History: Forms of Presentation, Discourses, and Functions

History as an institutionalized, academic discipline is a continuation of extradisciplinary forms of dealing with the past and, therefore, has never enjoyed a monopoly on its representation. Narrative representations of origins—be it in the form of myths, legends, religions, or ideologies—are found in most cultures. These different forms of representing the past offer collectively an orientation in time: they give a meaning to the present by locating the present on a time axis between a future and a past.

Next to the variety of disciplinary forms of historical representation (Stern 1970, Kelley 1991, Lorenz 1997), these extradisciplinary representations of history still exist, often competing with others and disciplinary history. The problem of how to demarcate the extradisciplinary from the disciplinary ways of dealing with the past, has therefore haunted history as a discipline of its very beginning. Traditionally, the discipline’s identity has been based on its truthclaim, its critical perspective of the historians and with the development of time. The Enlightenment also stimulated the tendency to identify cognitive, scholarly activity with empirical disciplines, which was a consequence of the competition of the Geisteswissenschaften with the modern natural sciences (Scholtz 1991, Momigliano 1990). Koselleck dates the fundamental change in the disciplinary forms of historical representation (Stern 1970, Kelley 1991, Lorenz 1997), between a future and a past.

It will only take extradisciplinary representations of the past in the West. These different forms of representing the past offer collectively an orientation in time: they give a meaning to the present by locating the present on a time axis between a future and a past. Next to the variety of disciplinary forms of historical representation (Stern 1970, Kelley 1991, Lorenz 1997), these extradisciplinary representations of history still exist, often competing with others and disciplinary history. The problem of how to demarcate the extradisciplinary from the disciplinary ways of dealing with the past, has therefore haunted history as a discipline of its very beginning. Traditionally, the discipline’s identity has been based on its truthclaim, its critical perspective of the historians and with the development of time. The Enlightenment also stimulated the tendency to identify cognitive, scholarly activity with empirical disciplines, which was a consequence of the competition of the Geisteswissenschaften with the modern natural sciences (Scholtz 1991, Momigliano 1990). Koselleck dates the fundamental change in the disciplinary forms of historical representation (Stern 1970, Kelley 1991, Lorenz 1997), between a future and a past.

The past thus gradually turned into a ‘foreign country’ (Plumb 1973, Lowenthal 1985, Rüsen 1983–9).

Early nineteenth century, this experience of difference between the past and the present would lead to the association of history with the notions of nonrecurrance and nongeneralizability, later expressed in the concepts of uniqueness and individuality (see Historicism and History: Theories and Methods). History thus came to be conceived of not just as change through time—which could be cyclical and thus repeatable—but as change as a process of irreversible and nonrepeatable development.

With the emergence of this specific new sense of the past, the stage was set for the development of history and the social sciences into separate disciplines. The object of history was increasingly identified with nonrecurring phenomena in the human past, while the social sciences were identified with recurrent phenomena in the human present. Because recurrence is a precondition for generalization and thus for (structural and processual) theories, history and theory gradually turned into opposites, excluding one another. Thus the idea was born that the forms of
representation in history differed fundamentally from those in the social sciences. While historical representation was usually characterized as time-oriented and narrative, social scientific representational forms were characterized as analytical and theoretical (see History and the Social Sciences, Meran 1985, Burke 1993, Lorenz 1997). The modern question of narrative in history was thus born in the eighteenth century as a concomitant of the rise of modernity.

2. The Classical Roots of the Modern Debate

2.1 The Aristotelian Heritage

Both the Enlightenment conception of history and its critique in Herder and in later, Romantic thinkers—the two conceptions of history that still define the terms of the modern debate—must be viewed in the context of Aristotelian philosophy, because the Aristotelian definitions and distinctions of disciplines were still very influential in the eighteenth century (Aristotle 1963). In Aristotle’s (ca. 384–322 BC) philosophy, there is a basic distinction between empirical knowledge of singular facts and universal knowledge of general facts. Concrete, empirical knowledge just formulates the contingent and particular characteristics of its object, while theoretical knowledge formulates its necessary and universal characteristics. These latter characteristics are viewed as recurrent and unchanging and were therefore limited to the domain of nature. Theoretical knowledge was therefore limited to the domain of nature too. Theoretical knowledge, according to Aristotle, does not only inform us what reality looks like, but also why this is the case: theoretical knowledge is always explanatory knowledge, because it informs us about the causes of what happens. Therefore, explanations in science are causal explanations and are ideally based on theoretical knowledge. This idea would dominate later philosophy of science in the form of positivism from Auguste Comte to Carl Hempel (see History: Theories and Methods, Meran 1985).

Within Aristotelian philosophy the domain of human activity or culture (praxis) held a fundamentally different status from nature, because contingency, particularity, and change characterize the first domain. This domain, therefore, was not open to theoretical knowledge and to scientific explanation in principle (“de singulare non est scientiae,” as Duns Scotus wrote in the thirteenth century). History, according to the Aristotelian system, belonging to the domain of culture, could never be regarded as a science and was located in the domain of practical knowledge, more akin to poetry (including literature).

Although both poets and historians dealt with the same phenomena, i.e. human actions and events (albeit respectively in verse and in prose), history only dealt with what was real and poetry with what was imagined. The historian, according to Aristotle, ‘describes what happened’ while the poet ‘describes what can happen’ (Aristotle 1963). This distinction was later codified in the distinction between the res factae [Latin: res = affairs; factae = done] or ‘things done,’ which was the domain of history, and res fictae [Latin: fictae = imagined], which only concerned poets.

The duty of the historian to stick to the facts and to tell the truth, the whole truth and nothing but the truth, derived mainly from the model of Thucydides. It received its canonical formulations in Cicero (ca. 106–43 BC) and Lucian (ca. 125–200 AD), who also linked truth in history directly to impartiality by avoiding moral blame and envy (sine ira et studio). The German historian Leopold von Ranke (1795–1886) would only repeat these classical ideals in the nineteenth century, with great force and effect (Iggers 1997).

According to Aristotle, the poet enjoyed a ‘constructive liberty’ not shared by the historian. While the unit of the historian is defined by what had happened to specific subjects at a specific time at a specific place, the unit of the poet was not defined in such a way. In poetry actions and events are put together by a unit of meaning, that is by constructing a whole with a beginning, middle, and an end, held together by a plot. The parts of the poetic unit all fulfill a function in—i.e. derive their meaning from—this whole. Because of its constructive quality, Aristotle held that poetry was more philosophical than history. This characterization was also based on the idea that poetry—for instance, tragedy—was concerned with general problems—types—and not only with particulars, like history.

The Aristotelian definition of history would define the parameters of the debates on historical representation up to the present. The opposition of nature and culture and the identification of nature with necessity and repetition, and culture with contingency and change, has ever since defined the methodological battlefields in philosophy of history. This opposition linked nature to (universal) theory while excluding (particular) history from theory a priori. As influential has been the opposition of poetry and history and the identification of history with the domain of the factual in opposition to the domain of fictionality (see History: Theories and Methods). Last but not least the Aristotelian opposition of historical units and poetical units has put the relationship between chronological and narrative ordering of events on the agenda of philosophy of history, i.e. the relationship between chronology and narrative. This opposition raised the question what narrative explanations are and how they relate to causal explanations.

2.2 The Rhetorical Tradition

Another fundamental root of the modern debate on historical representation can be traced back to classical rhetoric (Koselleck et al. 1982). Accounts of the past
were dealt with by classical authors like Aristotle, Cicero, Lucianus and Quintilianus (ca. 35–96 AD) primarily in the context of rhetoric, especially forensic rhetoric, i.e., rhetoric used to persuade a judicial court. So, the problem how to compose and write an account of the past was primarily dealt with as a problem in a communicative context and not as a cognitive problem, as is the case since the nineteenth century. Therefore the question how to produce a convincing history loomed larger than how to write a truthful history—which in turn explains why rhetoric later acquired a doubtfull reputation until it was officially expelled from the scholarly domain by Descartes only to return late twentieth century in the train of postempiricism and post-positivism (see History: Theories and Methods and McCloskey and Megill 1987). The origin in forensic rhetoric also explains why the domain of history was identified with the domain of human action.

Now to be convincing, according to rhetoric, truth may help, because Plato argued that true arguments are the most convincing. Quintilianus, however, later pointed out that truth as such was neither a necessary nor a sufficient condition for being convincing. Being convincing is directly related to being perceived as probable rather than as being factually true, because some truths are hard to believe. In order to be convincing, according to rhetoric, past action primarily must be explained in (motivational) terms understandable and plausible for the audience addressed. Therefore, the reconstruction of past actions was basically conceived of in the rhetorical tradition as an act of translation of factual information by a speaker, who has a specific aim and who addresses a specific audience.

The rhetorical emphasis on probability instead of truth was a consequence of its focus on communication and the awareness that factual truth is not a communicative category. It did not imply any plea for blurring the distinction between facts and fiction in history, nor the idea that truth in history fulfilled no communicative function. On the contrary, the truth of the past was sought after, because only true accounts of past actions were useful as exempla for later generations (Momigliano 1990, Hay 1977). History was thus usually regarded as inherently pragmatic for some 20 centuries until the presuppositions of this pragmatic conception lost their plausibility in the second half of the eighteenth century.

3. The Modern Debate on Historical Representation

3.1 The Problem of Narrative

Basically, the theories of historical representation developed since the eighteenth century can be classified on basis of their relationship with the Aristotelian and the rhetorical characterizations of history. There is a genus of theories, that can be seen as a continuation of Aristotelian theory, and there is a genus of theories, that opposes Aristotelian theory. Both genus contain several species.

The first genus consists of theories that have transformed the Aristotelian analysis of poetical or literary narrative into theories of historical narrative. According to these theories, historical narratives are structured by plots (P. Ricoeur, P. Veyne, H. White, D. Carr), colligatory concepts (W. Walsh), configurational ideas (J.-G. Droysen, L. Mink), or metaphors (F. R. Ankersmit). This view implies that historical narratives are not structured by a chronological order; instead they are structured by linguistic instruments, which synthesizes chronologically disparate elements into a synchronic unity (as, e.g., is done by concepts like ‘The Enlightenment’, ‘feudalism,’ or ‘imperialism’). Narratives, thus, are fundamentally different from chronologically ordered historical representations, such as chronicles and annals. The fundamental difference between literary and historical narrative, according to most of these narrative theories, is the difference between fiction and fact: while the construction of literary narratives is only restricted by what is plausible, historical narratives are restricted by what is factually true. Therefore, history could and did claim a scholarly status in being empirical or a Wissenschaft.

This position was first developed by the Historical School from Niebuhr and Ranke onwards and is philosophically legitimized by historicism that posits a fundamental connection between the narrative form of representation and the notions of time and of individuality. The basic idea is that narrative is the linguistic medium, which shows how a phenomenon (a person, nation, idea, etc.) develops its identity in time (Luëbe 1977, Veyne 1978, Ankersmit 1994). Although most narratives appear to follow the natural flow of time, it is, in fact, the other way around: the central idea of a narrative (e.g., the Enlightenment, the Age of Revolutions, etc.) determines which temporal units and orders (periodization, etc.) are the relevant ones for the narrative in case. Narrative time is thus always constructed time. Droysen formulated this insight in 1857 (Droysen 1977).

Within this first genus of narrative theories, there are several species which show important differences. The first species, exemplified by Louis Mink, Herman Luëbe, and Frank Ankersmit, has developed the argument that explanation by narrative is sui generis and is logically independent of causal explanation. All advocates of this species hold that the narrative mode of representation is explanatory in itself.

The second species, exemplified by Arthur Danto and Jörn Rüsen, holds that explanation by narrative,
although different from lawlike explanation, is based on causal explanation nevertheless. The narrative mode of representation is analyzed here as a set of causal chains. A third species of narrative theories, exemplified by Paul Ricoeur, David Carr, and Paul Veyne, has developed the argument that historical explanation has a narrative form and a plot structure. Ricoeur and Carr, moreover, argue that human experience itself is narratively structured and that there is an a priori fit between human experience and narrative explanation. Both individuals and communities can be said to have the same narrative form of self-constitution, because their identities can only be represented in the form of narratives.

Whatever their differences, all of these three species of narrative theories regard narratives primarily as explanatory schemes. All three try to answer the Aristotelian question how narratives explain, if not straightforward causally.

A fourth species of narrative theories is not primarily focused on issues of explanatory logic, but on the rhetorical problem why narratives are regarded as plausible and convincing. Ann Rigney and Hayden White in his Metahistory exemplify this type of narrative theory. First, White argues that all historical narratives fulfill an ideological function, aimed at specific audiences. Second, he argues that historical narratives contain one of four literary plot structures: comedy, tragedy, satire, or romance. Third, he argues that all history can be emplotted freely in these four manners. Narratives are accepted by an audience as probable and as plausible, according to White, when the narrative plot structure and its ideological implication are recognized and accepted as such.

The acceptability of historical narratives, so White, is thus relative to audiences and relative to ideological aims and not only dependent on the truth of the factual statements in the narrative. In this respect, White’s theory has a rhetorical ring, although his fixation on plot structures is at the same time Aristotelian. However, on the issue of narrative truth, White deviates fundamentally from both Aristotelian and rhetorical presuppositions. Contrary to Aristotle, he blurs the borderline between fact and fiction in history by stating that historical narratives are ‘fictions of factual representation.’ Consequently, according to White, there are no epistemological grounds for preferring one historical representation over another, only political and aesthetic ones. So, along with rhetoric, he holds that plausibility bears no necessary relation to truth. However, contrary to both Aristotelian and rhetorical theory, White severs the crucial link between research and composition of historical narrative: the composition of narratives is not treated as following from—and restricted by—research, but as a fully independent process (Lorenz 1998).

The second genus of theories of historical representation somehow opposes Aristotelian theory. Historically this genus derives from eighteenth century Enlightenment conceptions of history. Contrary to Aristotle, Enlightenment historians like Voltaire, Condorcet and Chaldenius held that history could be both theoretical—in the sense of containing knowledge of a general character—and scientific—in the sense of being empirical. ‘Theoretical’ or ‘hypothetical’ history was thus claimed as a legitimate ‘scientific’ project, in which ‘theory’ and empirical knowledge could be integrated. Theoretical knowledge was no longer exclusively identified with the domain of nature and no longer exclusively interpreted as knowledge of what is necessary and universal. All knowledge of a general character was regarded as theoretical, including empirical generalizations and theories of the middle range. In the twentieth century this type of position has been defended by the proponents of the conception of history as a social science, who conceived of history as a mix of particular and general characteristics. As the general characteristics could be theorized, they emphasize the importance of theories and models in historical reconstructions (Wehler 1973, Kocka 1977, Tilly 1981, Burke 1993, Igers 1997). This type of representation, being explicit about the concepts and arguments used, is often called analysis instead of narrative, emphasizing its affinity to the social sciences. This happened especially when ‘traditional’ history and its function were seriously questioned between 1960 and 1980.

4. The Nineteenth-century Origins of the Modern Debate on the Functions of History

From classical antiquity until the eighteenth century the pragmatic presupposition that past experience was meaningful for present purposes was not questioned seriously, nor that the (empirical) truth coincides with the (ethical) good. From the end of the eighteenth century onwards, however, historians and philosophers began to doubt the salutary nature of history seriously and therefore the function of history: when history is no longer experienced as a meaningful and salutary process, what good is the study of history then? Nietzsche’s all too nasty question in The Use and Disadvantage of History for Life (1874), whether the study of history had any use at all, was the logical endpoint of this vanishing faith in history. European historians basically countered these doubts by two strategies of demarcation. First, by attempts to enhance the scholarly status and ‘objective’ credentials of history by increasingly expulsing the rhetorical and artistic dimensions from its disciplinary domain. An increasing tendency to conceive of history as a Wissenschaft, opposed to Kunst or art, by identifying the discipline with its empirical research methods (Forschung) at the cost of the literary and artistic methods of its presentation (Darstellung) was the result (see Hardtwig 1990, Scholtz 1991 and History: Theories and Methods).
Second, these doubts were countered by demarcating disciplinary history sharp from any substantial philosophy of history, especially from its Enlightenment and Hegelian variants (including Marxism), and from any practical function. In the famous words of Ranke historians were not to pass any judgement on the meaning of the past—as the Enlightenment had done—but only ‘to show what actually had happened.’ By this demarcation strategy the reflection on the practical functions of history was excluded from the disciplinary discourse and was expelled to philosophy of history.

This epistemological demarcation had become possible while history was professionalizing and attaching itself to the national states both institutionally and financially. Because both the state elite’s and the majority of the professional historians presupposed that education in (national) history was essential for ‘nation building,’ the practical functions of history stopped being a problem. The practical function of history was now conceived of as indirect—through individual and collective identity formation alias Bildung—rather than as direct through exempla. This view was also held by proponents of a ‘contemplative’ function of history, like Ranke.

The ideal of objectivity was silently identified in historical discourse by promoting the practical cause of the nation state. This identification was not seen as a problem, because in the dominant conceptions of history the historical process itself was identified with the genesis of nations and states. It would take two world wars before this identification turned into a serious problem due to an increasing lack of plausibility. Nietzsche’s nasty question, until then comfortably put aside by many professional historians as ‘philosophical,’ had to be faced at last: what good is the study of history anyway?

Nietzsche’s analysis and classification of the functions of history in The Uses and Abuses of History although framed as a critique of nineteenth century discipline of history in Germany, has proved to be very fruitful up to the present day (Rüsen 1983–89; Kocka 1989, Hardtwig 1990, Tollebeek 1990). Basically, Nietzsche distinguishes three ways to deal with the past and three types of history that correspond with three different attitudes and basic needs of human beings. Therefore, history has three basic functions, which cannot be reduced to each other and which serve as mutual correctives.

The first way to deal with the past is pragmatic, as an active acting being. Actors may address the past in search of examples, which, according to Nietzsche, deserve imitation. The past addressed in this way is treated as ‘a collection of antiquities’ or as ‘a museum;’ therefore, this ‘pious’ type of history, i.e., history just for the sake of the past, is labeled antiquarian history by Nietzsche. Because man is not only directed towards the past, but also towards the future, it is impossible always to treat the past as a ‘museum.’ In order to create something new it is necessary to break with the past to some extent and to replace it. Therefore, it is also necessary to address the past in a critical way, as something to be criticized as fit for replacement. This type of handling the past, which Nietzsche compares to ‘cutting one’s roots loose with a knife,’ is called critical history.

All three types of history have their own type of dangers and deficiencies, which can only be remedied by history of the other types. Monumental history, for instance, tends to equalize the past and the present and to be very selective, obliterating differences and huge parts of the past, unfit for the monumental function. This tendency can only be counteracted by the antiquarian impulse, which in turn suffers from ‘historical myopia’ and from a ‘blind drive to collect.’ This tendency, in turn, can only be counteracted by the critical impulse, which in turn must be held in check by the other two in order to prevent critical history from degenerating into a war against one’s past.

Historiography can be seen as the combined product of these three impulses, in varying mixes. Disciplinary history since the nineteenth century, however, has usually—although not exclusively—embraced the antiquarian self-image and legitimization, because the recognition of both the monumentalistic and the critical approaches to the past would raise the problem of its practical functions and its objectivity. In accordance with this contemplative self-image of most historians, the antiquarian presentation of identity—i.e., the narrative reconstruction of the genesis of individuality in time—is usually presented as the discipline’s only practical function. As in Nietzsche’s time, the monumental and the critical functions of history are usually not discussed within the disciplinary boundaries (Angehri 1985). At times, however, as in the 1970s, the situation has been different, because of an influential number of ‘critical’ historians in the profession (Kocka 1989).

Symptomatically for this state of affairs is that recently the monumental function of history has been delegated to a separate domain, i.e., the domain of collective memory and of lieux de mémoire (see History and Memory). The same holds for the critical function of history, which is central to projects like gender history, postcolonial studies, and Foucault’s critical history (which replaces the Enlightenment self-image of the West by an image of a disciplined ‘carceral society’). These forms of critical history were often not regarded as belonging to the domain of history proper or are at best tolerated in its margins (Foucault 1980, Scott 1988). Mainly in one historiographical domain—that of the Holocaust—reflection on the functions of
history has included both its critical and monumental functions, because the very possibility of the anti-
quarierian approach is fundamentally questioned here. Historical representation as such has turned into a problem, because it is doubted whether the normal categories and procedures of historical representation in order to ‘objectify’ the past can function in this ‘unspeakable’ domain. Some hold that psychoanalytic categories like trauma, repression, transfer, splitting off, and working through are more apt to characterize the relationship between the historical representations and represented historical reality. Others have suggested that the ‘unspeakable’ and ‘overwhelming’ dimensions of the Holocaust can be better charac-
terized through the notion of the sublime, suggesting a deep analogy between the confrontation with the Holocaust and the confrontation with an earthquake or an avalanche (see Holocaust, The, Friedländer 1992, LaCapra 1994).

Mainly in this historiographical domain, the discus-
sion about the functions of history is directly connected to the discussion on representation and its limits. Whether this more inclusive type of debate will alter the dominant discourse on history remains as yet to be seen.

See also: Historicism; Historiography and Historical Thought: Classical Period (Especially Greece and Rome); Historiography and Historical Thought: Current Trends; Historiography and Historical Thought: Modern History (Since the Eighteenth Century); History and Memory; History and the Social Sciences; History: Overview; History: Theories and Methods; Holocaust, The; Linguistic Turn and Discourse Analysis in History; Syntax-Semantics Interface

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History of Science

The history of science studies the emergence and development of systematic knowledge. Just what kind of knowledge that is—whether it is defined by subject matter, reliability of results, contradistinction to technical know-how, cumulative progress, disciplinary consensus, and/or method of inquiry, demonstration, or explanation—is a point of persistent debate and reflection within the history of science and its cognate fields in philosophy, sociology, and anthropology. Linguistic and historiographic traditions diverge sharply on this point. Whereas Francophone and Anglophone scholars have since the mid-nineteenth century largely reserved the honorific ‘science’ for the natural sciences and mathematics (influenced by Auguste Comte’s hierarchy of sciences in his Cours de philosophie positive 1830–42, in which only some had reached the stage of ‘positive’ knowledge), the German Wissenschaft still refers to the range of fields covered by the Latin scientia, from physics to philology. Moreover, recent explorations of experiment and other practices have blurred the venerable boundary between ars and scientia, technique and systematic knowledge (whether understood narrowly as ‘science’ or broadly as Wissenschaft); close investigation of the sciences even in the restrictive English and French usage has furthermore revealed considerable variety among methods and explanations in, for example, biology and physics. Finally, studies of pre-seventeenth-century and non-Western intellectual traditions have made the creation of categories like ‘science,’ as well as the classifications of knowledge that order such categories, themselves objects (rather than presuppositions) of historical research. Hence this article will not attempt to delineate sharply the boundaries of ‘science,’ but rather briefly survey the (a) emergence and status of the history of science as a recognized field of inquiry; (b) principal divisions of the field and disciplinary affinities; (c) periodizations and narratives that have shaped those divisions; and (d) major historiographical developments since about 1970 (for an earlier survey see Kuhn [1968] 1972).

1. Emergence and Divisions of the Discipline

The history of science is an ancient pursuit, but a relatively young discipline. From Aristotle through the early nineteenth century, practitioners of one or another branch of knowledge have variously used the history of their field to argue for its dignity and importance, introduce it to beginners, situate it within a broader cultural milieu, summarize the literature to date, position themselves in relationship to that literature, praise and blame predecessors, give evidence of progress, extrapolate a program for future research, and draw lessons concerning the nature of knowledge and the conditions for its flourishing. In works like Joseph Priestley’s The History and Present State of Electricity (1767) or Georges Cuvier’s Rapport historique sur les progres des sciences naturelles depuis 1789 (1808), the history was inseparable from the science. Particularly in fields dominated by empirical research, the judicious sifting and ordering of past results was a precondition for coherence and a means for achieving consensus on what was reliably known and where the major challenges for future research lay. These functions are preserved today in the scientific review article and the posing of key ‘problems’ (e.g., the celebrated Hilbert problems), and practicing scientists occasionally still appeal to the past history of their field for present guidance, especially in times of crisis (Graham et al. 1983). By the mid-nineteenth century, however, histories of science had become distinct from scientific publications, although they were still written primarily by scientists, including prominent figures such as William Whewell, Marcellin Berthelot, Ernst Mach, and Pierre Duhem. Their histories often criticized the current state of science by establishing the genealogy of a controversial hypothesis (e.g., atomism), analyzing the origins of a suspect concept (e.g., absolute space) for hidden flaws, or pleading the superiority of one approach to science over another (e.g., Kantian ideas over Comtean facts).

By 1900, histories of science had become a genre distinct from science, but they were still motivated by, and deeply engaged with, contemporary scientific developments (Laudan 1993).

History of science coalesced only gradually as a recognizable discipline in the twentieth century, with its own distinctive program of training, institutions (journals, professional societies, university positions), and scholarly standards. Spurred by the organiza-