.

An example of how students try to construct a causal historical reasoning is presented in Figure 8.3.

In this episode students used two different websites to construct an explanation. They identified multiple causes for why the NSB was not successful. Ben mentioned the pillarization of Dutch society (lines 1 and 18) and Macha the radicalization of the party after 1935 (lines 9 and 17). In lines 5 to 8 Ben used knowledge of historical facts and concepts to reconstruct the historical context. This contextualization enabled a historical perspective on the fact that at the beginning the NSB was a large party. Ben was cautious not to reason from hindsight: “Back then, nobody knew that it would end up with the Holocaust, something terrible” (line 8).

The construction of a historical explanation is a multilayered activity. On the one hand there is the production of a set of assertions about causes and consequences, using first-order and second-order knowledge. On the other hand, it consists of the development of an argument (van Boxtel & van Drie, 2018; Kuhn, Weinstock, & Flaton, 1994). Assertions and claims have to be justified and can be criticized. Building upon studies that analyze argumentation in student dialogue (e.g., Macagno, Mayweg-Paus, & Kuhn, 2015; Osborne, Erduran, & Simon, 2004; Van Drie, Van Boxtel, & Van der Linden, 2006) we can discern claims, grounds, counter-arguments, and critical questions. Ben provided grounds for his claim that the NSB was a large (and normal) party and for his counter-argument that the party was radical from the beginning. Macha did not justify her claim that after 1935 the NSB radicalized. In lines 10 to 15 Ben pointed out that the author of the website provides contradicting information, because on the one hand it is stated that the party was extreme from the beginning, whereas on the other hand it states that the party lost many adherents because it became more extreme. He identified continuity, and illustrated this continuity with concrete details. This analysis reduced the validity of the claims made on this website. Here, the fact that Ben acknowledged the importance of a coherent argument and was able to recognize internal inconsistency contributes to the evaluation of potential causes of the decline of the NSB.

Causal reasoning is of course not unique to the discipline of history. The identification of (multiple) causes and consequences of societal issues is also considered a key strategy in social science education. Sandahl (2015) describes causation as one of the five second-order concepts that are specifically relevant for social science education. Goldthorpe (2001) discusses three steps that need to be taken in causal analysis in sociology: establishing social regularities that form the explananda, identification of the mechanisms that generate the causal effects, and hypothesis testing.

He emphasizes that causal analysis involves attention to the underlying objectives and decisions of individuals acting in society. In economics education, students also have to construct or apply theories, mechanisms, or models to explain economic phenomena (e.g., Voss, Blais, Means, Greene, & Ahwesh, 1986). For example, students are asked to identify the financial consequences of a particular business strategy (Slof, Erkens, Kirschner, Janssen, & Jaspers, 2012). Furthermore, scholars in the field of geography education address causal reasoning. Favier and van der Schee (2012), for example, investigated an intervention in which students used Geographic Information Systems (GIS) to build a model that can explain the market area of services such as gyms and supermarkets, using generalizations such as “the size of the market area of services is positively influenced by the quality level of those services and negatively influenced by the price.” In human geography and social anthropology, scholars—like those in history—try to interpret behavior that is founded on premises different from our own and emphasize the importance of not assuming that people behave and think as we do (see Tosh & Lang, 2006).

To conclude, both in history and related subjects such as geography, social science, and economics, the causal analysis of human actions and societal developments involves the identification of multiple causes, making a distinction between different types of causes and consequences (e.g., long term and short term). Characteristic of history is a more inclusive approach, because it does not foreground one societal dimension, but includes the political, economic, and cultural dimensions. Furthermore, in history, students focus less on regularities and are not asked to apply theories, mechanisms, and models to explain phenomena. The focus is more on explaining singular events, which are explained by situating them in the broader historical context and considering the perspectives (thoughts and feelings) of the historical actors involved. In history, repeatable testing of expectations against the observed world is not possible, because the past reality is gone. This means that the soundness of a historical explanation can only be evaluated with reference to the strengths of the arguments provided and whether the explanation addresses alternative explanations.

Analysis and Interpretation of Historical Change

Stearns (1998) stated that understanding of change over time is the most important aim of doing history. Historians analyze historical change by considering its tempo (continuous or revolutionary), impact, and nature (e.g., political or cultural change). Historians often use colligatory concepts that are actually an analysis of a process of change. For example, the term *Industrial Revolution* makes clear that the industrialization was a process of change with a high impact on society. Historians also evaluate changes by interpreting them as processes of progress or decline (Counsell, 2011; Lévesque, 2008) or by identifying ‘turning points.’ The analysis of historical change can also focus on how people in the past experienced particular changes themselves. The German historian and theorist of history Koselleck and

the French historian Braudel introduced thinking in terms of layers of time, based upon a complex, multilayered notion of temporality (Zamito, 2015). There are several levels of time of different duration and tempo co-present at the same time. A distinction can be made between the short-term event, mid-term trends and the structure of the *longue durée*. These, and related, concepts, have become important tools in historians' analysis and interpretation of historical change.

Philosophers of history and history education researchers do not provide a clear definition or an agreed-upon set of strategies involved in the analysis and interpretation of processes of change and continuity. In history education research, change and continuity are considered metahistorical concepts that structure the discipline of history (Lee, Dickinson, & Ashby, 1998; Lévesque, 2008; Limón, 2002; VanSledright, 2010; Seixas & Morton, 2012). A higher level of understanding of these concepts is believed to result in higher-level historical thinking and reasoning. This includes the understanding that change and continuity are interwoven, that changes can take place in different realms of society and can be evaluated differently, and that periodization is a process of interpretation. For example, different dates can be given for 'the end' of the Roman Empire. Counsell (2011) concludes that, whereas there are shared reference points concerning the kind of analysis one engages in when answering a 'Why...?' question, this is not the case with change and continuity. The analysis and interpretation of historical change also demands the application of knowledge of historical facts, concepts, and chronology. This knowledge is needed to describe what exactly changed, and what stayed the same.

Figure 8.4 is an episode from the task "Foundation of Dutch democracy", which asks students to select out of three historical documents (Plakkaat van Verlattinghe, 1581; Pamflet 'Aan het Volk van Nederland, 1781; the revised Dutch constitution of 1848) the document they consider the most important foundation for Dutch parliamentary democracy and that should be included in an exhibition in the Dutch House of Democracy. We chose this episode because it illustrates how students' second-order knowledge, in this case their understanding of historical change, more particularly their understanding of how a historical development originates, shapes their reasoning.

In this episode students discussed how they can understand the term *foundation*. When is something a foundation for Dutch democracy? This question is important in order to answer the question that was presented in the task: When did the development of Dutch parliamentary democracy start? The reasoning developed when Ben disagreed with the claim of Senna that the second historical document (the Pamflet of 1781) is the most significant foundation. He claimed that it is not a foundation, but a direct cause (line 7). It is not clear why he thought of this event as a direct cause, because this term seems to be misplaced. Then Senna (line 9) asked what is meant by 'foundation.' According to Ben, a foundation is when it (democracy) is actually there. Senna gave a counter-argument by stating that without this event – she referred to the Pamflet of 1781, which she considered the main foundation—it (democracy) wouldn't be there. This is an

example of counterfactual reasoning. Would there have been democracy without the events in 1781? Ben responded with a counter-argument. In line with his idea that democracy originates at the point where there is actually an administration with democratic features, he identified the results of the Pamflet of 1781 as a change that did not last (line 13). He used first-order knowledge that he acquired from the contextual information that was given about the Pamflet of 1781: The democratic administration that was installed disappeared because of Napoleon. Ben responded with the same kind of question as had been asked by Senna: “but then we have the question: what do we mean with arises?” (line 15). Ben repeated his idea: when something is actually there. Senna gave a counter-argument. She

1	Senna	I think the second is the most significant
2	Macha	yes I agree
3	Senna	it is about which is the most significant
4	Ben	no that's not what it says, at least I didn't
5	Macha	most significant foundation
6	Senna	yes, it says most significant
7	Ben	foundation, that is, this is not a foundation, its' a direct cause I think, but
8	Macha	(unintelligibly)
9	Ben	yes, I think that's a foundation
10	Senna	what is a foundation, it is about what is in the appendix, isn't it?
11	Ben	a foundation is how it arises, thus then you can say it was there
12	Senna	but, when this event would not have taken place, then
13	Ben	but that's not the case here, here they are calling the people and then it temporarily happens, but then it disappears again because of Napoleon
14	Senna	yes, but when that would not have happened
15	Ben	arises, yes okay, but then we have the question what do we mean with arises?
16	Ben	I think it arises when it is really there, when democracy arises is the moment that democ..
17	Macha	no
18	Senna	no, I think arising goes slowly, almost in small steps
19	Macha	yes
20	Ben	yes, okay, but it
21	Macha	that something is there
22	Ben	you know
23	Macha	something develops
24	Ben	yes, that is correct, but all indirect causes, at least
25	Ben	yes, perhaps I am more scientific, I just want to have a precise point, then it was there and of course I understand that that is not the case

FIGURE 8.4 Historical reasoning episode about the ‘foundation’ of Dutch parliamentary democracy

thought that *arising* refers to a process that goes slowly, in small steps. Then Ben concluded that she was right and that he would like to see an exact starting point, but he knew that this is not the case. When he said, “I am more scientific” (line 25), he might have referred to the idea that in science you have to come up with an exact starting point. In this episode students clearly reasoned with their understanding of historical developments. The students do not seem to be aware of the fact that their different interpretations depend on how they conceive of the start of democracy—with people actively pursuing it or with its realization—and that both can be valid ways of reasoning.

A historical argument does not only attend to arguments and evidence that support conclusions, but also to opposing arguments and to other perspectives (see also Monte-Sano & De La Paz, 2012). From this perspective, the reasoning episode in Figure 8.4 contains rather high-level argumentation. Students came up with several counter-arguments (lines 7, 12, 13, and 18) and asked critical questions (lines 10 and 15) relevant to resolve the problem. Furthermore, the argumentation was on a metalevel, because it was not about the question of which document can be considered the most significant, but about the question of when a historical development actually starts. The counter-arguments were grounded in students’ understanding of processes of change and continuity and their first-order knowledge about the topic. The sequence of claims, counter-arguments, and critical questions were generated based upon students’ second-order knowledge.

To what extent is the analysis and interpretation of processes of continuity and change unique for the discipline of history and for the school subject history? In sociology and political science, theoretical models are used to conceptualize processes of change and continuity. Political change, for example, can be explained by political culture theory or by rational-choice theory (Eckstein, 2000). Lieberman (2002) argues that political change arises out of friction among mismatched institutional and ideational patterns. He suggests that changes should not be understood solely in terms of variables and ordered patterns, but more in terms of configuration, friction, and interaction. This approach comes closer to how historians approach changes in society. Although continuity and change are reflected upon in sociology and political science, in most curricula for social studies, and in research about the teaching of these subjects, change and continuity are not presented as key concepts. The focus is more on explaining processes of change using abstractions and theoretical models. In geography education literature too, the analysis of continuity and change is not explicitly mentioned as a key component of geographical reasoning (Hooghuis, van der Schee, van der Velde, Imants, & Volman, 2014). Gregg and Leinhardt (1994) emphasize that geographical phenomena (e.g., populations, landscapes) continuously change, making the task of describing, explaining, and predicting more complex. It is not described, however, how students can do this.

To conclude, the analysis of aspects of continuity and change can be considered as highly domain-specific. First, this analysis seems to be more central to history than to related subjects such as social science, geography, and economics. Second,

historians have developed several concepts and strategies to conduct such an analysis, and these concepts and strategies can be considered important components of the second-order knowledge students need to reason about change and continuity. Finally, the construction or evaluation of reasoning about changes and continuity over a longer period of time requires a lot of historical knowledge about historical events, developments, and chronology.

Conclusion and Discussion

We have explored the domain-specificity of historical reasoning by looking at the knowledge and argumentation processes involved. Our analysis of the three reasoning tasks shows that historical reasoning involves the application of knowledge of historical facts, concepts, and chronology. In particular, the process of historical contextualization—an important aspect of the evaluation of historical sources and reasoning about causes—is to a large extent determined by the application of historical knowledge. However, historical reasoning is more than the application of this first-order knowledge. Domain-specific second-order and strategic knowledge are also applied, which supports the domain-specific view on reasoning. Knowledge of domain-specific metaconcepts that define the structure of the discipline (e.g., historical evidence, change, and causation) and related strategies play an important role in the reasoning process.

The question was raised of to what extent the strategies demanded by historical reasoning tasks are unique to the discipline or school subject. We pointed out that the strategies of sourcing and corroboration are also described in research on the evaluation of online sources or sources about present-day phenomena. Historical contextualization, however, seems to be a strategy that is more unique for the domain of history. In history education research, this strategy is described as a complex activity. It is not yet described as a clear and agreed-upon strategy, and it seems to be heavily shaped by the application of first-order knowledge. More research is needed to investigate to what extent we can teach the application of historical contextualization and whether the ability transfers to other (historical) topics.

The task to construct an explanation is not unique for the domain of history, and some of the strategies that are mentioned by history education researchers are also mentioned in other social studies subjects. However, the stronger focus on singular events and actions of individuals, instead of on regularities and mechanisms, characterizes causal analysis in history. In other social studies subjects, theories and models play a more important role in the causal analysis of phenomena in society. Furthermore, (historical) empathy is not much applied in other domains.

The analysis and interpretation of processes of change is a reasoning task that is perhaps most unique to the domain of history. In other domains there is less theorizing about what it means to analyze processes of change. Although few history education scholars formulate reasoning about continuity and change in terms of distinct strategies, the literature contains rich descriptions of what it means to

understand historical continuity and change. It is at least remarkable that in the field of history education research, reasoning about continuity and change did not gain much attention.

The fact that historical reasoning can be considered domain-specific, because both domain-specific strategies and first- and second-order historical knowledge are applied, does not mean that historical reasoning does not demand or is not shaped by more domain-general strategies. Because historical reasoning is a form of informal reasoning, general processes of argumentation and critical evaluation of information sources are important aspects. Our discussion of Figures 8.3 and 8.4 illustrates the interplay of argumentation and the analysis of historical phenomena. When students give counter-arguments or ask critical questions, for example, we can see that they apply their understanding of second-order concepts of history or their strategic knowledge. This knowledge seems to 'enable' high-level argumentation, which contributes to high-level historical reasoning. On the other hand, teaching students about argumentation—for example, the need to support claims with arguments and the need to beware of possible counter-arguments and of potential flaws, such as bias or inconsistency—may encourage students to deepen or critically evaluate their analysis, resulting in the construction of a higher-level historical reasoning. But this approach will only make sense when students acknowledge the interpretational nature of historical reasoning and know how they can deepen their analysis, such as through analyzing what types of causes can be given for historical events or how historical developments can differ from one another. Researchers in the field of history education assume that when students better understand the constructed nature of history and have knowledge of scientific criteria for evaluating the quality of historical interpretations, their reasoning and argumentation will be of a higher quality (e.g., Maggioni, VanSledright, & Alexander, 2009; Stoel et al., 2015). There is, however, not much empirical research to support this claim.

We think that the interplay of more domain-specific and more domain-general components of historical reasoning has implications for instruction and scaffolding. Instruction and scaffolding might be more effective when attention to critical thinking and argumentation skills that can be applied in different domains is combined with attention to second-order concepts and strategic knowledge. We adopted this approach in a study on the effects of a writing instruction, in which students were instructed how to write an argumentative letter (domain-general) and how to write an argumentative letter in history to establish historical significance (integrating domain-general and domain-specific aspects) (Van Drie, Braaksma, & Van Boxtel, 2015). Students who received this integrated instruction showed higher-quality historical reasoning in their texts, compared with students who received general writing instruction.

More research is needed to investigate how first-order knowledge, knowledge of metahistorical concepts and strategies, understanding of the nature and construction of historical knowledge, and knowledge of argumentation in written and oral forms affect the quality of historical reasoning.

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