A Diversity of Divisions: Tracing the History of the Demarcation between the Sciences and the Humanities

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Abstract: Throughout history, divides between the sciences and the humanities have been drawn in many different ways. This essay shows that the notion of a divide became more urgent and pronounced in the second half of the nineteenth century. While this shift has several causes, the essay focuses on the rise of the social sciences, which is interpreted as posing a profound challenge to the established disciplines of the study of humankind. This is demonstrated by zooming in on linguistics, one of the key traditional disciplines of the humanities. Through the assumption of a correspondence between mental and linguistic categories, psychology became of central importance in the various conceptions of linguistics that emerged in the nineteenth century. Both linguistics and psychology were very much engaged in a process of discipline formation, and opinions about the proper directions of the fields varied considerably. Debates on these issues catalyzed the construction of more radical divisions between the sciences and the humanities. Both Wilhelm Dilthey's dichotomy between understanding and explanation and Wilhelm Windelband's dichotomy between nomothetic and idiographic sciences respond to these debates. While their constructions are often lumped together, the essay shows that they actually meant very different things and have to be treated accordingly.

In the past few years, awareness has grown that the history of the humanities is an integral part of the history of science, which, for our purposes here, can also be thought of as the history of knowledge. At any time (including the nineteenth century), humanistic methods, practices, and scholarly goals have partially overlapped or otherwise been intertwined with those in the natural sciences to such an extent that we might wonder if it makes much sense to discuss them separately.[1] This newfound awareness of the contingency and fluidity of the

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[1] Rens Bod, Jaap Maat, and Thijs Weststeijn, "Introduction: The Making of the Modern Humanities," in *The Making of the*

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boundaries between the sciences and the humanities provides a good point of departure from which to inquire where the supposed boundaries between them came from.

The opinion that humans merit a special kind of intellectual attention is at least as old as Socrates, who was shocked to find that Anaxagoras would explain his moral actions by the materials of which he was made.[2] However, concerns of a divide between two fields of knowledge that came to be attributed to the "sciences" and the "humanities" have acquired their current form and urgency only in the modern period.

The sciences/humanities divide is today often seen through the lens of the famous two cultures controversy surrounding C. P. Snow's 1959 lecture. At first sight, Snow's diagnosis seems to echo George Sarton's formulation of the difference between humanists and scientists that Sarton thought should be bridged by historians of science; but immediately, we see different agendas at work.[3] Snow lamented the gap between a progressive scientific culture and a traditional literary culture, mainly for the reason that if intellectuals kept failing to understand science, they would stand in the way of scientific and technological solutions for war, overpopulation, and poverty. In that respect, his agenda was technocratic, while Sarton felt "the main duty of the historian of science" was the "defense of tradition."[4]

Apart from serving different agendas, different constructions of the sciences/humanities division were built from different ideas about what constituted either the sciences or the humanities, and each had different paradigm disciplines as their focal points. For Snow and his opponent Francis Leavis, the humanities were represented chiefly by (English) literature; Sarton, when thinking of humanists, was thinking of "men of letters, historians, philosophers."[5] In the case of other constructions, some of which will be discussed more extensively below, the paradigm examples of a humanities discipline would be philology, history, or even psychology.

The first claim we defend in this paper, then, is that each formulation of the divide is different and needs to be seen within the intellectual and institutional agenda of the author who constructed it. The second claim is that in the nineteenth century, the context in which these divides were formulated was transformed by the challenging emergence of new disciplines, especially by what are now called the social sciences.

Our argument consists of three steps. First, we discuss the views of three canonical authors—Vico, Mill, and Helmholtz—all of whom dealt with possible sciences/humanities demarcations but who, generally speaking, did not have a strong sense that these demarcations were of fundamental importance. What we do see in their works, however, is how the status of the humanities was connected to the question of the status of knowledge about the human psyche. In the nineteenth century, the rise of scientific psychology gave this question a new urgency. Then with our second step, we show how psychology came to play a role in linguistics and we review how this led to controversies involving a variety of conceptions of the psychological approach to the study of language.

Humanities, Vol. 3: *The Modern Humanities*, ed. Bod, Maat, and Weststeijn (Amsterdam: Amsterdam Univ. Press, 2014), pp. 13–24, esp. pp. 13–15; and Lorraine Daston, "Objectivity and Impartiality: Epistemic Virtues in the Humanities," *ibid.*, pp. 27–41, esp. pp. 27–28.

[2] Plato, *Phaedo*, 96a–100b.

[3] Charles P. Snow, *The Two Cultures and the Scientific Revolution: The Rede Lecture, 1959* (Cambridge: Cambridge Univ. Press, 1960); and George Sarton, *The History of Science and the New Humanism* (New York: Henry Holt, 1931), pp. 69–72.

[4] George Sarton, *A Guide to the History of Science: A First Guide for the Study of the History of Science with Introductory Essays on Science and Tradition* (Waltham, Mass.: Chronica Botanica, 1952), p. 15.

[5] Sarton, *History of Science and the New Humanism* (cit. n. 3), p. 72.

Philosophical debates over the divide between the sciences and the humanities were deeply embedded in these discussions about the tasks and directions of linguistics and psychology. This is corroborated in the last step of our argument, where we show that the two great constructions of the divide, the proposals of Wilhelm Windelband and Wilhelm Dilthey, must be understood in this context and rest on radically different conceptions of the status of psychology.

FROM VICO TO HELMHOLTZ

Giambattista Vico is famous for introducing a sharp distinction between two kinds of science, especially in his 1725 *New Science*. Such a distinction does not figure in his earlier lectures on humanistic education. This is interesting, since the early modern period does bring some novelties pertinent to the possibility of two cultures that could lead us to expect such a division: a traditionalist humanism, a self-consciously novel natural philosophy, and (with Cartesianism) a radicalization of mind/matter dualism. Old and new, however, do not align simply with letters and natural philosophy. The polemics of the *querelle des anciens et modernes* are a case in point; in Jonathan Swift's *Battle of the Books*, ancient and modern poets attack each other at least as fiercely as natural philosophers. The dynamics of the early modern distinctions are complex and ambivalent, as can be seen from Vico's lectures. Delivered between 1699 and 1707, these orations were intended to inspire his students to devote themselves to the liberal arts at the beginning of the academic year.[6]

In these lectures, Cartesianism and the new natural sciences did not, as we might have expected, figure as a source of discomfort. In fact, Vico used both in order to bolster the humanistic program, which was to mitigate the effects of original sin through eloquence, knowledge, and virtue.[7] Vico was clearly of the opinion that the human world and the natural (physical) world were completely different things, with different properties; but he did not draw the conclusion that the studies of these were in some way opposed. Rather, mathematics and physics had a propaedeutic value in purifying the mind. In Vico's lectures we find an awareness of the interests of the humanist tradition, of the direction of modern science, and of the implications of substance dualism; but we do not find an opposition between humanistic and scientific cultures, let alone the idea that such an opposition should be of consequence for scholarly practice.

In Vico's *New Science*, this changed; here he explicitly contrasted his study of human institutions with the study of nature, to which he said philosophers had paid a disproportionate amount of attention. One thing that stood out in *New Science* was an attention to historicity as an insistence that there were things that people had socially produced over time. This meant that part of our connection to our forebears was historical; rather than assuming that

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[6] Giambattista Vico, *New Science: Principles of the New Science Concerning the Common Nature of Nations*, trans. David Marsh (from 3rd ed., 1744), ed. Anthony Grafton (London: Penguin, 1999). On the meaning of a traditional humanism see Anthony Grafton and Lisa Jardine, *From Humanism to the Humanities: Education and the Liberal Arts in Fifteenth- and Sixteenth-Century Europe* (Cambridge, Mass.: Harvard Univ. Press, 1986); Jonathan Swift, "The Battle of the Books" (1704), in Swift, *A Tale of a Tub: And Other Satires* (1909), ed. Kathleen Williams (New York: E. P. Dutton, 1975), pp. 137–165; Giambattista Vico, "Oration 1: On Self-knowledge" (1699), paragraph 1; and "Oration 4: On Education for the Common Good" (1704), paragraphs 1–4, both in Vico, *On Humanistic Education: Six Inaugural Orations, 1699–1707*, ed. Giorgio A. Pinton and Arthur W. Shippee (Ithaca, N.Y.: Cornell Univ. Press, 1993), pp. 35, 92–94.

[7] Giambattista Vico, "Oration 6: On the Proper Order of Studies" (1707), *ibid.*, pp. 125–140.

they were the same as we are, we ought to assume that people and their institutions have changed and developed.[8]

More than a century later, when Vico's work started to gain popularity, John Stuart Mill would agree explicitly with him on this point. In the sixth book of his *System of Logic* (1843), Mill investigated the proper methods for the "moral sciences" (the German translation of which, *Geisteswissenschaften*, would come to dominate German debates over the status of the humanities). Mill argued that the moral sciences had to follow an inverse deductive or historical method. He contrasted this with other methods, which were appropriate to other objects and of which the application to people would be based on a mistaken view of humans. The "chemical, or experimental," method, for instance, assumed that society changed people into substances with new properties—just as water was something different from both oxygen and hydrogen—and that therefore societies should be experimentally (comparatively) studied as wholes. This Mill would not have: "Human beings in society have no properties but those which are derived from, and may be resolved into, the laws of the nature of individual man." Similarly mistaken, for Mill, were the views that tried to geometrize social forces based on the example of astronomy and natural philosophy, as if there was ever only one kind of motif that drove people.[9]

Mill believed in the overall unity of science. Within this unity, however, different methods were appropriate to different objects, and Mill found that the study of people in historical societies was deserving of its own method. This worked with deduction from empirical generalizations, which were constantly to be checked by "psychological and ethical laws." The crucial point to understand is that Mill combined a methodological individualism and a belief that there were "laws of the mind"—laws of succession of mental phenomena that could not be reduced to physiology—with the additional belief that the actual thoughts and behavior of people were highly dependent on historical circumstances and therefore subject to change. At the deepest level, there were general laws of mind, but they worked in conjunction with institutions and customs that had been previously shaped.[10] People shaped the circumstances that shaped new people. According to Mill, this process was progressive, rather than cyclical; he identified this as his only disagreement with Vico on the subject. Here, a belief in the ultimate reliance on psychological laws of human activity worked both to distinguish the moral sciences from the others and to draw them within the scope of the *System of Logic*.

One reader of Mill's *System of Logic*, himself deeply concerned with the coherence of the sciences, was Hermann von Helmholtz. In an 1862 lecture on this matter, he found more cause to speak about the supposed isolation of the natural sciences and their potential inferiority. The prominence of Hegelianism in the previous decades had led to a view of science that worked best "in those sciences whose subject matter develops essentially from psychological foundations, and which therefore are aptly labeled *Geisteswissenschaften*."[11]

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[8] Vico, *New Science* (cit. n. 6), pp. 119–120, esp. paragraph 331; p. 81 (paragraphs 147, 148, or axiom 14, 15); p. 79 (paragraphs 138–140, or axiom 10).

[9] John Stuart Mill, *A System of Logic, Ratiocinative and Inductive: Being a Connected View of the Principles of Evidence and the Methods of Scientific Investigation* (1843), ed. J. M. Robson and R. F. McRae (Toronto: Univ. Toronto Press, 1973, 1974), Book 6, ch. 10; ch. 7, sect.1 (quotation); ch. 8, but *cf.* ch. 10, sect. 7.

[10] *Ibid*., Book 6, ch. 10, sect 4; ch. 4; ch. 5; ch. 10, sect. 3.

[11] Hermann L. F. von Helmholtz, "Ueber das Verhältniss der Naturwissenschaften zur Gesammtheit der Wissenschaften: Akademische Festrede," in Helmholtz, *Vorträge und Reden* (Braunschweig, 1884), pp. 117–145; 122 (quotation translated from "in allen den Wissenschaften, deren Gegenstand sich wesentlich aus psychologischer Grundlage entwickelt, und die daher unter dem Namen der *Geisteswissenschaften* passend zusammengefasst werden").

This had led to skepticism as to whether the natural sciences were even sciences, a skepticism that had subsided thanks to a series of undeniably important discoveries.

Helmholtz felt he could speak about the divide mostly in the past tense. But he thought some differences between its two sides still could not be denied; the humanities dealt with the spirit and its ordering activities and the natural sciences with indifferent matter. In addition, the natural sciences had been more successful than the humanities when it came to identifying laws and causes. The humanities could not always employ the logical inductive methods of the natural sciences and had to take recourse to "tact," which meant something like artistic induction or intuition. Helmholtz immediately went on to complicate his newly formulated distinction, since the humanities also had general laws, such as laws of grammar, while artistic tact was not absent from, for instance, natural history. In the end, Helmholtz slid more toward the judgment that the natural sciences were simply more methodical and cautious.[12]

Indeed, it would have been unwise for him to rationalize and justify reliance on tact as specific to the humanities too readily. Helmholtz had introduced the divide only in order to formulate an agenda for progress, urging the humanities to follow the example of other disciplines. The reason was that knowledge was power, and this dictum applied not just to knowledge of mechanical forces but also to knowledge of political and legal institutions and individual discipline. Increasing both kinds of knowledge was essential for the survival of the nation; science was an "organized army to the benefit of the nation," and the natural sciences and humanities were in this army together. Phrased in more cosmopolitan terms, the humanities and the natural sciences worked together on new victories of thought over matter.[13]

Stating this common goal was the primary aim of Helmholtz's lecture; any distinctions drawn between the humanities and the sciences only served the purpose of demonstrating how both served this goal and how they could serve it better. Helmholtz approvingly quoted Mill in saying that for this the inductive (for which Helmholtz read "natural") sciences had set the example.[14]

For all these thinkers, distinctions between the human sciences and the natural sciences were not a particularly pressing issue; for all of them, however, views about the status of knowledge of the human psyche played an important part in their classification of the disciplines, albeit in different ways. In the next sections, we will see how the rise of scientific psychology in the nineteenth century came to change the shape of the debate.

NOVEL DISTINCTIONS IN A CHANGING CLIMATE

In the course of the nineteenth century a number of factors made the issue of demarcation between the sciences and humanities an urgent one. The nineteenth century witnessed enormous transformations in the organization of learning and research. Educational reforms increased access to education for a wider group of people, the number of recognized academic disciplines vastly expanded, universities became sites of research, and separate research institutes were founded. Sometimes these institutes were funded by companies, such

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[12] *Ibid.*, pp. 131, 138.

[13] *Ibid.*, pp. 139, 141–142 (quotation), 143. Cf. Timothy Lenoir, *Instituting Science: The Cultural Production of Scientific Disciplines* (Redwood City, Calif.: Stanford Univ. Press, 1997), pp. 75–95.

[14] Helmholtz, "Ueber das Verhältniss" (cit. n. 11), p. 138.

as the Berlin Physikalisch-Technische Reichsanstalt, which was partially funded by Siemens.[15] Developments in industry on the one hand, and science and technology on the other, directly reinforced one another. Scientific research and technological innovation supported industrialization, but were at the same time stimulated by it. Therefore, the process of industrialization led to an enormous growth in prestige of the natural sciences.

All these factors represented a challenge to received opinions about the respective identities and roles of the sciences and the humanities. They led scholars to construct sharper divisions between the sciences and the humanities than had previously been conceived. A central claim of this paper is that the divide derived its particular urgency from the rise of what are now called the social sciences, which include sociology, anthropology, economics, and psychology. The social sciences presented themselves as an alternative means to the study of humankind, and this meant a challenge to the established humanistic disciplines. We illustrate this by focusing on one of the traditional humanities—namely, linguistics—and discuss the variety of ways in which the relation between linguistics and psychology was conceived in the second half of the nineteenth century.

Whether to perceive the study of language and the study of the human psyche as humanistic disciplines or natural sciences was a central issue of debate. In the examination of the historical formation of scientific disciplines we should refrain from too strongly imposing our own definitions of these fields.[16] As both were constantly redefining themselves, it makes no sense to identify "real" psychology with experimentation, or restrict psychological linguistics to generative grammar, as others have done.[17] The question we historians have to answer precisely is how these fields were *shaped* over the course of time.

MAIN APPROACHES TO THE STUDY OF LANGUAGE IN THE NINETEENTH CENTURY

At the beginning of the nineteenth century, the main approach in linguistics (often referred to as traditional grammar or classical philology) was strongly normative. The approach involved the specification of rules for good language use; for example with respect to the formation of well-structured sentences. Individual words were thought to have an essential, nonvariable meaning, which could be established through etymological research. It was further assumed that the same norms of rationality were operative in all languages. For the study of reasoning processes, an important role was therefore played by universal or "pure" logic.

During the course of the nineteenth century, this dominant approach came to be challenged by two other distinct methods that were more empirical and hence also far more descriptive in character.[18] The first of these was the historical and comparativist approach. The idea was that all languages could be classified into families and that it was possible to trace

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[15] See, for example, David Cahan, "Werner Siemens and the Origin of the Physikalisch-Technische Reichsanstalt, 1872–1887," *Historical Studies in the Physical Sciences*, 1982, *12*:253–283.

[16] For an articulation of a hybridization perspective on discipline formation see Bart Karstens, "Bopp the Builder: Discipline Formation as Hybridization: The Case of Comparative Linguistics," in *The Making of the Humanities*, Vol. 2: *From Early Modern to Modern Disciplines*, ed. Rens Bod, Jaap Maat, and Thijs Weststeijn (Amsterdam: Amsterdam Univ. Press, 2012), pp. 103–127.

[17] See Els Elffers, "Psychological Linguistics," in *Geschichte der Sprachtheorie 4: Sprachtheorien der Neuzeit I*, ed. P. Schmitter (Tübingen: Gunter Narr Verlag, 1999), pp. 301–341.

[18] Though empirical language study was undertaken before 1800, in the nineteenth century empirical research became more central and increasingly less designed to prove aprioristic assumptions about language. See *ibid*.

historical relations between languages of the same family. After the discovery of resemblances of Sanskrit to both Latin and Greek by William Jones (1746–1794), most attention went to what came to be called the Indo-European language family. The leading concept was that there once had been a perfect primal language, combining the greatest expressivity with simplicity and ease of use. Gradually, decay had set in and divisions into separate languages had occurred. It was thought that the decay of all these languages exhibited regular patterns that could be described by laws.[19]

In this comparativist approach, language change was thus conceived of in mechanical terms. Languages were seen as living organisms going through periods of growth, decay, and then extinction. Such processes were thought to be governed by laws, on which individual speakers could not have any influence. Following a distinction given by Martin Rudwick, we therefore interpret the historical component in comparative linguistics in terms of temporality instead of historicity.[20]

In the middle of the century, dissatisfaction with the existing explanations of linguistic change grew. A number of scholars found traditional grammar, with its stress on essential characteristics of language use, too static. The explanations comparative grammar had to offer, on the other hand, were found to be too mechanical. According to Heymann Steinthal (1823–1899), who was both a linguist and a psychologist and who is often seen as the "father" of psycholinguistics, a real challenge to traditional grammar had to come from a psychological approach to linguistics. In what follows we focus on this psychological approach in more detail.[21]

LINGUISTICS AND PSYCHOLOGY

In order to develop his psychological approach Steinthal followed the idea of Wilhelm von Humboldt (1767–1835) that a language was the expression of the spirit of a people. Steinthal aimed to make this idea more concrete in exploring the concept of a *Völkerpsychologie*.[22] He combined this concept with the psychology of Johann Friedrich Herbart (1776–1841). According to Herbart, the mind was dominated by representations (*Vorstellungen*), ultimately based on sensations, and the combinations between them. Mental changes came about through repeated processes of "apperception," the way new experiences were systematized in

[19] One must mainly consider here the so-called sound laws, such as Grimm's Law. For an excellent overview of the field see Hans Heinrich Hock, *Principles of Historical Linguistics*, 2nd ed. (Berlin: Mouton de Gruyter, 1991).

[20] The development of language as processes governed by laws holds especially true for the more radical linguists, such as August Schleicher and Friedrich Max Müller, who wanted to turn linguistics completely into a natural science. See Anna Morpurgo-Davies, *History of Linguistics*, Vol. 4: *Nineteenth-Century Linguistics* (London: Longman, 1998). Martin J. Rudwick, *Bursting the Limits of Time: The Reconstruction of Geohistory in the Age of Revolution* (Chicago: Univ. Chicago Press, 2005), connects the term "temporality" to mechanical passing of time, essentially involving no change—for example, the revolving of the planets around the sun. Genuine historicity, on the other hand, involves change and contingency. For the present purposes it is interesting that Rudwick argues that historicity found a place in the natural sciences only through importing models from historiography.

[21] "Psycholinguistics" was not an actor's category in the nineteenth century. Jacob Robert Kantor coined the term only in 1936; see the recent volume, W. J. M. Levelt, *A History of Psycholinguistics: The Pre-Chomskyan Era* (Oxford: Oxford Univ. Press, 2013). For a more detailed treatment of (the relevant aspects of) the history of linguistics see Elffers, Psychological Linguistics" (cit. n. 17); Morpurgo-Davies, *Nineteenth-Century Linguistics* (cit. n. 20); Clemens Knobloch, *Geschichte der psychologischen Sprachauffassung in Deutschland von 1850 bis 1920* (Tübingen: De Gruyter Verlag, 1988); and Levelt, *History of Psycholinguistics*.

[22] Together with Moritz Lazarus (1824–1903), Steinthal founded the *Zeitschrift für Völkerpsychologie und Sprachwissenschaft* in 1859.

relation to past experiences that had been captured in representations. Steinthal thought that such processes were accessible through introspection and hence allowed for systematic description.

The psychological approach to linguistics favored by Steinthal changed the views on language variation. Words were no longer thought to have an essential meaning. Instead, their meaning was equated with the representations in the mind and hence was subject to change. Sentences were seen as the linking of representations. This meant that "thought" was mostly interpreted in terms of a process and much less in terms of propositional character. This perspective on thinking led to the acceptance of multiple ways of reasoning, which could no longer be captured by one universal logic.[23]

The most striking feature of early psycholinguistics is the parallelism between language and thought, which was known at the time as psychologism. As Els Elffers puts it: "Grammatical categories were assumed to correspond to mental categories, grammatical systems to systems of thought, word meanings to concepts and sentences to thoughts."[24] Because of this close parallelism, investigations in psychology and linguistics directly reinforced each other.

The assumption of psychologism was widely shared. Wilhelm Wundt (1832–1920), for example, devoted the second part of his series on *Völkerpsychologie* entirely to the study of language. He stood in close contact with the *Junggrammatiker* school, which aimed to combine the comparativist approach with psychological principles of explanation. Like Wundt, the *Junggrammatiker* were situated in Leipzig, and he shared with them a positive attitude toward psychologism. Wundt introduced innovative experimental methods, such as the measurement of reaction times and attention spans, mainly in order to improve the understanding of apperception processes. He thus kept supporting the main ideas of both Herbartian psychology and *Völkerpsychologie*.[25]

Wundt was inclined to interpret psychology as a natural science because of the possibility of abstracting from the first-person perspective through experimentation and because of the assumption of similarity of experiences across individuals, which allowed for generalization and objectification. Yet, he also thought that psychology was fundamental to the *Geisteswissenschaften*:

> As the science of the universal forms of immediate human experience and their combination in accordance with certain laws, [psychology] is the *foundation of the mental sciences*. The subject-matter of these sciences is in all cases the activities proceeding from immediate human experiences, and their effects. Since psychology has for its problem the investigation of the forms and laws of these activities, it is at once the most general mental science, and the foundation for all the others, such as philology, history, political economy, jurisprudence, etc.[26]

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[23] As a matter of fact, Steinthal firmly rejected a place for logic in linguistics. For him the human spirit, not logic, had dominance over language. The irony of this strong rhetoric is that precisely during this same period, logic was being "psychologized" because some were trying to make it more closely reflect actual thought processes.

[24] Elffers, "Psychological Linguistics" (cit. n. 17), p. 304.

[25] Further steps in the direction of experimentally investigating representation were undertaken by Karl Bühler and the Würzburg school. This school rejected *Völkerpsychologie*, and this led to sharp controversy with Wundt. See Arthur L. Blumenthal, *Language and Psychology: Historical Aspects of Psycholinguistics* (New York: Basic Books, 1970).

[26] English translation from D. B. Klein, *A History of Scientific Psychology: Its Origins and Philosophical Backgrounds* (New York: Basic Books, 1970), pp. 831–832.

The resemblance to Dilthey (see below) in this respect is only superficial, as the latter rejected *Völkerpsychologie* and did not allow psychology as an *explanatory* science in the humanities, which Wundt, with his experimental approach, of course did.

Steinthal was less outspoken about the place of psychology in the academic system: "Psychology is not necessarily a philosophical discipline, or at least no more than the natural sciences. It has its own empirical or historical territory and in so far as it deals with establishing facts and carefully representing them it can well ignore all theoretical dissension."[27] Thus Steinthal merely wanted to claim independence for psychology. Yet, in spite of his claim to empirical autonomy, psychology in his day continued to be seen mostly as part of philosophy.

PROBLEMS WITH PSYCHOLOGICAL LINGUISTICS

Psychological linguistics, in the style of Steinthal and Wundt, came to face a number of serious problems. It is important to know what these problems are because both Dilthey and the neo-Kantians reacted explicitly to them. First of all, it proved to be difficult to fit concepts of *Völkerpsychologie* together with the psychology of individual experiences and representations. But both types of psychology also suffered from problems on their own. The relation between the nature of a *Volk* and linguistic expressions could not be made sufficiently clear, which led to unsubstantiated, impressionistic interpretations of linguistic behavior. In turn, to base a strict science of subjective experiences on the method of introspection was increasingly cast in doubt.

Another problem with the early psychological linguistics was that the purely descriptive approach it favored did not allow for judgment about the quality of individual thought. Not surprisingly, this worry was mostly experienced by philosophers such as Frege, Brentano, and Husserl, who aimed to create a scientific philosophy freed from metaphysics but still endowed with normative functions.

But perhaps the most important rock of offense was the parallelisms that psychological linguistics had assumed between word meaning and representation on the one hand, and sentence meaning and thought on the other, which were deemed too strong. While this agenda of psychological linguistics stemmed from rejecting the earlier dominant aprioristic linguistics, toward the end of the nineteenth century it came to be seen as equally aprioristic.

These problems provided the grounds for antipsychologism, which became a strong current in philosophy, psychology, and linguistics alike. The irony is that one could find antipsychologism even within psychological linguistics; because of the important role psychology was thought to have in understanding language and the mind, it had to be saved from a mistaken approach. The most important threats to be wary of were parallelism and subjectivism.

PSYCHOLOGY AND THE DIVIDE: DILTHEY AND WINDELBAND

We can now place the work of philosophers such as Dilthey and Windelband in light of the foregoing discussion. In their formulations of the divide, the relation between psychology and the humanities played a primary role.

Already in 1875, Wilhelm Dilthey commented on Mill's ethology and its reliance on deduction from psychological laws. Dilthey considered these laws way too uncertain; this was

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[27] English translation from Morpurgo-Davies, *Nineteenth-Century Linguistics* (cit. n. 20), p. 223.

in anticipation of his later outcry about explanatory psychology: "Hypothesen, überall nur Hypothesen!" He also thought them misleadingly individualistic.[28] Dilthey found that both mind and body were themselves already abstractions, and therefore the classification of sciences had only a limited relevance anyway—debates about the position of general linguistics, for instance, he dismissed as unproductive. Nonetheless, he famously pronounced that the coherence of mental life, as studied by the humanities, is primitively given, while that of systems of nature-knowledge is the result of the (artificial) connections between hypotheses; it is not a "lived" coherence. This difference in experience informed the difference between explanation and understanding: "We explain nature, but we understand mental life."[29]

Because the lived coherence of the humanities was psychological in nature, its processes of knowing could not be studied without reflecting on this psychological coherence.[30] This meant that psychology had to play a central role in philosophy, because the former could capture inner experiences through accurate descriptions of their content. Of course, this argument depended on a specific view of psychology; Uljana Feest has shown how Dilthey carefully distinguished his own view on the methods of psychology (descriptive and analytical) from other conceptions, such as Wundt's *Völkerpsychologie* and Steinthal's reliance on Herbartian psychology.[31]

Dilthey was determined to formulate a program for a psychology that could serve the kind of understanding that was specific to the humanities, rather than explaining human psychology on the model of the natural sciences. Only in this sense could there be a "psychological foundation of the humanities"; such a foundation was necessary if the humanities were not to remain stuck either in a kind of explanatory psychology that did not match the complexity of its subject matter, or in a complete lack of systematicity. "We hear time and again that in *Lear*, *Hamlet* and *Macbeth* we find more psychology than in all psychological textbooks together. If only these art fanatics would uncover the psychology wrapped inside such works!"[32]

Dilthey's stance on this matter was opposed to that of the neo-Kantians, who aimed to dissociate psychology from the humanities entirely.[33] For Wilhelm Windelband, psychology meant only a threat to the disciplines of the humanities, especially if the humanities were defined by the mental nature of their subject matter. After all, psychology, just like history or law, undeniably dealt with human mental life. Why, then, would it not be a *Geisteswissenschaft*?

Wilhelm Windelband's move to deal with this question in his 1894 rectorial address is

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[28] Wilhelm Dilthey, *Über das Studium der Geschichte der Wissenschaften vom Menschen, der Gesellschaft und dem Staat* (1875), in Dilthey, *Gesammelte Schriften*, Vol. 5 (Stuttgart: B. G. Teubner Verlag, 1964), pp. 31–73, esp. p. 43. "Hypotheses, everywhere only hypotheses!" Quotation in Dilthey, *Ideen über eine beschreibende und zergliedernde Psychologie* (1894), *ibid.*, pp. 139–240, p. 143; and on Dilthey's view of the laws see *Über das Studium*, p. 60.

[29] In this section especially, "sciences" should be read in the broader sense denoted by "*Wissenschaften*." Dilthey, *Einleitung in die Geisteswissenschaften: Versuch einer Grundlegung für das Studium der Gesellschaft und der Geschichte* (1883), in Dilthey, *Gesammelte Schriften*, Vol. 1 (Stuttgart: B. G. Teubner Verlag, 1964), pp. 17–18, 144 (quotation).

[30] Dilthey, *Gesammelte Schriften*, Vol. 1 (cit. n. 29), p. 151.

[31] Uljana Feest, "'Hypotheses, Everywhere Only Hypotheses!': On Some Contexts of Dilthey's Critique of Explanatory Psychology," *Studies in the History and Philosophy of Biological and Biomedical Sciences*, 2007, 38:43–62.

[32] Dilthey, *Beschreibende und zergliedernde Psychologie* (cit. n. 28), p. 139 (first quotation), p. 153 ("Man hört bis zur Ermüdung, daß in Lear, Hamlet und Macbeth mehr Psychologie stecke, als in allen psychologischen Lehrbüchern zusammen. Möchten doch diese Fanatiker der Kunst die in solchen Werken eingewickelte Psychologie uns einmal enthüllen!").

[33] Cf., for example, Rudolf A. Makkreel, "Wilhelm Dilthey and the Neo-Kantians: The Distinction of the Geisteswissenschaften and the Kulturwissenschaften," *Journal of the History of Philosophy*, 1969, 7(4):423–440; and R. Lanier Anderson, "Neokantianism and the Roots of Anti-psychologism," *British Journal for the History of Philosophy*, 2005, 13:287–323.

famous enough. He introduced a division based not on subject matter, but on differences in how disciplines treated their material, and he made a distinction between idiographic and nomothetic sciences, based on the logical distinction between the individual and the general: idiographic sciences had an interest in the unique and concrete, while nomothetic sciences searched for the general. Windelband associated the first with the humanities, the latter with the natural sciences. This distinction, which brushed over all the cases where natural sciences studied individual constellations of phenomena, served the purpose of explaining why psychology, though dealing with mental phenomena, was actually a natural science (it worked with laws); it also brought historical disciplines within the scope of a Kantian theory of the sciences.[34]

Heinrich Rickert would build on this distinction. He feared that if disciplines were classified on the basis of the question whether they dealt with human mental life or not, psychology would become the "principal basis of all cultural scholarship, understood in its elevated sense." He transformed Windelband's distinction by insisting that idiographic disciplines as much as nomothetic had to select and simplify, thereby out-Kanting Windelband; surely, no discipline could ever grasp concrete reality! The question became, therefore, what the principle of the selection was. Rickert concluded that selection was based in some sciences on generalizing and that in others it was related to values. For the value-related sciences, this meant that the generalizing knowledge of scientific psychology could not be brought to bear on their work.[35] They were "cultural" disciplines, a category that comprised "all objects of the study of religion, law, history, philology, political economy, etc., that is, that of all 'humanities' with the exception of psychology."[36]

We see here that the explaining/understanding and nomothetic/idiographic dichotomies did not necessarily lead to the same conclusions when it came to the construction of the sciences/humanities divide. Dilthey and the neo-Kantians came to the issue from different angles, and the fact that they agreed that there was a set of disciplines which were not natural sciences teaches us very little about how these disciplines cohered, how they related to the natural sciences, and even which disciplines were actually part of the humanities.[37]

The divides that Dilthey and the neo-Kantians formulated stand next to Snow's *Two Cultures* lecture as canonical attempts to define the gap between the sciences and the humanities. However, like Snow's (and like Sarton's, for that matter), all these proposals are interventions into specific intellectual and institutional contexts, and they need to be understood in these terms.

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[34] Wilhelm Windelband, *Geschichte und Naturwissenschaft* (Strassburg, 1894). The complexities of Windelband's agenda on this matter (the harmonization of Kantianism and historicism) are discussed by Fred Beiser, "Historicism and Neo-Kantianism," *Studies in the History and Philosophy of Science*, 2008, 39:554–564.

[35] Heinrich Rickert, *Kulturwissenschaft und Naturwissenschaft: Ein Vortrag* (Leipzig, 1899), esp. pp. 61–68, 21–22, 31–38 (quotation, "die vornehmste Basis aller in einem höheren Sinne gefassten Kulturwissenschaft"). In his conceptual distinction between different kinds of "psychology" associated with different sides of the divide, Rickert's approach resembles Dilthey's—though for Rickert, this psychology was not in any sense a scientific discipline. About the relation between the thought of Windelband, Rickert, and Max Weber on this issue see Jeroen Bouterse, "Explaining *Verstehen*: Max Weber's Views on Explanation in the Humanities," in Bod, Maat, and Weststeijn, eds., *Modern Humanities* (cit. n. 1), pp. 569–582.

[36] Rickert, *Kulturwissenschaft und Naturwissenschaft* (cit. n. 35), pp. 21–22 (quotation, "alle Objekte der Religionswissenschaft, der Jurisprudenz, der Geschichte, der Philologie, der Nationalökonomie u.s.w. also aller 'Geisteswissenschaften' mit Ausnahme der Psychologie").

[37] Dilthey explicitly contrasted his own construction of the divide with that of Windelband in his "Beiträge zum Studium der Individualität" (1895/1896), in *Gesammelte Schriften*, Vol. 5 (cit. n. 28), pp. 241–316, esp. pp. 255–257.

CONCLUSION

It will not do, then, to treat these divides as perspectives upon what is basically the same thing—as two ways to point at an already existing chasm. We can see clearly that the approaches we have discussed markedly differed from each other and were connected to contrasting philosophical agendas; they did not point in the same direction. We also see that Windelband and Dilthey both dealt explicitly with the question of the status of psychology, and this question actually became essential to their construction of the sciences/humanities divide. For Dilthey, a descriptive psychology became basic to understanding in the humanities, while the neo-Kantians thought they had demonstrated how psychology could only ever be a natural science, completely dissociated from the humanities. In this, Dilthey and Windelband illustrate the two theses we set out to demonstrate.

Opinions about the divide between the sciences and the humanities were closely related to the rise of the social sciences, and philosophical debates were not separated from these developments but on the contrary were deeply entrenched in them. The variety of reactions to the new human sciences can be explained by the fact that the tasks and methods of these fields were by no means unequivocal. A multitude of interpretations were in competition, as we saw in the case of linguistics. All these fields were in a process of dynamic formation and transformation, and mutual influences frequently occurred. The various attempts to draw strict boundaries between the sciences and the humanities in terms of methods, kinds of experience, particular sets of values, or in terms of idiographic versus nomothetic, can only be properly understood when seen as a part of this complex process.