The idea that historiography is or should be a science, founded on the critical research of documents, is connected to the processes of institutionalization and of professionalization of historiography as an academic discipline in the late eighteenth and nineteenth centuries. The origin of this idea is usually ascribed to the founders of the so-called “Historical School” in Germany, like Barthold Georg Niebuhr (1776–1831), Wilhelm von Humboldt (1767–1835), and Leopold von Ranke (1795–1886), but the idea has also been formulated outside Germany. In France, for instance, Fustel de Coulanges (1830–1889) stated in his inaugural lecture in Strasbourg in 1862 that “history is and should be a science.” Forty years later in England John B. Bury (1861–1927) made the very same point in his inaugural lecture, entitled “The Science of History” stating that though historiography “may supply material for literary art or philosophical speculation, she is herself simply a science, no less and no more.” Karl Marx (1818–1883) too considered it a “science,” although he had a very different idea of what the “science of history” looked like.

Claims to the “scientific” status of historiography have been debated and criticized for as long as they have been made. This situation had not changed when in the twentieth century many claimed that historiography is – or should become – a “social science.” I focus on three of the constitutive ideas of practically all advocates of “scientific” historiography: “truth,” “objectivity” and the “critical method,” concluding with a discussion of the “comparative method” whose fortunes fluctuated with the popularity of at least one version of scientific historiography. I do this on basis of what historians have been debating and arguing for rather than on the basis of what the philosophers have stated about the topic.

We may approximate the meanings of “scientific historiography” by examining first what its advocates contrasted it with. The most widespread type of scientific historiography, of the Rankean–Humboldtian variety, excludes literature, speculative philosophy of history (especially in its Hegelian form), and Enlightenment philosophical or conjectural historiography, though both Ranke and Humboldt acknowledged that historiography contains an irreducible poetic element. Scientific historiography was conceived of as professional historiography, not as the business of amateurs, or later of journalists, nor of other people susceptible to partisanship.
The “founding myth” of Rankean scientific historiography was its claim to describe the past “as it really was” (“wie es eigentlich gewesen”) and to be beyond any form of partisanship; that is, to be objective. This combination of a reality claim – implying a truth claim of historiography, in contrast to all fictional genres – and an objectivity claim – implying a claim to intersubjective validity in contrast to all non-scientific genres – has been characteristic of “scientific” historiography ever since.

According to the same “founding myth” historiographic objectivity was institutionally safeguarded by the impartial state that pays its historians and thus releases them from economic dependence on partisan interests, as had been the case in ecclesial and court historiographies. The identification of scientific historiography with objectivity was implicitly connected to a political theory of the impartial state that included the assumption that state archives were the primary storehouses of impartial information for scientific historians.

It is thus not accidental that scientific historiography and the institution of centralized state archives have developed hand in hand in the post-Napoleonic period: the archive was soon regarded as the historian’s only true workshop. Accordingly, those historians that would later reject the theory of the impartial state, ranging from the “Prussian School” in the later nineteenth century and all other proponents of explicit nationalism in historiography to the proponents of Marxism and “critical theory” in the twentieth century, have all rejected the idea of historiographic objectivity.

The same logic explains why historians critical of the idea of the impartial state, especially those working in postcolonial and subaltern studies have recently deconstructed the idea of impartial state archives, containing impartial state documents as the raw material of scientific historiography. Criticizing the very idea of impartiality as an unrealistic and ideological concealment of power relations, these historians subscribe to Foucault’s theory that the production of “knowledge” always takes place in specific power relations and corresponds with “truth regimes” – in contexts of supra- and subordination. The colonial setting was a pure specimen of such a power relation and Foucault’s theory thus is being used to undermine the supposed impartial archival basis of scientific historiography.

The same Rankean “founding myth” requires distance in time for the scientific historian to write objectively because it takes time for partisan interests to decay and for the principal political actors to die out. Most historians regarded 50 years distance to be the absolute minimum for “hot” history to “cool down” and to transform into “cold” history, but 100 years to be safer. So just like Hegel – whom they usually portrayed as their antipode – scientific historians subscribed to the idea that truth develops – or “unfolds” – in time. This conception of historical time has only recently become the object of reflection.

Contemporary historiography had therefore been considered for a long time a contradictio in adiecto. It was explicitly excluded from “scientific” historiography well into the twentieth century. Only in the aftermath of the Second World War and the Holocaust did contemporary historiography slowly gain recognition as a legitimate specialization of scientific historiography, manifested by professorships, peer reviewed journals, and institutes of its own. After 1945 scientific historiography could no longer require a substantial distance in time, because twentieth-century history was experienced by many as so catastrophic that it required immediate handling.
Significantly, however, historians had not considered important forms of partisan bias as impediments to writing scientific historiography until well into the twentieth century. In the case of Ranke and Humboldt, for instance, subscribing explicitly to the Christian religion and a Christian worldview was not regarded as being partisan and as threatening objectivity, nor was subscribing explicitly to the cause of the (German) nation/state regarded as such by most of the neo-Rankeans later on, nor their common pure Eurocentric worldview. The very same held for scientific historians outside Germany, so furthering the cause of the nation/state, being patriotic and Eurocentric has been regarded as being compatible with striving after objectivity – well into the twentieth century. This kind of partisanship came even more natural to those historians who identified their nation with one specific religion, like Protestantism in the Scandinavian states and Catholicism in Poland, Ireland, or Spain. The same held for class partisanship in Marxist historiography. In a similar vein, subscribing explicitly to a male worldview had not been regarded as a form of bias and partisanship until gender historians called attention to this fact since the 1970s. Scientific historiography thus has been plagued by serious blind spots in its identification of biases and interests.

These submerged or repressed political dimensions of scientific historiography have provoked three types of criticisms. The first type is the “apolitical” rejection of historiography’s claim to “scientificity” based on the argument that history is a form of literature, as we find in Jules Michelet, Thomas Carlyle, and Golo Mann. The second type is the political “presentist” position, which rejects the “scientificity” of historiography by the argument that “all historiography is politics,” as we find in Friedrich Nietzsche, Charles Beard, Michel Foucault, Hayden White, and in “postmodernists” like Keith Jenkins. The third type is the political neo-Enlightenment position which acknowledges the political character of historiography but calls for its “rationalization,” as we find in Jürgen Habermas, Jörn Rüsen, and Emil Angehrn. Thus fundamental criticism of the claims to “objectivity” and to “impartiality” have been accompanying “scientific” historiography from the very start.

Theory and Method in Historiography: Some Preliminary Distinctions

To clarify further the notion of scientific historiography, it is necessary to introduce some basic distinctions. There are theories that deal with the characteristics of history as a process such as, for instance, Ranke’s idealistic theory of history (Ranke 1867–: vols. 33/4, 665; vols. 49/50, 8), or Marx’s materialistic theory of history as class struggle, or social Darwinist theories of history as “the survival of the fittest.” Then there are theories that deal with the characteristics of the knowledge of history, such as Ranke’s theory that scientific knowledge of history has the form of concrete particulars and Marx or Comte’s conception of law-like scientific knowledge of history. We call theories of the first type substantial or material theories of history, while theories of the second type are cognitive theories of historiography, i.e. theories of historiographic knowledge. Cognitive theories of historiography can be subdivided into epistemological theories and methodological theories.
Substantial and cognitive theories have often been interrelated, because presuppositions about what can be known about the past are linked to presuppositions about how the past can be known. Substantial theories that hold that the historical process is characterized by underlying causal mechanisms and regularities, analogous to theories of classical mechanics, have been interrelated with cognitive theories that posit that scientific knowledge of history implies knowledge of general laws (this position is usually labeled as positivism). The substantial theory that the historical process is not characterized by causal mechanisms, but by a fundamental contingency of all events has been interrelated with cognitive theories that posit that real knowledge of history is knowledge of particular facts instead of general laws (this position is usually labeled as Historismus or historicism).

Substantive theories not only have consequences for methodological positions – generalizing versus individualizing ideas of method – but also for epistemological positions, that is, positions concerning the validity of knowledge claims. Substantive theories that posit some kind of affinity or even identity of the knowing subject and the historical object, such as Hegelian idealism and its offshoots in Droysen’s and Dilthey’s versions of historicism, have usually been interrelated with methodological theories that posit a distinct kind of method for the human sciences – such as understanding or Verstehen or interpreting, in contrast to the explanatory methods of the natural sciences. These methodological theories have, in their turn, usually been interrelated with distinct epistemic theories, linking methods of understanding to intentional and hermeneutic theories of knowledge, and methods of explanation to empirical theories of knowledge.

A Short History of the Historiographic Method

In history, Jean Bodin first introduced the term historiographic method in a systematic way in the sixteenth century in his treatise on source criticism, Methodus ad facillem historiarium cognitionem (1566). The historiographic method was the method of source criticism, and this is the etymological origin of the “critical” historiography. Characteristically, Bodin’s treatise intended to establish the ways by which reliable knowledge of the past could be established intersubjectively by checking written sources against each other and by assessing the reliability of the information conveyed by them, relating them to the time and place of production and to the interests involved. The origins of the method of source criticism are in philology. Its hallmark is the intersubjectively controllable footnote, because as Anthony Grafton has argued “only the use of footnotes enables historians to make their texts not monologues but conversations, in which modern scholars, their predecessors, and their subjects take all part” (Grafton 1997: 234).

The critical method was intended to defeat skeptical doubts with regard to the possibility of reliable knowledge of the past. Descartes in his Discourse on Method (1637) had formulated this doubt in an exemplary way, where he compares historiographic knowledge to a “multitude of different opinions,” concluding that historiography was no match for certain mathematical knowledge based on deduction. Pierre Bayle in his Historical and Critical Dictionary (1696) was the first to develop a systematic critique of Cartesian skepticism in relation to historiographic knowledge by formulating rules that
verified or falsified historiographic propositions, just like Descartes had done for mathematical propositions. Bayle had insisted that “concrete” certainty was possible in historiography, though this certainty is different from the mathematical variety – anticipating Collingwood’s later arguments in his *Idea of History* (1946).

Skepticism concerning historiographic knowledge had been fed by the large quantity of forgeries parading as original historical documents, primarily produced by competing churches and nobles to back up claims to rights and property. The case of the *Donatio Constantini*, proven a forgery by Lorenzo Valla in 1440, is a famous example. Therefore, the traditional claims to impartiality, truth, and trustworthiness of historians, dating back to classical Antiquity, were rarely believed at face value.

According to the classical model going back to Thucydides (460–400 bc) it was the duty of the historian to stick to the facts and to tell the *truth*, the *whole* truth, and *nothing but* the truth. Contrary to poetry, historiography dealt with *res factae* and not with *res fictae*. This Aristotelian model had received its canonical formulations in Cicero (106–43 bc) and in Lucian (ca. ad 125–200), who also had linked historiographic truth directly to *impartiality* by avoiding moral blame and envy (*sine ira et studio*). Ranke reproduced these classical ideals in the nineteenth century, but added the impersonal critical method by which historians could expose forgeries. The basic idea of the critical method, already originating in the Renaissance and in the humanist tradition, is to detect or to reconstruct the original version of a text, because all text variants (in whole or in fragments) are derivative and secondary to the original one.

This philological idea of the original text is known in historiography as the primary source or document. Johann Christoph Gatterer (1727–1799) and August Ludwig von Schlözer (1735–1809) at Göttingen University were the first to apply it systematically to history in the eighteenth century. Nevertheless, the later Ranke became associated with the introduction of source criticism to historiography in popular memory. Since Ranke, scientific historiography is conceived of as historiography based primarily on primary sources, at least in theory, because even Ranke did not stick to this own rules, as Heinrich Leo and Anthony Grafton have shown (Grafton 1997: 62–72). The link between the primary source and the statements based on them was established by the footnote.

The importance attributed to the primary source by Ranke stems from its identification with first-hand knowledge of an eyewitness: “I can see the time approach when we will no longer have to base modern history on reports, even those of contemporary historians – except to the extent that they had first-hand knowledge – to say nothing of derivative reworking of the sources. Rather we will construct it from the accounts of eyewitnesses and the most genuine and direct sources” (Ranke, cited in Grafton 1997: 51). Although Ranke of course knew that individual sources or documents could sharply contradict each other, he thought that every document widens the point of view of the historian and enabled him (not yet: her) to be more impartial and thus objective.

As he subscribed to the theory that the state archive was the primary and impartial repository of documents for historiography, Ranke implicitly promoted specific classes of documents as “transparent windows on past states and events rather than colorful reconstructions of them, whose authors wrote within rigid conventions, had not heard or seen everything they reported, and often wished to convince their own
audience of a personal theory rather than simply to tell what happened” (Grafton 1997: 59–60). Unlike contemporary philosophers of language and science, Ranke did not acknowledge that all observation statements are theory-laden, nor did he conclude from this fact that the historian must always decide which of the “observation theories” fits the evidence best.

Ranke did not reflect on the troublesome fact that the elimination of forgeries does not by itself produce “truth” – let alone the whole truth – nor on the relationship between what has been recorded in documents in state archives and what had not been recorded. The “silent voices” – and the “silenced voices” – in history had to wait till the 1960s before “symptomatic silences” and systematic repression were recognized as a problem for scientific historiography. The Holocaust – including the “problem” of eyewitnesses who can no longer testify to what they have experienced – has been the trigger for this new awareness in scientific historiography.

The direct relationship between historiography’s claim to truth and its critical method would characterize all later treatises on scientific historiography, although what was meant by method changed over time. In the eighteenth century, Enlightenment historians like Schölzer regarded not only the source critical techniques as the historiographic method (Forschung or research), but also the way the results of historiographic research were synthesized into a textual whole (Darstellung or composition) and presented to an audience. This broader conception of method had its roots in the classical rhetorical tradition. The philosophy of historiography would rediscover it only in the 1970s. The German historian and theorist Johann-Gustav Droysen has become one of the pivotal historians behind this rediscovery of the textual and rhetorical dimensions of historiography, because his treatment of historiographic methods in the earlier and the later versions of his Historik embody the transition from the broader to the narrower conception of historiographic method.

Most of the nineteenth and twentieth centuries, however, were dominated by Ranke’s narrower research-oriented conception of the historiographic method, limiting the methodical character of historiography and its truth claims to source criticism. Canonical formulations of this conception are: E. Bernheim’s Lehrbuch der historischen Methode (1889) and Ch. Langlois and Ch. Seignobos’, Introduction aux études historiques (1897). The latter echoed what Ranke had stated earlier on: “L’histoire se fait avec des documents” (“historiography is made with documents”) and “pas de documents, pas d’histoire” (“no documents, no historiography”).

The historiographic narrative, the Darstellung, was no longer regarded as methodical and truthful (wahrheitsfähig), but as the literary, artistic, or aesthetic component of historiography. Therefore, the question whether historiography belongs – partially or whole – to the “sciences” or to the “arts” has been accompanying “scientific” historiography from its very beginning and the question whether narratives can be called “true” or not has become part of the continuing Methodenstreit.

Critical Method and Its Discontents

In the nineteenth century, the historiographic method usually meant the techniques of conducting historiographic research of texts, the sources. These philological techniques
were traditionally subdivided into three parts, corresponding with three subsequent steps in research: **Heuristics**, the techniques for locating the relevant sources; **source criticism**, the techniques by which the temporal and spatial origins of the sources are established as well as their authenticity; and **interpretation**, by which the cleansed information derived from the sources is put together by means of interpretation in order to infer “what really happened.” The distinction between primary and secondary sources was crucial for historiography’s claim to be a science. Primary sources consist of the written material produced more or less contemporaneously with the object of research, ideally recorded by eyewitnesses: official records of parliamentary debates are a prime example. The time-span between the recording of primary sources and what they record should be as short as possible, because distance in time was regarded as a major source of corruption of the information conveyed. Secondary sources consist of records written a considerable time after the fact and not by eyewitnesses; hearsay testimony is a prime example. As the information in secondary sources is based on other sources, it is, at best, second hand; therefore, it is regarded as less reliable than primary source information.

Another traditional distinction in historiographic method is between internal and external source criticism. **Internal source criticism** is actually textual criticism, i.e. the philological procedures by which a text is inferred or reconstructed when it is preserved in an incomplete form or in several variants, and the textual procedures by which authorship and textual authenticity are checked and its meaning established. **External source criticism** consists of those procedures critics use to check a source against information derived from other sources – written and material. The so-called auxiliary sciences, such as paleography (the study of writing), chronology, toponomy (the study of etymologies of the names of places), numismatics (the study of coins), and diplomactics (the study of official documents), usually play an important role in this phase. When modern historians are dealing with non-scriptural, oral cultures, or with cultures that left few or no documentary traces, archeology and anthropology often function as auxiliary science.

According to the nineteenth century concept of scientific historiography as documentary, preferably archive based, non-scriptural or “low” cultures, were primitive by definition, lacking both a state and its archives, and thus lacking a history comparable to that of “high” cultures, susceptible to scientific investigation. The exclusively documentary conception of historiographic evidence defined and limited the object of scientific historiography to the history of “high” cultures, especially to the political and religious history of the west. Only in the second half of the twentieth century did these Eurocentric biases in the very conception of the historiographic method come under criticism by postcolonial theory and “subaltern history.” Before that time “history from below” had attempted to study the histories of the “lower” classes and of women, and of other societal groups that usually left no archived records themselves.

Since the 1970s, the notion of the impartial state archive has been deconstructed as the place where specific information is constructed under specific power relations instead of just being impartially stored. Under the influence of Foucault and Derrida, Manoff has summarized the recent deconstruction of the archive as follows: “The methods for transmitting information shape the nature of the knowledge that can be produced. Library and archival technology determine what can be archived and therefore what can be studied. Thus Derrida claims ‘archivization produces as much as it records the event’”
“Government documents may prove useful, but not necessarily because of their accuracy or objectivity” . . . “All conservational decisions are contingent, temporary, and culturally self-referential, even self-laudatory; we want to preserve the best of ourselves for those who follow” (Manoff 2004: 12, 15, 20).

Only in the course of the twentieth century did reference to multiple methods within one discipline become the rule, thereby reopening the problems of truth and objectivity and paving the way for a new wave of anti-realism and epistemological skepticism in historiography. For if “the” method could no longer be regarded as the procedural guarantee for the truth and objectivity of the discipline, what could? Its practitioners, therefore, have often regarded recognition of plural methods within one discipline as a threat to the discipline’s scientific credentials and as a symptom of an epistemological crisis. This experience of being “threatened” was based on the positivistic idea that “normal” science is characterized by one paradigm and by a methodological and by epistemological consensus.

From the late 1960s onwards, this process of methodological differentiation within all of the human sciences took an unprecedented pace, leading to a poly-paradigmatic fragmentation of most disciplinary fields and a questioning of most traditional disciplinary boundaries and self definitions. This also held for historiography, which many regarded in the 1960s and 1970s as one of the social sciences leading to the founding of an academic movement of “Social Science History.”

The Comparative Method as the “Royal Road” to Scientific Historiography?

In this poly-paradigmatic situation since the 1960s both the quantitative method and the comparative method have been repeatedly suggested at times as the best way to restore historiography’s scientific glory, sometimes as separate methods, but usually together. These pleas are usually continuations of arguments developed earlier in the twentieth century especially by Marc Bloch (1886–1944) and Henri Pirenne (1862–1935) in France, and by Max Weber (1864–1920) and Otto Hintze (1851–1940) in Germany. For both Bloch and Pirenne comparison was also a method for breaking out of the national framework usually taken for granted in historiography, thus anticipating many recent arguments in favor of transnational approaches such as “global history.” At least since Max Weber, the comparative method has been proposed as the royal middle way between the individualizing method of historicism and the generalizing, nomothetic methods, or at least aspirations, of positivism. Although it had turned out to be impossible to discover empirically substantiated “universal” or statistical laws that hold for the whole of history, comparative historians and social scientists have demonstrated the possibility of producing general statements about temporally and spatially restricted ranges of historical events in the form of empirical generalizations, middle-range theories, ideal-types, models, mechanisms etc. They can be formulated in either quantitative or qualitative forms. Moreover, only the comparative method allows for confirmed statements about the specificity and generality of historical phenomena and for an empirical justification of the attribution of causes. From an epistemological point of view, comparison therefore
is one of the main methodological “reality checks” available to historians – and the broader this “check” is done, the stronger is the empirical support for the knowledge claims involved.

From a political point of view, the comparative method has often been presented as a most effective way to “neutralize” political and cultural biases of historians. Some of the more sensitive minds in the historical profession, like Henri Pirenne, recognized political bias as one of the chief problems of scientific historiography. After the First World War had shown how easily scientific historians could transform themselves into overtly nationalist historians, Pirenne and Bloch sought the solution to this problem in comparative historiography, which they saw as the only mean to “correct” the national biases and the nationalist myopia of “scientific” historians. They propagated the comparative method as the cure to both the cognitive problems of “single case” historiography and to the political biases of national historiographies. In the words of Henri Pirenne: “The comparative method alone can diminish racial, political, and national prejudices among historians” and “The comparative method permits history in its true perspective” (Henri Pirenne in Meyerhoff 1959: 98–9). This creed was also formulated by Marc Bloch who – together with Lucien Febvre (1878–1956) gave birth to the so-called Annales-approach, which after the Second World War also spread widely outside France.

From the 1960s onwards, a new generation of usually social science-inspired historians forcefully advertised comparative historiography following the arguments put forward already by Pirenne and Bloch in the 1920s. Although “Comparative History” became a growth industry for a while – including specialist journals like Comparative Studies in Society and History – as in the interwar period the comparative method failed to “convert” the majority of scientific historians who usually remained working within one single national framework.

After the 1980s, “New Cultural History” and “New Narrative History” took their inspiration from the “linguistic turn” and emphasized the textual aspects of historiography. They forced the comparative method on the defensive again. Simultaneously, the New Cultural History rejected the generalizing social sciences as models for historiography. It focused on the deep study of single historical cases, as in “micro-history” and the “history of everyday life,” although it did borrow some of its methods and models from anthropology.

In an intellectual climate strongly influenced by postmodernist relativism, “collective memory” and “sites of memory” have turned into the new central categories of historiography in the 1990s. Since in this new climate the fragmentation of historiography and memory is taken for granted, the possibility of truth and objectivity in historiography are seen as outdated, and “ideological.” Therefore, the idea of scientific historiography has met strong cultural countercurrents in recent times. Nevertheless, scientific historiography is still being defended against its two traditional competitors – the “literary” and the “political” conceptions of what “doing History” is about. As before, epistemology is pitched against skepticism and comparative methodology against “anything goes,” albeit with more sophisticated arguments than before the challenge of postmodernism.

Philosophical defenders of scientific historiography, under the influence of postmodern positions varying from social constructivism to discourse analysis, have
become conscious of the radically linguistic and constructed character of past and present reality. Naïve realism has yielded its place to more sophisticated variants of realism making it possible to reinterpret all the fundamental notions of scientific historiography as constructed – facts, narratives, sources, and archives – without yielding the field of historiography to idealism – in its Collingwoodian, Gadamerian, Berkhoffian, and Ankersmitian variants – or to epistemological skepticism – in Hayden White’s or other postmodern variants. Against idealism and skepticism, scientific historians argue that only they can explain why historiographic narratives unlike all fictional narratives contain a truth claim and an objectivity claim, which are debated on the basis of evidence; why scientific historiography is necessarily and not accidentally connected with the critical method, based on the twin notions of evidence and the footnote; and why scientific historiography claims intersubjective validity for historiographic knowledge.

In response to the challenge of postmodern positions, practitioners of scientific historiography had to rethink their epistemological presuppositions and commitments, including their notions of truth and objectivity. Truth cannot be conceptualized as a simple correspondence of statements to reality as in old pre-war theories of truth, and objectivity cannot be conceived of in terms free of every prejudgment, bias, perspective or prejudice or in the Rankean terms of wie es eigentlich gewesen. Fundamental for all recent attempts to reformulate scientific/critical historiography is the presupposition of multiple reconstructions of every past. Therefore, all judgments of the representational adequacy of reconstructions of the past are relative to other reconstructions. Fundamental for scientific historiography is that these judgments are evidence based and thus are made on epistemological grounds instead of on aesthetic, literary, or political grounds, as is the case according to “literary” or “political” philosophies of historiography.

The philosophy of scientific historiography – in contrast to philosophies of “political” and “literary” historiography – keeps viewing historiography primarily as a cognitive enterprise, based on epistemology and on comparative methodology. In contrast to philosophies of “political” and “literary” historiography, philosophy of scientific historiography thus emphasizes the inseparability of historiographic narration and research. As Anthony Grafton put it, “Historical texts are not simply narratives like any other; they result from the forms of research and critical argument that footnotes document” . . . “The history of historical research cannot usefully be separated from that of historical rhetoric: even the best-informed efforts to achieve that separation distorts the developments they seek to clarify” (Grafton 1997: 232). It is the ongoing task of the philosophy of scientific historiography to elucidate why this is the case and to develop the criteria of its rationality.

Bibliography


