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van Boxtel, C.; van Drie, J.

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Historical Reasoning: Conceptualizations and Educational Applications

Carla van Boxtel and Jannet van Drie

University of Amsterdam

Within the field of history education, historical reasoning is one of the constructs regularly used to define both goals of history education and the activities that students should engage in to learn history. Engaging students in historical reasoning is an important task in enhancing their understanding of historical events, situations, persons, and developments (van Boxtel & van Drie, 2013; van Drie & van Boxtel, 2008). For example, by analyzing causes and consequences we better understand historical events such as the granting of city rights by a count in the Middle Ages or opening of the checkpoints in the Berlin Wall by the East German authorities in November 1989. Reasoning about these events contributes to the development of historical understanding and the appropriation of knowledge that can be used to interpret new information about the past, both in and outside of school. Furthermore, it is argued that the ability to construct or evaluate historical reasoning is a valuable competency or skill that helps students to orientate in the present and to participate in society as a citizen (Barton & Levstik, 2004; VanSledright, 2010). The ability to reason historically enables students to deconstruct representations of the past that they encounter in daily life and in the media. It supports the analysis of current problems or changes in society and reflection on intended and unintended consequences of human action.

This chapter begins with conceptualizations of historical reasoning that can be found in research literature on history education. We discuss them using a framework that we developed to define types and components of historical reasoning and the factors that shape the quality of this reasoning. This framework conceives historical reasoning as an integrative and socially situated activity. We explore how historical reasoning relates both to historical argumentation and to historical thinking, two other central constructs in the research literature that partly overlap with the construct of historical reasoning. Next, we discuss empirical studies that shed light on how historical reasoning is shaped by students' understanding of historical metaconcepts, substantive knowledge, understanding

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of the nature of historical knowledge and knowing (epistemological beliefs), reading and writing abilities, and interest in history. It appears that there are many assumptions about these relationships, but empirical evidence remains scarce. Most research that we discuss uses cognitive theories of learning, but we also pay attention to the sociocultural perspective—how students' historical reasoning also is affected by the context of the classroom, the educational system, and the broader historical culture in which history education is embedded. This also means that our conceptualization of historical reasoning is culture-specific, because it is grounded in studies that are conducted in a Western context. Lastly, we discuss promising pedagogies to enhance students' historical reasoning in the classroom, focusing on insights from empirical studies.

Conceptualizations of Historical Reasoning

Reasoning is a subcategory of the broader concept of higher-order thinking, which comprises mental activities such as conceptualizing, evaluating, and decision making. These thinking activities largely overlap. Reasoning is a form of thinking or a set of thinking activities aimed at reaching justifiable conclusions (Holyoak & Morrison, 2012; Moshman, 2013). New information is derived from information that is provided or collected to draw a conclusion that must be supported with arguments. The debate about the extent to which the ability to reason is domain-specific is ongoing. On the one hand, some scholars emphasize that research has shown that when problems are ill-defined, which is often the case in the domain of history, generic reasoning heuristics and metacognitive understanding and skills play a role (Perkins & Salomon, 1989). Ill-defined or informal reasoning problems lack established problem-solving procedures and verifiable single solutions, and reasoning about such problems typically takes the form of argumentation (Weinstock, Neuman, & Glassner, 2006).

Supporting claims with evidence is an important component of reasoning in various domains. The domain-specific perspective emphasizes that the use of historical sources to reach conclusions about historical events and the evaluation of the usability and trustworthiness of historical sources require knowledge of how these activities are performed in the particular domain of history. In history, evidence is often incomplete, uncertain, inconsistent, context-specific, and mediated through other people (Kuhn, Weinstock, & Flaton, 1994). Furthermore, the information concerns time periods that differ from the current time period; thus, individuals must engage in historical contextualization.

The same holds for cause-and-consequence reasoning, which is an important type of reasoning in several domains. In the sciences, causal explanations are constructed through controlled experimentation. Potential causal relationships are tested through systematic variations in one variable at a time. Historians, however, explain events that already happened and mainly particular cases rather than classes of phenomena. Criteria that are used to assess the quality of historical explanations include coherence, complexity of the explanation, clarity of argumentation, and the extent to which the explanation draws on historical facts.

Assertions about causes and consequences need to be supported with examples, details, and quotations from or reference to historical sources. Thus, history has its own epistemic norms and practices making it an epistemic system (Goldman, 2011). The epistemic system of history, however, cannot be easily determined because epistemic norms and practices might differ among, for example, positivist, narrativist, and postmodern approaches to history or different subfields such as cultural or economic history. The discipline contains a variety of scholarly practices (Paul, 2011).

In the 1990s, historical reasoning became one of the core topics in cognitive-oriented empirical history education research. Researchers compared experts' and novices' reasoning and studied reasoning about history texts and documents and students' causal reasoning about historical events (see the volumes edited by Carretero & Voss, 1994; Leinhardt, Beck, & Stainton, 1994; Perfetti, Britt, & Georgi, 1995; Voss & Carretero, 1998). Several definitions of historical reasoning were used in these studies. For example, Perfetti et al. (1995) connected historical reasoning to the broader construct of historical literacy, which they defined as the ability to "reason about historical topics—to place them in more than one context, to question the source of a historical statement, to realize that more information is needed to reach a conclusion" (p. 5). Leinhardt, Stainton, Virji, and Odoroff (1994) defined historical reasoning as "the process by which central facts (about events and structures) and concepts (themes) are arranged to build an interpretative historical case" (p. 134), which requires analysis, synthesis, hypothesis generation, and interpretation. Other scholars focused on particular types of reasoning such as reasoning about historical documents, reasoning about causes and consequences, or analogical reasoning.

Based on these conceptualizations and our own research on students' reasoning during historical inquiry tasks, we developed a framework to conceptualize and analyze historical reasoning in the classroom (van Boxtel & van Drie, 2013; van Drie & van Boxtel, 2008). Our framework attempts to integrate the ideas of scholars who focus on particular types of reasoning or reasoning with particular second-order concepts of history, such as change or causation, and those of scholars who focus on historical argumentation and the use of historical evidence. Conceiving historical reasoning as an activity that is detectable in speech or writing, we discern three types and six components of historical reasoning (see Figure 6.1).

Historical reasoning attempts to reach justifiable conclusions about processes of continuity and change, causes and consequences, and/or differences and similarities between historical phenomena or periods. In reality, these types of reasoning often merge. Historical reasoning consists, on the one hand, of a coherent set of assertions about temporal and causal relationships that provides an answer to a particular historical question and utilizes substantive and metahistorical concepts and historical contextualization. On the other hand, it consists of the development of an argument to build a case for a particular interpretation or answer (Voss & Wiley, 2006). A disciplinary historical argument is developed through analysis and critical evaluation of available historical interpretations or of primary sources. It pays attention not only to arguments that support conclusions but also to opposing arguments and to other perspectives.

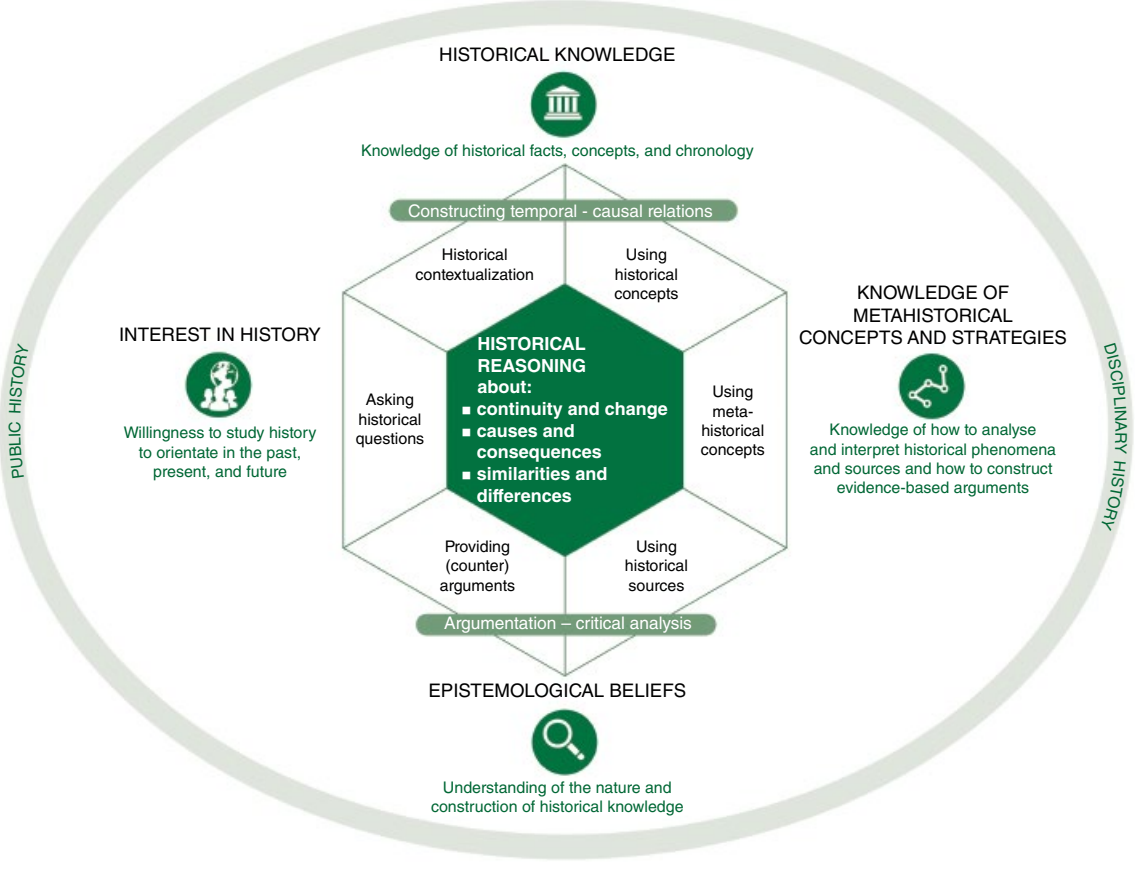

Figure 6.1 Types and components of historical reasoning and individual and sociocultural resources for historical reasoning.

Most research on historical reasoning focuses on working with historical sources. Rouet, Britt, Mason, and Perfetti (1996) made a distinction between reasoning *about* historical documents, which involves the evaluation of information from a document on the basis of document type, and reasoning *with* information from documents to solve a historical problem. Figure 6.1 shows that in our conceptualization of historical reasoning, reasoning about historical sources is subordinate to reasoning with information from these sources. We believe that reasoning about sources serves a function in the construction or evaluation of reasoning about processes of continuity and change, causes and consequences, and differences and similarities between phenomena and periods (types of reasoning located in the center of our figure). Studies on reasoning about historical sources often build on Wineburg's (1991) introduction of three reasoning heuristics relevant to the evaluation and use of historical sources: contextualizing, sourcing, and corroboration (e.g., Britt & Aglinskas, 2002; Leinhardt & McCarthy Young, 1996; Nokes, Dole, & Hacker, 2007; Reisman, 2012; Rouet, Favart, Britt, & Perfetti, 1997; Wineburg & Reisman, 2015). These studies generated interesting insights into the effects of disciplinary expertise on the use of these reasoning strategies, students' proficiency in these strategies, and effects of particular teaching approaches.

Of the three types of historical reasoning located in the center of Figure 6.1, causal historical reasoning has gained the most attention in history education research. Voss and Carretero's (1998) edited volume contained eight chapters about causal reasoning. For example, Lee, Dickinson, and Ashby's (1998) study asked students to answer the question of why the Romans were able to take over most of Britain. The study showed that some students seemed to think that a reason for action in itself explains the outcome and that students constructed different causal maps. Whereas some students focused on a single cause, others constructed a multicause model. Limón and Carretero (1998) explored how experts and novices addressed structural and personal factors. More recently, Lee and Shemilt (2009) presented a progression model for understanding historical causation in which they distinguished six stages. Students display a more sophisticated understanding of causation when they are aware of unintended consequences and are able to engage in "possibility thinking" (see also Chapman, 2016). Stoel, van Drie, and van Boxtel (2015) defined causal historical reasoning as the construction of a historical explanation through asking causal-oriented historical questions, constructing a historical context to explain individual actions and events, using substantive (first-order) and second-order historical concepts and strategies related to causality, and providing arguments and counterarguments based on historical evidence to support causal statements.

Not only historical explanations but also comparisons are produced through a process of reasoning. Teachers make many kinds of comparisons, for example, between persons, situations, ideas, developments, societies, or periods. Comparisons can help to identify recurring causal mechanisms but also to discover what is distinctive of a particular situation or development. Empirical research on comparative or analogical reasoning in the context of history education is scarce. McCarthy Young and Leinhardt (1998) analyzed how history teachers in 8th- and 11th-grade classrooms attempt to make unfamiliar items

and events understandable by means of processing them in terms of familiar items and events. Two historical events or structures can be directly compared (for example, pre-World War II conditions with pre-World War I conditions). In contextual analogies, historical events or structures are compared to events or structures outside the domain of history that students know about, in order to help evoke the impact or context (for example, the meaning of the "Iron Curtain"). When people compare past phenomena or past and present situations, they always risk overlooking microlevel differences, such as cultural, political, or economic variations (Mumford, 2015).

Although historical change is at the heart of the discipline of history, there are few empirical studies related to reasoning about change (Counsell, 2011). Not much is known about the way in which students analyze processes of change and come to conclusions about change—for example, how they characterize the nature of a particular change (e.g., revolutionary or not, progress or decline). Students in primary schools are able to describe changes over time based on visible physical factors such as transport or clothing (Barton & Levstik, 1996; de Groot-Reuvekamp, van Boxtel, Ros, & Harnett, 2014). Lee (2005) indicated that younger students often consider change to be an event instead of a process. Barton's (2008) study showed that children tend to think of historical change as a rational development toward the present and perceive this development as a process of progress. Students' understanding of change is likely to shape their analysis of particular instances. Studies on students' reasoning about processes of change, however, often focus on how students *explain* changes and, thus, focus on causal reasoning.

More recently, historical reasoning has been conceptualized and operationalized by researchers who focus on developing students' ability to write history (e.g., De La Paz, 2005; Monte-Sano, 2010; Monte-Sano & De La Paz, 2012). This research mainly focuses on aspects related to historical argumentation using information from multiple documents and less on how students reason about cause and consequence or processes of continuity and change. Monte-Sano and De La Paz (2012), for example, assessed the quality of historical reasoning in writing tasks on three aspects: substantiation (providing evidence and explanations in support of a claim), perspective recognition (presenting the texts as the authors' viewpoints, which can be evaluated), and contextualization (identifying and situating their argument in the appropriate time, place, and setting, thus linking related events).

Some of the activities in Figure 6.1 are also conceptualized as historical *thinking* activities. Identifying aspects of continuity and change, sourcing, constructing a historical context, and connecting claims to historical evidence are all examples of activities that have been labeled as historical thinking activities. Historical thinking and reasoning largely overlap, as they both aim at understanding the past. Furthermore, both types and forms of historical thinking and types and forms of historical reasoning are connected to the metaconcepts of the discipline such as historical causation, change, and evidence. Conceptualizations of historical thinking with a main focus on these metaconcepts do not offer a clear description of how historical thinking activities are interrelated. Historical reasoning, however, consists of 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 and using information about the past. Engaging in critical analysis and synthesis of information about the past to reach a conclusion and providing evidence to support these conclusions are important components of the historical reasoning process. For example, when trying to reach justifiable conclusions about the fall of the Roman empire, one can identify aspects of change and continuity in order to decide about significant causes and support claims with information from accounts of historians and primary sources. In the US, conceptualizations of historical reasoning place greater emphasis on reasoning about primary sources (Ercikan & Seixas, 2015; Seixas, 2016) and on argumentation. They pay less attention to what the argumentation is about (for example, change or causation) and to retrospective texts that were not produced contemporary to the time. European approaches—including those adopted in our own research—place greater emphasis on the organization of central facts and concepts to make claims about change, causality, or differences and similarities. This approach is also reflected in the idea of narrative competence found in the German history education literature. Narrative competence refers to students' ability to construct and deconstruct narratives (Körber & Meyer-Hamme, 2015; Schreiber et al., 2006), although most authors who work in this tradition do not use the term historical reasoning and give less attention to key concepts such as causation, change, and historical evidence.

Historical Cognition: Underlying Knowledge, Beliefs, and Interest

What are the resources that students utilize to engage in historical reasoning? Two approaches to answering this question are the cognitive and the sociocultural. Each has its own discursive tools. In history education, not only disciplinary history but also public history or collective memory plays an important role in shaping students' thinking and reasoning about the past. In the cognitive approach, emphasis has been placed on the role of mental resources such as students' content knowledge, understanding of metahistorical concepts, epistemological beliefs, reading and writing abilities, and interest.

First-Order Knowledge

Several research domains have shown that quality of reasoning is related to content knowledge (Hogan, 2002; Sadler & Zeidler, 2005). In history, first-order (or content) knowledge is a broad category that includes knowledge of historical events (e.g., fall of the Berlin wall), structures (e.g., feudal system), themes (e.g., tension between the State and the Church), concepts (e.g., modern imperialism), and chronology (Leinhardt, 1993). Historical facts, concepts, and chronology are used to construct temporal and causal relations. They are used to contextualize a historical event or situation to explain or compare it or to provide evidence for a particular interpretation (Monte-Sano & De La Paz, 2012; van Boxtel & van Drie 2012; van Drie, van Boxtel, & Braaksma, 2014). Students can only relate

historical concepts and facts in a meaningful way when these are understood. Rouet et al. (1997) found that when studying historical sources a richer knowledge base helps individuals select contextual elements at an appropriate level of generality. The same result was found by Wineburg (1998), who showed that knowledge about the general chronology, major figures and antecedents, and aftermath of the American Civil War enabled a historian who was not an expert on the Civil War to explain Abraham Lincoln's shifting views on slavery using a series of sources. Wineburg (1998) remarked that "the creation of context lies at the heart of historical expertise, forming the foundation upon which sound historical readings must rest" (p. 337). Colligatory concepts (which bind events within a period together) in particular can function as powerful tools for creating historical context when interpreting historical documents and images (van Boxtel & van Drie, 2012). In history, colligatory concepts, such as Renaissance or Industrial Revolution, are also used to identify processes of change, to explain and to make comparisons (McCullagh, 1978).

Despite these findings, in most conceptualizations of historical reasoning (as is the case in conceptualizations of historical thinking), the role of first-order knowledge is barely explicated. This is especially the case when historical thinking and reasoning are conceptualized as skills that should not be conflated with knowledge. The focus is mainly on how students think with their understanding of metahistorical concepts such as evidence or causation rather than on how they think with their first-order knowledge. In our own conceptualization (see Figure 6.1), we approach historical reasoning as an activity in which the application of first- and second-order knowledge and argumentation is integrated to reach justifiable conclusions about historical phenomena. In addition, scholars find it difficult to separate students' historical reasoning performance from their knowledge because the use of historical facts, concepts, and chronology is an integral part of the reasoning that is constructed. Instruments we developed to analyze quality of students' historical reasoning in written tasks and peer or whole-class discussions also reflect this integrative approach. They contain criteria about the use of first-order concepts relevant to the task. Important questions include how much and what type of first-order knowledge students need in combination with knowledge of second-order concepts to be able to evaluate or construct historical reasoning at a sufficient level.

Knowledge of Metahistorical Concepts and Strategies

Grounded in the notion of history as a distinctive form of inquiry and thought, second-order (metahistorical) concepts of history are higher-order concepts that help define the structure of the discipline. They shape historical questions and are used to organize substantive knowledge when making sense of historical sources and constructing historical interpretations. Lee, Dickinson, and Ashby (1998) identified *evidence*, *change*, *cause*, and *empathy* as second-order concepts. Later, several other second-order concepts were added. Limón (2002) added *time*, *space*, *fact*, *description*, and *narration*. Lévesque (2008) added *historical significance* and *progress and decline.* VanSledright (2010) also mentioned *historical context*, *human agency*, and *colligations*. Seixas and Morton (2012) added

historical perspectives and the *ethical dimension*. VanSledright and Limón (2006) made a distinction between second-order concepts (considered as a type of substantive knowledge) and strategic (procedural) knowledge, which concerns knowledge of how to investigate and interpret the past—for example, how to construct evidence-based arguments or interpretations within a historical context. The above lists suggest that there is no agreed-on clear definition of second-order concepts, but among a large number of scholars consensus on at least some characteristics is emerging.

Not all second-order concepts mentioned in the literature have been related to historical reasoning in equal measure. Researchers discuss historical reasoning mainly in relation to students' understanding of historical evidence, change, historical significance, agency, and causation. The underlying idea is that when students grasp these second-order concepts, they will demonstrate higher-level reasoning. For example, when students consider causes as reasons for actions they will not be inclined to pay attention to unintended consequences when reasoning about causes and consequences or will ignore causes at a structural level (e.g., Halldén, 1997). Rouet et al. (1997) found that when studying multiple historical documents about an event, history students who had more disciplinary expertise, and thus a more sophisticated understanding of metahistorical concepts, used more elaborate reasoning heuristics and more thoroughly examined possible interpretations than psychology students who lacked such understanding. In a recent experimental study on causal historical reasoning, Stoel, van Drie, and van Boxtel (2016) found a significant correlation between the quality of students' causal historical reasoning in an essay and students' knowledge of historical causation and strategies related to this second-order concept in the condition in which students worked on an inquiry task but not in the experimental condition in which this inquiry task was enriched with explicit teaching of second-order concepts and strategies. The students' understanding of metahistorical concepts and knowledge of strategies was measured separately from the quality of students' historical reasoning. Ultimately, the relationship between students' understanding of metahistorical concepts and quality of reasoning is difficult to infer from findings of empirical studies because the understanding of metahistorical concepts is mostly measured using reasoning tasks (e.g., asking students how a particular historical change or event can be explained).

Epistemological Beliefs About History

Students' epistemological beliefs may be an important factor that explains their limited argumentative reasoning ability (Kuhn et al., 1994). The idea that epistemological beliefs are at least partly domain specific has gained recognition (Buehl & Alexander, 2005). Epistemological beliefs concern ideas about the nature and construction of historical knowledge. What is true? How do we know? Outside the domain of history, evidence shows that more advanced epistemic cognition is positively related to more advanced thinking and reasoning (Hofer & Bendixen, 2012; Kuhn, 2000). Based on Kuhn's stage model (Kuhn et al., 1994) and Lee and Shemilt's (2009) progression model, Maggioni, Alexander, and VanSledright (2004) distinguished three types of epistemological stances (also Maggioni,

VanSledright, & Alexander, 2009). Students taking the *copier* stance regard claims about the past as either correct or wrong because they are copies of the past. Students adopting the *subjectivist* stance acknowledge that experts can disagree but lack an understanding or appreciation of the disciplinary criteria to judge different interpretations. This stance often results in the idea that history is merely a matter of opinion. Students operating in the more mature *criterialist* stance understand the constructed nature of history and the use of scientific criteria for evaluating the quality of interpretations, resulting in the idea that some interpretations can be more plausible than others.

Although the importance of epistemological beliefs is widely acknowledged, understanding of how students' epistemological beliefs affect their historical reasoning is limited. In the context of a history of science course, North (2005) compared the essays written by 10 students with an arts background and 10 students with a science background. She found that the arts students made the interpretations of different historians visible in their text, whereas the science students presented statements as factual. She explained these differences as a different understanding of knowledge either as mediated and contested or as representation of reality. Maggioni et al. (2004, 2009) developed a questionnaire that can be used to determine students' epistemological stance and investigate the relationship between students' historical reasoning ability and their epistemological beliefs about history (see also Stoel et al., 2015). Such instruments are important in that they enable research on how and the extent to which students' historical reasoning taps into their epistemological beliefs about history.

Reading and Writing Skills

Several scholars have argued that every discipline is a domain in which certain kinds of texts are read and written, and thus the development of expertise in the particular domain requires disciplinary literacy (O'Brien, Stewart, & Moje, 1995). It is, however, difficult to disentangle historical reasoning from reading and writing history because historical reasoning ability is largely expressed in the reading and writing of history. Reading skills are required to critically evaluate a historical reasoning presented in a text. The studies of Wineburg (1998) and Perfetti, Rouet, and Britt (1999) suggest that when reading historical documents students must construct a representation of the text, the historical events, the subtext (the author's potential biases and intentions), and an intertext model representing the relationships between different documents (agreeing with or contradicting). Wolfe and Goldman (2005) found that particular processes during the reading of two contradictory history texts about the Fall of Rome positively correlated with 11- to 13-year-old students' performance on a reasoning task in which they were asked to explain the historical event. The complexity of students' reasoning about the historical event was predicted by self-explanations during reading that used prior knowledge or previously processed text information and surface text connections.

Writing about history is a complex activity in which the student must combine content knowledge, historical reasoning ability, and knowledge of appropriate ways to present ideas (McCarthy Young & Leinhardt, 1998; Rouet, et al., 1996;

van Drie, Braaksma, & van Boxtel, 2015). Some studies provide insight into the relationship between historical reasoning and students' writing ability. Coffin (2004) indicated that writing a historical explanation requires the use of different kinds of conjunctions and nouns, such as *by*, *through*, *the result of*, *factors*, and the *main reason*, with which causal relations can be expressed. An experimental study conducted by De La Paz (2005) showed that eighth-grade students' writing ability significantly affected the length of the paper they wrote and the persuasive quality and historical accuracy scores of their paper but not the number of arguments they used in their text. A study by van Drie et al. (2015) found that initial writing ability had a significant effect on the general quality of the text that students wrote following an intervention focusing on historical reasoning and general text quality. Quality of historical reasoning in the text (e.g., the use of substantive and metahistorical concepts, contextualization, and the use of criteria for historical significance) did not correlate with initial (generic) writing ability. Inconsistent findings may be the result of a focus either on aspects of historical argumentation or on other components of historical reasoning.

Interest in History

For students, it is not always clear why they should engage in historical reasoning. History education may contribute to the development of interest in history, but in most cases educators need to address the question of how to make historical reasoning meaningful for students. Different types of interest exist. Individual interest in history is relatively stable, has developed over a longer period of time, and is often affected by experiences of situational interest (Renninger, Hidi, & Krapp, 2014). Topic interest is also a relatively stable form focused on a particular topic in a domain, such as World War II or ancient Rome. Students also may have an interest in the history of particular places and communities because they relate to their identity (Grever, Haydn, & Ribbens, 2008). Situational interest is a temporary state triggered at a particular moment in a particular environment, for example, by novel aspects, life themes, or topics that easily relate to everyday life experiences (Logtenberg, van Boxtel, & van Hout-Wolters, 2011). All types of interest emerge from the interaction between student characteristics and a specific situation or environment.

The relationships between students' interest and cognitive aspects of learning history have received little attention (de Leur, van Boxtel, & Wilschut, 2015; Del Favero, Boscolo, Vidotto, & Vicentini, 2007; Stoel et al., 2016). Students use more deep-level and higher-order learning strategies when they are interested in a domain or a particular topic (Alexander, 1998). Interest can be connected with emotions, such as indignation or astonishment, which can both hinder and facilitate reasoning. Based on research in educational psychology, we know that negative emotions can reduce available working memory resources and therefore have a negative effect on reasoning (Blanchette & Caparos, 2013; Oaksford, Morris, Grainger, & Williams, 1996). However, when an individual considers a question or topic relevant, this can improve his or her thinking and reasoning performance. Some studies show that a strong identification with a particular group can affect one's reasoning about and with historical evidence, for example,

by showing bias or selective sampling (Pettigrew, 1998, in Schwarz & Goldberg, 2013). Goldberg, Schwarz, and Porat (2008) found that when historical issues were more vital in collective memory, 12th-grade students' narratives were more prone to display ethnic identity bias. Savenije, van Boxtel, and Grever (2014) found examples of how moral judgements can obstruct historical explanation and reconstruction.

A Sociocultural Perspective: Disciplinary History and Collective Memory

In the sociocultural approach, scholars point to the situated and social aspects of thinking and reasoning (Mason, 2007). Students are enculturated into particular communities and discourse practices. Situated cognition and sociocultural approaches challenged the cognitivist and constructivist approaches to the study of learning and reasoning (e.g., Bereiter, 1994; Lave & Wenger, 1991). Historical reasoning in the classroom is also a situated and social activity (see Bain, 2006; Barton & McCully, 2005). Students reason in interaction with peers, the teacher, and the materials or curriculum used, such as historical textbooks or museum exhibitions. This interaction is shaped by the concepts and (variety of) methods that are developed within the discipline of history but also by representations of history that are part of public history and how the past is addressed publicly (e.g., media, museums, commemorations), particularly in students' social groups.

In the classroom, these types of historical practice come together. Historical reasoning is shaped by them, and the narratives that are produced by historians and in the public sphere can be the objects of historical reasoning. History teachers who integrate historical narratives and representations that are present in public history can make a unique contribution to students' understanding of history by helping them enter a *disciplinary* community of practice. They can do that by introducing students to disciplinary concepts and ways of thinking and reasoning, which are the product of a disciplinary community (Lave & Wenger, 1991). Language is the most important cultural tool that mediates the process of learning (Mercer & Littleton, 2007).

Historical narratives that students come across in and outside of history lessons mediate historical reasoning. Students reason with knowledge of historical facts, concepts, and chronology. This knowledge originates not only in the history classroom but also in historical narratives told at home or present in popular culture. Wineburg, Mosborg, Porat, and Duncan (2007) investigated what youngsters and their parents knew about the Vietnam War. They found that the narratives of the adolescents interviewed bore remarkable commonality, seeing Vietnam as a war waged without domestic support, occluding perspectives of domestic support from that time.

Wertsch (2004) indicated that a narrative template often underlies stories about the national past, for example, a "quest for freedom" or "triumph-over-alien-forces" template. In many countries, teachers and history textbooks give students romantic and essentialist narratives about the nation (Barton & Levstik, 2004; Lopez, Carretero, & Rodríguez-Moneo, 2014). Lopez et al. (2014) asked

students to explain the "reconquest" of Spain in the late Middle Ages. The students applied national adjectives to the territory and the people that inhabited the Iberian Peninsula and judged the Muslim conquests as illegitimate and the Christian Spanish conquests as legitimate. This nationalist master narrative hindered more complex and critical reasoning about the historical event. In addition, the scale (i.e., local, national, global) of the narratives and chronological frameworks presented to students was likely to affect their thinking and reasoning about historical events. Stradling (2001) has argued that a curriculum allowing a more global perspective might enhance more complex forms of historical reasoning in which students situate events in a broader context.

Barton (2001) and Barton and McCully (2005) compared the ideas and reasoning of students from the US and from Northern Ireland. Students from Northern Ireland were less likely to think that individuals are responsible for changes in history or that change is a process of progress. Students in the two countries used different cultural tools to reason about continuity and change and cause and consequence. Not only the amount and quality of knowledge of historical content but also the narratives in which this content is delivered or framed affect students' reasoning about historical phenomena.

Enhancing Historical Reasoning in the Classroom

Both factors that are emphasized from the cognitive perspective (e.g., historical knowledge, epistemological beliefs, interest) and factors highlighted from a sociocultural perspective (e.g., types of narratives that dominate public history or curriculum) might provide guidance for pedagogies that are effective in enhancing and improving students' historical reasoning. Teaching students to reason in history is a challenging job and may require a substantial amount of time in an already time-limited practice. This places high demands on the reasoning skills of the teacher, may be difficult and time consuming to assess, and requires good instructional materials and learning tasks (van Drie & van Boxtel, 2008). Although teaching historical reasoning indeed requires substantial effort, several studies inform us about pedagogies that trigger and support students' historical reasoning (van Boxtel & van Drie, 2013). There are several ways in which historical reasoning can be supported: explicit teaching, tasks designed to enhance historical reasoning, visual representations, and enhanced interaction. Our aim here is not to give a complete overview but, rather, to gather some insights on stimulating historical reasoning in the classroom.

Explicit Teaching to Support Historical Reasoning

Explicit teaching is the strategy best investigated in history educational research, particularly the notion of *cognitive apprenticeship* (Collins, Brown, & Newman, 1989) in which novices are "apprenticed" into expert practices. Teachers make strategies visible to students in an authentic activity (modeling). Next, students are supported to perform the task through guided practice (coaching) and independent practice (fading). Explicit teaching in history can have various aims;

however, most studies aim at improving individuals' disciplinary reasoning strategies (i.e., sourcing, corroboration, contextualization; Wineburg, 1991) when they are writing historical accounts based on historical sources that they have read (e.g., De La Paz, 2005; Nokes, et al., 2007; Reisman, 2012).

For example, De La Paz and Felton (2010) investigated the effectiveness of an integrated reading and writing intervention on 11th-grade students' writing of evidence-based arguments. The experimental group received combined instruction on historical reasoning and written argumentation. The instruction was based on a cognitive apprenticeship model, including teacher modeling followed by verbal scaffolding to help students use the strategies independently. The historical reasoning instruction focused on strategies for reconciling conflicting information from sources to build an understanding of complex historical events. Furthermore, students learned to plan and compose argumentative essays. The control group was exposed to the same materials and practice in writing historical essays but did not receive explicit instruction. The students in both groups wrote the same number of essays and received written feedback based on rubrics. Positive effects of the explicit instruction condition were found for essay length, overall quality (overall persuasiveness and historical accuracy), number of claims, number of rebuttals, and use of documents.

Another approach to explicit history teaching was reported by Stoel et al. (2015, 2016). Based on the Model of Domain Learning (Alexander, 2003), their studies looked at students' causal reasoning instead of reasoning with historical sources. Employing explicit teaching of strategies, second-order concepts to generate and verbalize causal explanations, and epistemological beliefs connected to causal reasoning in history, the teacher explicated relevant second-order concepts, modeled strategies, used an analogy, and discussed different ways to verbalize causal explanations. In the application phase, students practiced relevant strategies and concepts while working together on an inquiry task. In their experimental study (Stoel et al., 2016), this approach was compared with an implicit teaching approach that did not give explicit attention to causal reasoning strategies and epistemological beliefs. The results showed that students in the explicit teaching condition developed significantly more knowledge of causal reasoning strategies and second-order concepts and attributed a higher value to academic criteria for generating historical knowledge. No effects were found on the quality of students' historical causal reasoning in an essay.

The studies above show the strength of explicit instruction in teaching historical reasoning. Most have compared explicit teaching with a traditional approach to history teaching focusing mainly on content and not on disciplinary strategies. Only a few studies provide us with information on what *kind* of instructional strategies work best and why. For example, Nokes et al. (2007) compared four instructional interventions that differed in terms of type of text (traditional textbook vs. multiple texts) and type of instruction (content instruction vs. sourcing, corroboration, and contextualization heuristics) and found that the use of multiple texts resulted in better learning, regardless of the type of instruction (content or heuristics). In addition, van Drie et al. (2015) compared effects of generic writing instruction with domain-specific writing instruction on general text quality and historical reasoning. Both instructions were based on the idea of learning

from text models, which can be considered another form of explicit instruction. After the teacher provided brief instruction, students worked in groups to compare different text models and formulate criteria for strong texts. These criteria were next discussed with the teacher and the class. The researchers found a positive effect on quality of historical reasoning in written texts for the domain-specific writing instruction but no differences in general text quality.

Tasks that Trigger Historical Reasoning

One way to trigger students' interest in history is to use realistic or authentic tasks or problems (Newmann & Wehlage, 1993). Collins et al.'s (1989) cognitive apprenticeship model considers working with authentic tasks to be an important element. This raises the question of what can be considered authentic tasks in history.

From the perspective of the profession of the historian, document-based writing tasks are considered authentic in history education (Freedman, 2015). Document-based writing fits within the broader category of historical inquiry tasks. In inquiry tasks, students have the opportunity to construct their own knowledge and answer historical questions based on their analysis of a variety of sources, which can include historical documents, images, accounts of historians, history textbooks, or information on the internet or in media (Barton & Levstik, 2004; Saye & Brush, 2002; Seixas, 1993). Given that inquiry tasks are open-ended without a fixed answer, they are especially suited for eliciting historical reasoning. For example, Voss and Wiley (1997) found that writing an argumentative essay based on multiple sources is more powerful in enhancing learning and understanding in history than writing a history or a narrative or using just a textbook. The combination of multiple sources and argumentative writing elicits constructive and transforming activities—for example, integrating source material, examining and evaluating several factors, and organizing these factors into a reasonable argument.

The question or prompt is an important element in constructing an inquiry task because it influences the amount and kind of reasoning elicited. Van Drie, van Boxtel, and van der Linden (2006) concluded that an evaluative question is more powerful in eliciting historical reasoning than an explanatory question. In their experimental study, one group of 11th-grade students worked with the evaluative question and another group worked with an explanatory question about the same topic. Students worked in pairs in a computer-learning environment in which they could study historical sources and collaboratively write an essay. Students working with the evaluative question wrote better texts, and this prompt elicited increasingly elaborated historical reasoning in chat discussions. In addition, Monte-Sano and De La Paz (2012) compared four different writing prompts (situated, sourcing, document analysis, and causal) on three aspects of historical reasoning—substantiation (providing evidence and explanations in support of a claim), perspective recognition (presenting the texts as the authors' viewpoints), and contextualization (situating arguments in time, place, and setting)—on the origins of the Cold War given to 101 10th- and 11th-grade students. They concluded that prompts focusing on sourcing, document analysis, or causation were more likely to elicit students' attention to multiple perspectives

than prompts that asked students to imagine themselves as historical agents. The first three prompts all required students to consider the authors of the documents and their different viewpoints, which the researchers considered an important step in fostering students' historical reasoning.

These findings emphasize careful consideration of the question used in inquiry tasks. However, Freedman (2015) argues that students should formulate their own questions instead of working from predefined questions. To engage students in what he calls "critical historical reasoning" which recognizes that historians frame their investigations through the questions they pose, students should be asked to frame their own investigations. In this way, the task becomes more authentic in the sense of resembling the profession of the historian. In addition, other scholars argue that students should investigate their own questions because such questions are more relevant and meaningful to them (e.g., Barton & Levstik, 2004; Seixas, 1993). A study conducted by Logtenberg et al. (2011) showed that after students read an introductory text about a new topic, they were able to generate historical questions that could be used as a starting point for historical inquiry.

Although these kinds of document-based inquiry tasks have proven to be suitable tasks for enhancing students' historical reasoning, the question arises of whether these tasks also can be considered authentic from a student perspective. Are tasks that are closer to students' daily life and interest more authentic for them? As an example of a different authentic approach, van Drie, van Boxtel, and Stam (2013) described a task in which students were asked to write a letter to the secretary of a Dutch museum organizing an exhibition about the development of Dutch democracy. In their letters, students made a case for a historical person or event that they considered most significant to the development of Dutch democracy to be included in the exhibition. The task was thus embedded in a realistic setting, and the goal of writing and the audience were clear, which is considered important for writing (Rijlaarsdam et al., 2008). Furthermore, the question of historical significance in itself can be meaningful to students because they are asked to independently consider why people and events from the past are important and for what reasons. Although this study did not compare this task with another task, the analyses of the letters written and the whole-class discussion about the top 10 events and people showed that this task elicited students' reasoning in writing and especially in the whole-class discussion. This included reasoning about the impact of historical changes, consequences of actions, and the influence of particular persons. Moreover, interviews with the teachers and the students showed that they enjoyed working on this task.

Supporting Historical Reasoning With Visual Representations

Visual representations can be considered "tools for thinking" that help learners to express, explain, and discuss their ideas (Stahl, 2000). They can be useful tools for supporting students' historical reasoning. Examples of representations include concept maps, argumentative diagrams, matrices, causal maps, timelines, and drawings. Historical information is not represented in linear text but rather in a different graphical form. Cox (1999) considers learners' self-constructed representations (compared with ready-made representations) beneficial

for learning. Visual representations focus students' attention on central problems, relations, and structures in the task and immediately show which information is missing (thus stimulating elaboration). Furthermore, visual representation can function as a point of reference accessible to all learners and to which all students can easily refer. It can initiate the verbalization of knowledge and the negotiation of meaning that enables students to build on each other's contributions (Suthers & Hundhausen, 2003).

Different representational formats can support particular components of historical reasoning. A study by van Drie, van Boxtel, Jaspers, and Kanselaar (2005) revealed how the joint construction of a specific representational format influences students' historical reasoning. The researchers compared three different representational formats (list, argumentative diagram, matrix) within the same inquiry task asking, "Were the changes in the behavior of Dutch youths in the 1960s revolutionary?" Students worked in pairs in a computer-learning environment that enabled them to collaboratively write an essay and construct a representation. Communication took place via chat. The matrix enabled students to classify historical changes. The list enabled students to create a running list of supporting and opposing arguments. In the argumentative diagram, pro and contra arguments could be schematically ordered and related to each other using different colors. The results of analyses of the chat discussions revealed that the type of representation used influenced students' historical reasoning. For example, students working with the matrix talked significantly more about historical changes compared with the other students. Students working with the diagram reached greater balance between pro and contra arguments than students working only with the list. Thanks to the different colors, items with few counterarguments were directly visible.

The construction of representations can be used in various ways in the classroom—for instance, as a task in itself, as preparation for whole-class discussion, or as a prewriting strategy to select and order information from historical sources prior to essay writing. With respect to this latter use, one should bear in mind that converting the more graphical structure of the representation into linear text can be difficult (Coirier, Andriessen, & Chanquoy, 1999). In choosing a representational format, one must consider the kind of reasoning elicited, the amount of information represented, and the function of the tool with respect to learning goals. The construction of representation can be facilitated by computer technology (van Drie et al., 2005).

Supporting Historical Reasoning through Interaction

Through interaction, learners may internalize new knowledge and ways of reasoning that enable them to function at a more advanced level. Especially important are interactions in which learners are stimulated to think and reason with each other and explore various ideas (Mercer & Littleton, 2007; Nystrand, 1997). As a consequence, we suggest that students should receive ample opportunities to practice the language of history in reading, writing, and talking with each other and the teacher.

Whole-class discussion is worth special focus when considering historical reasoning. We recently argued for *dialogic* history teaching in which teaching occurs

both through and for disciplinary dialogue (van Boxtel & van Drie, 2017). Dialogic history teaching aims to engage students in dialogue about the construction and evaluation of representations of the past rather than presenting students with ready-made representations. In whole-class discussions, the main role of the teacher is to elicit and sustain an ongoing dialogue in which various perspectives are explored. Students' ideas are not evaluated against a norm but rather explored through evidence and arguments. Questions are used to ask for elaboration, challenge ideas, and invite other students to respond rather than evaluate. The teacher helps students learn to use the language of history and provides students with a model of reasoning. Through the analysis of interaction processes in whole-class discussions, we identified two ways in which teachers enriched students' historical reasoning (van Drie & van Boxtel, 2011). The first method included deepening historical reasoning by digging deeper into one specific component of historical reasoning—for example, asking students to discuss long-term and short-term causes of the French Revolution and relationships between these causes. The second method was broadening historical reasoning by adding a new component of historical reasoning to the discussion—for example, when contextualizing a historical source in time and asking students about the trustworthiness of the source. These kinds of whole-class discussions, in which students perform most of the reasoning, require students to have knowledge about the topic under discussion and thus are especially suited for debriefing after (collaboratively) performing a task (Havekes, 2015).

Several studies show the importance of whole-class discussion for students' historical reasoning. Leinhardt (2000), for example, described how a student progressed in historical writing over time and related this progress to the kind of instruction that he received, including discussions of history in classroom interaction. Through these discussions, he learned that there are multiple perspectives and positions in history and how to express his own perspective.

In sum, the studies discussed above highlight important characteristics of teaching students how to engage in historical reasoning in the classroom. Explicit teaching approaches have been shown to improve students' reasoning in reading and writing. Stimulating students' historical reasoning in whole-class discussions seems to be another important ingredient in enhancing students' reasoning. Furthermore, authentic tasks, particularly inquiry tasks in which students construct a historical interpretation based on several historical sources, seem powerful. The inquiry question used determines the kind of historical reasoning that is elicited and therefore should be chosen in light of the desired learning goals. These goals may aim at a particular type of reasoning, such as reasoning about historical significance or about causes and consequences. This also holds for choosing visual representations to support particular aspects of historical reasoning.

Discussion

This chapter conceptualizes historical reasoning as an integrative and socially situated activity. Historical reasoning aims at reaching justifiable conclusions about processes of continuity and change, causes and consequences, and differences

between and similarities in historical phenomena or periods. To develop such conclusions, students ask historical questions, contextualize and construct temporal and causal relations by using both substantive and metahistorical concepts, and build arguments using evidence from historical sources during the reasoning process. Thus far, most research has focused on students' use of historical sources as evidence in constructing a historical account or argumentation. Less attention has been paid to what students actually reason about—for example, how they reason about aspects of change and continuity or make comparisons.

When historical reasoning is considered as a competency or higher-order skill, the research literature does not give us many clues about which *sub*skills make up the ability to reason historically. Historical reasoning is a blend of subskills that are each complex, such as explaining, asking historical questions, historical contextualization, and the ability to investigate historical sources. Many of these historical reasoning skills are also conceptualized as historical thinking skills. Historical reasoning, however, is a coherent *set* of historical thinking activities which together lead to a conclusion and includes *argumentation processes*, such as the assessment of claims and arguments. More research is needed to unravel historical reasoning as a competency and how students develop it. Radinsky, Goldman, and Pellegrino (2015) make a similar remark about progression in historical thinking. Research must employ instruments that assess students' historical reasoning ability in a valid and reliable manner. These instruments should be fine-grained to grasp incremental development in students' historical reasoning ability.

Our conceptualization of historical reasoning also includes resources that determine the quality of reasoning: substantive knowledge, understanding of historical metaconcepts, understanding of the nature of historical knowledge and knowing (epistemological beliefs), interest and identity, and reading and writing ability. More research is needed on how these aspects influence historical reasoning. For example, what is the role of content knowledge in reasoning? What are the implications of historical facts and chronologies embedded in particular concepts and narratives characteristic for a specific historical culture? Furthermore, how do epistemological beliefs and understanding of metahistorical concepts influence students' reasoning? When students better understand historical change (e.g., that there are different types of change, that we can distinguish processes of change), are they better able to reason about processes of continuity and change when they study a new topic? The field also needs to know more about the interaction between different types of knowledge, interest, and epistemological beliefs. For example, knowledge of historical facts, concepts, and chronology might be requisite to the effective utilization of strategic knowledge (van Boxtel & van Drie, 2012). On the other hand, without strategic knowledge (e.g., how to explain a historical event), substantive knowledge may stay inert.

Teachers and textbooks often present history as given and finished (Bain, 2006). Students are often expected only to reproduce the fixed understandings. Only if they are stimulated to engage in historical reasoning themselves can students learn how to critically analyze the reasoning implicit in the historical narratives and representations produced in disciplinary and public history. Research has provided several important insights on how to stimulate historical reasoning in the classroom, but more is needed. Most teaching approaches aim

at reasoning about and with historical sources and causal reasoning; less is known about how to promote reasoning about historical changes or comparisons of historical events, developments, or persons. Moreover, explicit teaching approaches seem to be effective in fostering historical reasoning; however, other approaches (i.e., dialogic history teaching) have been less investigated. Systematic comparisons of the effect of different teaching approaches on learning outcomes and examination of whether some students would benefit more from one approach compared with other approaches would be interesting.

In addition, more research should be directed toward the competencies that history teachers need to teach historical reasoning in the classroom. How do teachers foster historical reasoning and what elements should be developed more thoroughly? To gain insight in teachers' current practices with regard to teaching historical reasoning, valid and reliable observation instruments are needed. There are some promising attempts to develop such instruments (Gestsdóttir, van Boxtel, & van Drie, 2015; Huijgen, van de Grift, van Boxtel, & Holthuis, 2017; van Hover, Hicks, & Cotton, 2012) that can be used as a starting point for teacher preparation.

This chapter has explored historical reasoning mainly from a cognitive perspective, while acknowledging that it is also a social and situated activity. The history classroom is a place where disciplinary and public history discourses come together and intermingle (Lévesque, 2016). Students can reason about change, causes, consequences, similarities, and differences in historical phenomena and periods, which also can help to understand the present and reflect on how people deal with history in the present (see Nordgren & Johansson, 2015). The research we discussed focuses on reasoning about past phenomena, whereas relating past, present, and future is considered a key aspect of historical consciousness (Rüsen, 2007). Scholars in the field of historical consciousness, however, do not clearly explicate what students actually do when connecting interpretations of the past, understanding of the present, and expectations for the future. In the context of history education, we operationalize historical consciousness as historical thinking and reasoning about past and present, shaped by interest in the past, substantive and metahistorical knowledge, and understanding of the nature of history, which are shaped by the social-cultural context.

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