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RESEARCH ARTICLE

Friedrich Max Müller's Rubicon: Historicism and empiricism in the Victorian sciences of language and mind

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Argument
This paper reevaluates Friedrich Max Müller's interactions with his British detractors from the early 1860s to the early 1890s. By offering a re-examination of their disputes concerning language and mind, it first and foremost illuminates a transformation in the research methods, standards of evidence, and forms of explanation that were seen as scientifically legitimate in the human sciences in late Victorian Britain. To use Müller's language, this entailed a shift in the balance of power between "historical" and "theoretical" schools of thought, which came to privilege the latter over the former. No less importantly, this paper also demonstrates how the history of philology can contribute to the history of science by revealing the extent to which Müller and his opponents were ultimately searching for the same thing – knowledge about human origins and development. Additionally, by taking seriously Müller's arguments as a philologist, this paper refutes the pernicious view that his objections to Darwin's account of languages were motivated by his religious beliefs.

Keywords: Friedrich Max Müller; Charles Darwin; George Romanes; language sciences; mind sciences; Victorian Britain; Victorian science

> When all the facts of real language are against him, Professor Romanes betakes himself to baby-language. Here he is safe, and he knows quite well, why I refuse to argue with him or any other philosopher either in the nursery, or in the menagerie. (Müller 1891, 586)

With these words, Friedrich Max Müller (1823–1900) disengaged from his British critics and offered an assessment of the sciences of language and mind in Victorian England.[1] By articulating his refusal to argue "either in the nursery, or in the menagerie," however, Müller did not simply state that he would no longer attempt to converse with men whose conception of science had become incommensurable with his own. He also foregrounded an important transformation in the research methods, standards of evidence, and forms of explanation that were seen as scientifically legitimate in the human sciences in late Victorian Britain.

[1]In an attempt to head off any confusion, I would like to underscore the terms "*British* critics," and "*Victorian* England." For, despite its historiographical aims, this paper has a very narrow historical focus on Max Müller's engagement with his detractors in the United Kingdom.

In Müller's own terms, this transformation shifted the balance of power between "historical" and "theoretical" schools of thought decidedly into the theoretical camp (Müller [1884] 2002, 250).[2] And this brought Müller to a metaphorical Rubicon that he would not, or could not, cross. As a self-confessed lifelong follower of the historical school, he refused to move into the theoretical camp (Müller [1884] 2002, 258). Moreover, he saw it as his duty to defend the historical school from those who would denigrate – or worse, ignore – its research. This was what led Müller to proffer his well-known critique of Darwin's theory on the evolution of language in the early 1870s and to produce several works on the relationship between language and mind through the end of the 1880s, all of which were criticized by members of the Victorian scientific elite. Men such as George Romanes, Francis Galton, Herbert Spencer, Andrew Lang, E. B. Tylor, St. George Mivart, and the Duke of Argyll did not make common cause with one another – except in their opposition to Müller.

As a work of history, it is upon these exchanges and debates between Müller and his British critics that this article is focused. By revisiting this material, it reveals how and why the conflicts between Müller and these men cut to the core of what got to count as science and what kinds of knowledge came to be seen as authoritative in the human sciences in late Victorian Britain. It also contends that these debates were important because they were not merely academic. Research on language and mind had bearing on broader discussions about intellect, social order, and civil liberties that, by extension, informed not just legal policies but also cultural attitudes towards those seen as being "other" on racial, gendered, class-based, religious, or medical grounds.[3]

But this piece also aims to make a historiographical intervention, for a consensus that Müller was "wrong" and his opponents "right," as well as the persistent presumption that Müller's scholarship was motivated by religious convictions rather than scientific evidence, has prevented Müller's arguments in these debates from being seriously considered within the history of science. This paper thus begins by addressing the existing scholarship on Müller to illuminate the extent to which such scholarship has perpetuated many of the judgments and attacks that were directed against Müller by his most virulent Victorian-era antagonists after 1870. The paper then revisits Müller's objections to Darwin's account of language to demonstrate how taking Müller seriously as a philologist reveals this to be a conflict about expertise and the limits of disciplinary authority rather than one about science versus religion.

The third section of this paper, in turn, takes seriously Müller's own claim that what divided him from his opponents was their failure to understand Kant. Focusing predominantly on Müller's conception of mind and its relationship to language also highlights the historicist commitments that informed his work as a philologist. The final section then examines some of the criticisms leveled against Müller's work by his detractors during the 1880s, before examining Müller's objections to his critics' use of medical patients, children, and so-called "savages" for research professing to shed light on human development in the past. This emphasizes that Müller and his detractors were ultimately searching for the same thing – knowledge about human origins and development – but were doing so in different ways using different methods because of their differing conceptions of science. It also posits that investigating *how* the same kinds of questions came to be investigated differently by practitioners in emerging disciplines can shed new light on *why* the methods one used to construct answers in the human sciences mattered so intensely.

[2]This shift was by no means unique to Britain, but it was especially pronounced there, and moreover, it is upon Britain that this article is focused (Stocking 1987; Kaplan 2012; Barany 2014; Bevin 2017).

[3]There is a large and growing literature on the links between science, culture, and society in the creation of "others." See, for example, Burrow 1966; Stepan 1982; Poovey 1988; Russett 1989; Olender 1992; Rowold 1996; Numbers and Stenhouse 1999; Hall, McClelland, and Rendall 2000; Beasley 2010; Qureshi 2011; Gottschalk 2012; Wise 2012; Smith 2013; Bressey 2015; Porter 2018; Sera-Shriar 2018.

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Clearing the ground and shifting the lens

The basic facts of Max Müller's life are well known.[4] He was a German Sanskritist and comparative philologist who spent his professional life in England, where he became an internationally renowned scholar first, and a prominent public intellectual second. His work contributed to debates in the emergent fields we now call linguistics, anthropology, and psychology, as well as religious studies, literary studies, and South Asian studies.[5] From today's perspective, such a range can make him appear dilettantish. But in the nineteenth century such polymathic disciplinary breadth across the sciences was the norm rather than the exception (Burke 2020; Bossoh 2022; Lightman and Sera-Shrirar 2024). However, because of this, depending on one's disciplinary background, Müller is consequently best known today either for his edition of the *Rg Veda*, which included Sayana's fourteenth-century commentary (1849–1873, 6 volumes), his essay on "Comparative Mythology" (1856), his *Lectures on the Science of Language* ([1861] 1864a), or his role editing *The Sacred Books of the East* (1879–1910, 50 volumes). The perceived merit of his work – or the presumed lack thereof – also varies depending on the disciplinary lens through which it is viewed (Stone 2002, 3–4).

The criticisms and critiques leveled against Müller are, however, remarkably consistent and can be divided into two general types. On one hand, there are critiques that focus on the fact that Müller was "wrong," and, on the other hand, there is the accusation that Müller's scholarship was motivated by his personal religious beliefs, thus rendering it both ideologically suspect and unscientific. When offered by Müller's contemporaries, such criticisms form an important part of the historical record. Yet it is a curious historiographical fact that these criticisms have also remained remarkably consistent across time. Take, for example, the matter of Müller's "correctness." Shortly after his death in 1900, in an otherwise laudatory obituary, one eulogist nevertheless remarked that "there was also rashness in many of his assumptions," while in 1901 the *Dictionary of National Biography* observed, "though much in his works and methods may already be superseded," he would nevertheless have "a strong claim to the gratitude of posterity," because of the impact his work had in Vedic Studies, comparative philology, comparative mythology, and the science of religion (Anonymous 1900; Macdonell 1901, 155). Almost seventy years later, historian of linguistics Hans Aarsleff put the point rather more bluntly when remarking that, "if [Hensleigh Wedgewood] erred, he did at least, unlike Müller, stay this side of absurdity and nonsense" (Aarsleff 1967, 229). Similarly, Linda Dowling not only stated that Müller was "unscientific about language," she also concluded that "Müller's lectures are little more than futile exercises in self-evidence and humbuggery" (Dowling 1982, 160, 175).

Now, ostensibly such criticisms have endured because Max Müller was, in fact, "wrong," while his critics were, in fact, "right." But even with this being the case, as historians of science have cogently demonstrated for almost forty years, adjudicating "rightness" and "wrongness" is among the least interesting – and least significant – tasks that historians of science can undertake. Moreover, such a focus leads to the entrenchment of narratives that are teleological, presentist, and, yes, whiggish. As Paul Forman pointed out in the early 1990s, "whiggery remains unavoidable ... so long as the *scientist* decided what is great science, what is of great significance, and thus what is to be chosen for historical study" (Forman 1991, 78). And as Bernard Lightman reminds us more recently, the "job" of historians of science is neither to celebrate the past achievements of scientists nor to study "those scientific theories that were considered correct by contemporary standards." Rather, it is "to completely historicize" this thing called "scientific knowledge" (Lightman 2016, 2). The real question

[4]For biographical accounts of his life and work (both positive and negative), see especially Davis and Nicholls 2016; van den Bosch 2002; Bharti 1992; Chaudhuri 1974; Voigt 1967.

[5]On religious studies, see, for example, Wheeler-Barclay 2010; Segal 2016; Molendijk 2016. On anthropology, the classic remains Stocking 1987. On linguistics, see Aarsleff 1967; Koerner et al. 1999. On Müller's impact for the humanities more broadly, see especially Turner 2014.

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that needs to be asked is thus not, "was Müller right or wrong?" It is instead, "why did Müller think he was right and why did his critics think he was wrong?" This is the question that the bulk of this article aims to answer, in order to demonstrate that considering Müller's work in its own terms as a contribution to the sciences of language and mind sheds new light on the evolving contours of the human sciences in Victorian Britain.

But first the second type of criticism must be addressed. For it is not only just as persistent – it is also far more insidious. This is the criticism that Max Müller's work was religiously motivated and thus scientifically invalid. In the British context, this critique was articulated most forcefully by Charles Darwin's son George, who responded to Müller's objections to his father's account of the evolution of language in an 1874 publication. "Müller is clearly impelled," George wrote, "by an overmastering fear lest man should lose his proud position in the creation if his animal descent is proved" (G. H. Darwin 1874, 895). This critique – which actually originated with the American Sanskritist William Dwight Whitney (1827–1894) – was repeated by some of Müller's Victorian detractors, such as Herbert Spencer (1896, 848–849).[6] Yet it has proven to be far more popular amongst modern scholars. Müller's most recent biographer, for example, writes that "Müller's statements on the conceptual aspects of language as they relate to the debate on the formation of the human mind remain interesting if one dissociates them from his *theological bias*" (van den Bosch 2002, 509, my emphasis). Similarly, Angus Nicholls describes Müller's *Lectures on the Science of Language* in 1861 as demonstrating an "inherent pathos for religiously inclined audiences" (Nicholls 2015, 214). Other examples abound (e.g. Valone 1996).

But lest any confusion arise, let me be perfectly clear. My point here is not that Müller wasn't religious. By his own admission he was a Christian and not an agnostic (Müller [1894] 1901), although it should also be emphasized that his Christian faith was of such a highly idiosyncratic kind that he belonged to no clear church, and was even identified as a 'Vedantist' in one obituary (McCormack 1900, 743). My point here is, rather, as follows: The persistence of a conviction that Müller's religious views prevented him from accepting the Darwinian claim that human language evolved out of animal language is built on an uncritical acceptance of the conflict thesis, which maintains that science and religion are fundamentally hostile to one another, thus equating any hint of anti-Darwinism with religiocity, and that this betrays a complete failure on the part of contemporary authors to engage with a half-century of literature on the relationship between science and religion. This literature has not only cogently dismantled narratives about the inherent or necessary conflict between science and religion in general, but many of its most powerful case studies focus on the diverse religious beliefs of both pro- and anti-Darwinists in particular.[7]

There were plenty of natural theologians who had no issue accepting Darwin's views on animal descent (Richards 1987, 127–135). Conversely, many of Darwin's own supporters balked – or at least hesitated – at the extension of his theories to humanity (Richards 1987, 185). The presumption that anyone who took issue with the extension of Darwin's theories to man must be anti-scientific and motivated by dogmatic religious beliefs thus breaks down as soon as one begins to examine debates among the Darwinians themselves. Moreover, within the Victorian milieu in which Darwin, Müller, and the Darwinists were operating, objecting to scientific theories and findings with which one took issue was not anti-science; it was the very essence of good science. We consequently have no good reason for refusing to take seriously Müller's objections to Darwin *as a philologist*.[8]

[6]As Whitney was American, not British, a more detailed examination of his criticisms falls beyond the scope of this analysis. The author is, however, in the early stages of a collaboration that will address this topic in greater depth.

[7]Some of the classic texts in this field include Moore 1979; Ruse 1979; Lindberg and Numbers 1986; Richards 1987; Brooke 1991. For some more recent literature, see especially Livingstone 2014; Harrison 2015; Hardin, Numbers, and Binzley 2018; Lightman 2019; Topham 2022.

[8]Put more polemically, my point is that when Müller objected to Darwin's account of language he did so as a philologist – not as a Christian. And when authors insist that Müller's motivations were *actually* religious, in spite of historical evidence to the contrary, they are not simply agreeing with Müller's critics, they are also asserting that they know better what was in Müller's mind than Müller himself, thus indulging in rational reconstruction à la Lakatos (1963–1964, 1970).

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A matter of expertise: Müller's objections to Darwin on language

Darwin was a naturalist. By his own admission, preserved in a letter to Müller, he knew "extremely little" about language, and "that little [was] learnt from very few books" (Müller 1902a, 478). Indeed, Darwin's reliance upon the works of Frederic William Farrar (1831–1903) and Hensleigh Wedgwood (1803–1891) on the topic of language is well known (Knoll 1986; Piattelli 2016). Müller, in contrast, was a philologist. Language was the very thing about which he knew most. Müller thus felt "compelled" to respond to Darwin's views on language after *The Descent of Man* was published in 1871 because, as he explained, "it has often done infinite mischief when men who have acquired a right to speak with authority on one subject, express opinions on other subjects with which they are but slightly acquainted" (Müller 1873a, 527; 1875b, 435). In voicing his objections, Müller was writing as one expert to another.

This was a fact that Müller emphasized repeatedly. It was specifically and explicitly Darwin's account of language to which he was responding; he was happy to leave biology to the biologists (Müller 1873b, 665). Yet it was precisely because he was willing to defer to the expertise of Darwin and his supporters on matters of physiology that he expected them to extend him the same courtesy when it came to language. It was to make his position clear that Müller published his "Lectures on Mr. Darwin's Philosophy of Language" in 1873. As he explained, "my object is simply to point out a strange omission, and to call attention to one kind of evidence – I mean the evidence of language – which has been most unaccountably neglected" (Müller 1873a, 527). He also took pains elsewhere to assure readers that he was not motivated by any desire "to impede the onward march of our brave army" of scientific progress (Müller 1875a, 483). He merely wanted to point out that "the light cavalry of physical science has lately made a quick movement in advance, and detached itself too much from the support of the infantry and heavy artillery" (Müller 1875a, 474). In other words, Müller wanted to draw the attention of Darwin and his supporters to the fact that their naturalistic theory about the origin and development of language "did not at present tally" with the results produced by the science of language, comparative philology (Müller 1875a, 480–1).

More specifically, it did not tally because of Darwin's claim that human language had evolved from animal language. This was what led Müller to repeatedly state: "Language is our Rubicon, and no brute will dare to cross it" (Müller [1861] 1864a, 367; 1873c, 22; 1898, 199). As far as he was concerned – and in this he was not alone – language was a unique and distinct human phenomenon.[9] He thus argued not only that, "whatever animals may do or not do, *no animal has ever spoken*," but also that, "if a pig were ever to say to me, 'I am a pig,' it would *ipso facto* cease to be a pig" (Müller 1873b, 674, 667 [italics original]). Put another way, to be human was to possess language and to possess language was to be human. If an animal were to speak, Müller would no longer consider it an animal.

These remarks should not, however, be read as evidence that Müller believed animals could not communicate or that humans were not animals. Müller happily assented on both counts. His point was simply that humans were *rational* animals. As he explained:

> the discovery that man is an animal was not made yesterday, and no one seemed to be disturbed by that discovery. Man, however, was formerly called a "*rational animal*" and the question is, whether he possesses anything peculiar to himself, or whether he represents only the highest form of perfection to which an animal, under favorable circumstances, may attain. (Müller 1873b, 670 [italics original])

[9]In the eighteenth century, for example, it was generally taken for granted that there was a fundamental distinction between humans and animals, and thus between their minds. For more information about debates concerning the origins of language, especially in this period, see for example Stam 1976; Aarsleff 1982; Wells 1987; Olender 1992; Lifschitz 2012, 2016.

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This was the crucial point that undergirded Müller's conception of the relationship between language and mind as well as the chasm between humans and animals. He distinguished between emotional language, which was communicative, and rational language, which was synonymous with thought. The former was common to both men and animals, whereas the latter was uniquely human (Müller 1873b, 674–675).

As Müller explained in a letter to Darwin "the point at issue between you and me is a very simple one: is that which can pass a certain line in nature the same as that which cannot?" (Müller 1902a, 495). In Müller's estimation there was no single "specific difference" more worthy of being identified as that line than the possession of language, precisely because it attested to the capacity for rational thought (Müller 1873b, 666). But for Darwin there was no line. The imperceptible graduation of physical structures in Darwin's theory of evolution made it impossible to denote any single point at which the brute became physically and thus, by extension, mentally and linguistically human. He, in turn, acknowledged this in a letter to Müller, writing, "he who is fully convinced, as I am, that man is descended from some lower animal, is almost forced to believe *a priori* that articulate language has been developed from inarticulate cries" (Müller 1902a, 451). They were at an impasse.

To the extent that Müller also based his position on the equally a priori proposition that language belonged to humanity alone, both men could certainly be accused of begging the question. Yet in Darwin's response one encounters a point of terminological distinction that was far more than a matter of mere semantics. For while Darwin explicitly mentioned articulate language, Müller's concern was with the fact that language was *rational*. This was a distinction that had significant implications, for it reveals that this impasse need not have been irresolvable.

In Müller's estimation, articulate language need not be rational and rational language need not be articulate. Rather, it was rational thought and rational language that were mutually interdependent (Müller 1873b, 674–675). Müller's objection to Darwin's account of language consequently had as much to do with the sciences of mind as with the sciences of language. Yet while Müller categorically rejected Darwin's account of language, Müller's view on mind was not necessarily anti-Darwinist. As Michela Piattelli and Stephen G. Alter have shown, Wedgwood's account of the origin of language, which was foundational for Darwin's own views, asserted that language originated from humans who were "in all respects like ourselves" (Piattelli 2016, 106; Alter 2008, 44). This meant that, for Wedgewood, those human ancestors who had invented language were physically *and* mentally identical to modern humans, which precluded the possibility that language had evolved in tandem with humanity's mental traits. Yet this was a central feature of Darwin's own account of human evolution.[10] It was thus possible to be a Darwinian while rejecting Darwin's specific views about the coevolution of language and human mentality so long as one was willing to subscribe to Darwin's overarching continuity thesis about the evolution of humans from animals.

In contrast to many of Darwin's supporters, Müller categorically rejected this continuity thesis with regards to language. But his views about the identity between language and mind were ultimately compatible with Darwin's views on the coevolution of mind and language. This was because Müller originally believed that the human mind when language first emerged had been categorically different from the minds of modern peoples.[11] And while Müller's views would evolve over his life, he was nevertheless consistent in his assertion that, because of the connection between thought and language, developments in language reflected developments in thought and vice versa. The study of the evolution of human language was thus simultaneously the study of the evolution of the human mind. They both changed over time and were mutually constitutive of one another.

[10]On this point, see especially Richards 1987 and Alter 2007.

[11]For their respective views on mind and the counterintuitive or paradoxical compatibility of these views, see Müller [1861] 1864a, 403; Darwin [1871] 1903, 57–8.

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Yet this was precisely the view that many of Darwin's supporters, such as William Dwight Whitney, Alfred Russel Wallace, August Schleicher, and Ernst Haeckel, rejected (Richards 2002; Alter 2005). For them, like for Wedgwood, language developed only after humans were already physiologically human. This made it difficult for Darwin to defend his position on the naturalistic origin of language against Müller while also advancing his views on the coevolution of mind and language. As Stephen Alter has demonstrated, this led Darwin to adapt his arguments to fit different polemical needs, such as by downplaying the fact that it was the wise ape and not the early human who first developed language (Alter 2008, 39). This has obfuscated the similarity between Müller's and Darwin's views on the reciprocal relationship between language and mind, in spite of the fundamental incommensurability of their views concerning animal language.

The point to be made here, then, is simple. Müller did not deny that man was an animal. His point was that man was a rational animal, that something had to be the thing that distinguished man the rational animal from other denizens of the animal kingdom, and that this thing was language. This was a philologically and not a theologically motivated position. It was, however, also a philosophically informed one. And to understand this position, as well as why it was unpalatable for Müller's British critics, it is essential to turn to his intellectual inheritance. For although Müller spent his adult life in England, he was raised – and trained as a philologist – in Germany.

Kant and conflicting conceptions of mind

Müller belonged to a generation of German Sanskrit scholars that includes August Schleicher (1821–1868) and Rudolf von Roth (1821–1895). Their philological work built on the earlier scholarship of men such as Franz Bopp (1791–1867), Jacob Grimm (1785–1863), and Eugène Burnouf (1801–1852), as well as that of Friedrich Schlegel (1777–1829) and Rasmus Rask (1787–1832), whose work undergirded the emergence of comparative philology as a distinct field. Much of this work was motivated by a philosophical conception of language, according to which language provided privileged access to the contents of the human mind. One of the other most prominent exponents of this position was Johann Gottfried Herder (1744–1803), who had long since argued that "without language man has no reason, and without reason no language" (Herder [1772] 1979, 36). The same view was also held by the likes of Wilhelm von Humboldt (1767–1835) and Friedrich Schleiermacher (1768–1834) (Forster 2010, 2011; Beiser 2011).

This was the intellectual tradition that informed Müller's views on the relationship between thought and language. And within this tradition, Müller's views were not only entirely conventional, they were also widely accepted. As Müller himself explained to his audience at the Royal Society during his "Lectures on the Science of Thought" in 1887, "Schelling and Hegel, divided as they were on many other points, are quite at one on the identity of reason and language" (Müller 1888, 55). Moreover, the conception that the history of the human mind could be accessed through language and ancient texts because of the nature of this relationship between thought and language was not confined to Germany. When arguing for the establishment of a professorship in Persian at the University of Oxford in 1767, for example, Benjamin Kennecott emphasized not just that the language was of the utmost practical importance for East India Company men who needed to be able to conduct business in India, it would also provide access to its natural character and culture (Turner 2014, 92). In France, this view is especially evident in the work of Burnouf, as well as that of Ernst Renan (1823–1892) (Rabault-Feuerhahn 2016, 150–151).

A second essential component of Müller's intellectual inheritance can be found in the work of Immanuel Kant (1724–1804). For the mind to which Müller believed language gave privileged access was fundamentally Kantian. And it was this Kantianism that made Müller's scholarship difficult for his British interlocutors working in the sciences of language and mind to digest. Müller himself called attention to this point when he wrote that, "in order to come to an understanding on the great problems of life with my philosophical friends in England," they

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needed "the common ground which is supplied by Kant for the proper discussion of every one of them" (Müller [1881] 1915, xxxv). It was in the hope of providing such a common ground, and to convince English readers that Kant was not simply "a benighted a priori philosopher of the dogmatic type," that he published his own translation of Kant's *Critique of Pure Reason* (Müller [1881] 1915, xliv). But while this edition was warmly received in some quarters, it did not help to overcome the "essential epistemological antimony" that existed between British empiricism and anything that had a whiff of idealism (Schrempp 1983, 90).

This is not, of course, to suggest that Kantian philosophy did not have an impact on British thought. As Rosemary Ashton has cogently demonstrated, there was an early period of engagement during which Kant was popularized through the work of Samuel Taylor Coleridge and Thomas Carlyle and a second typified by G. H. Lewes and George Eliott (Ashton 1980; see also Wellek 1931; Class 2012). Kantian thought also played a crucial role in the development of British agnosticism. It helped enable men such as Thomas Henry Huxley (1825–1895), Herbert Spencer (1820–1903), and John Tyndall (1820–1893) to cordon off matters of religion from those of science by adopting a conception of agnosticism that limited knowledge to "the phenomenal realm" (Lightman 1987, 15). Yet with the notable exception of William Whewell (1794–1866), British intellectuals did not engage with the epistemological implications of Kant's work for the sciences, especially in the latter part of the nineteenth century (Seward 1938; Ducheyne 2011; Cooper 2021). Especially for British scholars working in human sciences, Kant continued to be seen as an idealist whose conception of mind was antithetical to that undergirding their own, empirical views, which privileged evidence gathered through direct observation, rigorous experimentation, and associated modes of generating verifiable facts through sense-experience in the present.

At issue here was whether there existed anything a priori in the human mind that did not result from an individual's own experiences. Müller, being a Kantian, held that there was. Those who disagreed with Müller held that there was not, and, moreover, that these two views were mutually exclusive. This comes through especially clearly in Spencer's categorical rejection of Müller's characterization of him as a Kantian, which Müller had based on Spencer's discussion of the prehistoric genesis of congenital dispositions or inherited necessities of thought in *The Principles of Psychology* (1855). Müller's reading of this discussion was that "in admitting that there is something in our mind, which is not the result of our own *a posteriori* experience, Mr. Herbert Spencer is a thorough Kantian" and that "barring his theory of the prehistoric origin of these intuitions, he was quite at one with Kant" (Müller 1873a, 539).

Spencer, however, did not agree. In 1873, as part of a longer essay "Replies to Criticisms," not only did Spencer state, "I must enter a demurrer against that interpretation of my views by which Professor Max Müller makes it appear that they are more allied to those of Kant than to those of Locke" (Spencer [1873] 1891, 235), but he was also extremely adamant that he was in no way a Kantian. As he continued, "so far from being in harmony with, these statements are in direct contradiction to, the view which I hold; and seem to me absolutely irreconcilable with it" (Spencer [1873] 1891, 236). He based this objection on two grounds. First, he argued that:

> The description of me as "quite at one with Kant," "*barring*" the "theory of the prehistoric origins of these intuitions," curiously implies that it is a matter of comparative indifference whether the forms of thought are held to be *naturally generated* by intercourse between the organism and its environing relations, during the evolution of the lowest into the highest times, or whether such forms are held to be *supernaturally given* to the human mind, and are independent of both environing relations and of ancestral minds. (Spencer [1873] 1891, 236)

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Second, he proceeded to emphasize that, concerning our consciousness of space and time:

> The Evolution-view is completely experiential. It differs from the original view of the experientialists (i.e., the Lockean view) by containing a great extension of that view. With the relatively-small effects of individual experiences, it joins the relatively-vast effects of the experiences of antecedent individuals. But the view of Kant is avowedly and absolutely un-experiential. (Spencer [1873] 1891, 237)

In Spencer's reading, then, the Kantian view was that the mental faculties were divinely given, which meant that experience would necessarily have had no role in their formation. Any follower of Kant must thus necessarily share this view of the divine origin of humanity's mental faculties, which meant that their conception of mind was antithetical to that of the evolutionists, who espoused a version of Lockean materialism or sensualism, according to which experiences compounded over generations to develop human intuitions.

We thus see in Spencer's thinking a clear division – and opposition – between Kant and Locke on the nature of the human mind. Yet a significant part of Müller's 1873 lectures, to which Spencer was responding, had in fact been devoted to explaining how and why Kant's philosophy resolved the conflict between idealism and materialism, which in the eighteenth century were exemplified by the philosophies of Berkeley and Hume, but which in his own day were being played out through the continued identification of Kant with idealism. And it was this that motivated Müller to work so vehemently to communicate *his* understanding of Kant – which was notably distinct from late nineteenth-century Neo-Kantianism – to his British interlocutors in the sciences.[12]

As he reiterated in *The Science of Thought*, "It is really painful to read the sweeping condemnation of so-called German metaphysics, and still more to see a man like Kant lectured like a schoolboy, and most frequently not from any difference on philosophical principles, but from sheer ignorance" (Müller 1887a, 121). To make the point more bluntly, Müller's position was that his British interlocutors had failed to recognize Kant's contributions to epistemology, because they continued to insist that the mind of man was a *tabula rasa* upon which impressions were made through the senses, which entailed a return to the sensualist philosophy pioneered by Locke. But this was precisely the position that Kant had rendered untenable by demonstrating that sensuous impressions alone were not sufficient to explain all aspects of human thought (Müller 1873a, 1887a). Müller thus accused the Darwinians of being as ignorant of the work of philosophers as they were of the work of comparative philologists, because they failed to take Kant's refutation of this position into account when offering their own pronouncements on the origins of language and mind (Müller 1873a, 527).

Now, this is not to say that Müller thought that Kant's views were unassailable. He was confident that the findings of the physiological psychologists would shed a great deal of light on the relationship between the senses and human perception, and he looked forward to their findings (Müller 1887a, 66). His point was simply that, "if it [the possibility of a development of all human thought out of mere sensations] is to be mooted again, it should be done with a full appreciation of the labours of those who have come before us" (Müller 1887a, 118). This was especially true because Müller could see few facts in the work of "those he called evolutionist philosophers," which had been unknown to Kant or that Kant did not address in his rebuttal of the arguments made by Locke and Hume (Müller 1887a, 120). Müller's point was that ignoring the work of Kant was not a valid option, and, moreover, he warned against the "philosophic Chauvinism" that writing Kantian philosophy off as "cloudy German metaphysics" engendered (Müller 1887a, 121–122).

[12]For more information about Neo-Kantianism, see especially Beiser 2014. And for more on idealism in Germany, see Beiser 2002.

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Müller's most exhaustive attempts to articulate his views on language and mind for an English audience appeared in the late 1880s with *The Science of Thought* (1887, 2 volumes) and in his popular presentation of these dense volumes, which was published as *Three Introductory Lectures on the Science of Thought* (1888). Yet Müller's conception of the relationship between thought and language was remarkably consistent. As he had stated already in 1861, "Language is the outward sign and realization of that inward faculty, which is called the faculty of abstraction, but which is better known to us by the homely name of reason" (Müller [1861] 1864a, 370). It was also his enduring position that general concepts were expressed by linguistic roots, which were themselves necessary for a concept to be grasped in the first place. In other words, the root (language) and the concept (thought) were mutually constitutive of one another. As he explained in 1873:

> It is like peeling an orange. We can peel an orange, and put the skin on one side and the flesh on the other; and we can peel language, and put the words on one side and the thought or meanings on the other. But we never find in nature an orange without peel, nor peel without orange; nor do we ever find in nature thought without words, or words without thought. (Müller 1873c, 12)

Indeed, as far as Müller was concerned, demonstrating that predicative and demonstrative roots formed the constituent elements of all languages *and* that all roots embodied general concepts were *the* great triumphs of nineteenth-century comparative philology.

As he reiterated in *The Science of Thought*, "this is a fact, not an hypothesis" (Müller 1887a, 267). Thus, while these roots were the "ultimate facts" of the science of language, the connection between these roots and their concepts was the focus of the science of thought, for "the real historical development of the human mind ought to be studied in the history of language" (Müller 1887a, 80). In essence, then, the science of language limited itself to the evolution of human language, while the science of thought was concerned with tracing the evolution of the human mind through language. The point of these 1887 and 1888 publications was thus to demonstrate how one could work through philological facts in order to explain the development of human cognition as it evolved over time.

The emergence of roots, for example, had remained inexplicable from a strictly philological perspective. But the science of thought was able to explain their emergence by revealing how and why "the sounds associated with the repeated social acts of man become roots when expressing the consciousness of these acts" (Müller 1887a, 302). On this point, Müller drew especially on the theory of consciousness articulated by the philosopher Ludwig Noiré (1829–1889), himself an admirer of Kant (D'Alonzo 2017). For it was thanks to Noiré that

> we have learnt how that consciousness of repeated self-willed acts becomes, to all intents and purposes, what we mean by an original concept, and how the phonetic sign inseparable from it is what we mean by a root-word. Even Hume could not maintain that the consciousness of the continuously repeated act of digging was but a singular impression, nor could Berkeley object that the mind had no idea of such continued acts. (Müller 1887a, 313–314)

The importance of this point about repeated acts cannot be overemphasized. For this was what distinguished Noiré's account of consciousness and language from theories of language as emerging from interjections that merely signaled pain or joy in a specific instance.

As Müller emphasized, these roots were "not the signs of things, but the signs of our own consciousness of repeated or continued acts" (Müller 1887a, 296). This was what made it possible to trace the development of human thought through the development of human language. The general concept and the root were co-constituted. As humanity's capacity for rational thought developed, so too did language – and vice versa. Moreover, because of a focus on actions, Müller understood the origin of language as verbal rather than nominal. This distinguished his views

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from those of earlier and contemporary European scholars, while also attesting to the strong impact of the Sanskrit grammatical tradition, which analyzes words in terms of verbal roots, on his work.

The influence of Kant's philosophy is even more evident in Müller's detailed account of the formation of words. Here he explained the development of different parts of speech, as identified by grammarians building off the logical categories of Aristotle, in terms of the categories that Kant had identified as intrinsic to the human mind. In this way, Müller's use of Aristotle was heuristic rather than necessary. As he explained:

> that these categories were gathered from the Greek language, and that Aristotle, if he had been a Jew or a Chinaman, might have collected a different set of categories, may be readily admitted. Still whatever language we have to deal with, we shall always find in it one category to express subjects, others to express the predicates of such subjects, the *quantum* [quantitative adjective], *quale* [qualitative adjective], and *ad aliquid* [relative adjective], these being in space, and the *situm esse*, *habere*, *agere*, and *pati*, all of which involve a being or continuing in time. (Müller 1887b, 425)

The distinction Müller emphasized was that, whereas Aristotle had identified these categories and took them as given, for students of the science of language these categories had to be viewed as "representing the various processes" through which words and thoughts had originally taken on settled forms (Müller 1887a, 427–428). In other words, the categories that an Aristotelian conception of language took for granted and used as the basis for further investigations were the research objects that Müller's science of thought set out to investigate.

Moreover, because these processes were cognitive as much as they were linguistic, they were also explicable in terms of Kant's categories. As he explained, "the only difference, if there is any, between Kant's view of the categories and my own is that Kant takes them as the *sine qua non* of thought in the abstract, while I take them as the *sine qua non* of thought, as embodied in language" (Müller 1887a, 472). Thus, in Müller's account, the first category of substance when applied to roots created nouns, because nouns are words that are "expressive of act, agent, instrument, place, result, etc." This meant that, "it names the objects as the causes of our percepts and concepts, and thus creates our objective world" (Müller 1887a, 437). In this way the category of substance corresponded with the category of causality. Similarly, Kant's forms of intuition corresponded to the fifth and sixth Aristotelian categories, *ubi* (where) and *quando* (when), and they manifested secondarily because they presupposed substantives, pronouns, and adjectives (Müller 1887a, 438). Emphasizing the extent to which the development of words within these categories was Kantian (rather than Aristotelian), Müller went on to assert, "these categories are not only forms of language and thought, they are the antecedent conditions of language and therefore of thought" (Müller 1887a, 471). Such were the broadest outlines of the process that explained how conceptual roots were transformed into complete and coherent languages, which in turn mirrored and attested to the development of rational thought.

In one way, then, Müller's *Science of Thought* can be read as an attempt to fill what he took to be a lacuna in Kant's overarching philosophical system concerning the role of language in thought. He certainly suggested as much when he stated, "It is curious that even Kant should have said so little on this vital question of all philosophy. He calls language the greatest, but not the only instrument of thought" (Müller 1887a, 53). Yet at the same time, in his *Science of Thought* Müller was also making a concrete intervention in Victorian science by advancing an epistemological argument that had implications for all research on language and mind. And these were implications that, because of the mutually constitutive relationship between Victorian culture, politics, and science, had the potential to shape not just prevailing popular attitudes but also official governmental and legal policies towards groups that were othered on racial, gendered, religious, medical, or class-based grounds.

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Historicism and empiricism in the Victorian sciences of language and mind

Between May 1887 and March 1888, a flurry of letters appeared in *Nature* criticizing *The Science of Thought*. Francis Galton (1822–1911), a leading progenitor of British eugenics (and half-cousin of Charles Darwin), initiated this campaign by declaring in no uncertain terms that his own experiences furnished evidence "fatal" to Müller's "extreme views" about the inviolable relationship between thought and language. Since Müller stated that language was identical with thought, Galton argued that "if a single instance can be substantiated of a man thinking without words, all [Müller's] anthropological theory, which includes the more ambitious part of his work, will necessarily collapse" (Galton 1877, 29). He then asserted that because he could, in fact, think without words, Müller had to be wrong about the relationship between language and mind.

Galton's missive prompted additional letters from a wide array of notables, including the physiologist George Romanes, the biologist St. George Mivart, and the polymath cum politician George Campbell, eighth Duke of Argyle, who all also criticized Müller's *Science of Thought* on similarly personal and introspective grounds. Mivart reiterated the view that:

> In such matters our ultimate appeal must be to our own reflective consciousness. Mine plainly tells me that I have every now and then apprehensions which flash into my mind far too rapidly to clothe themselves even in mental words, which latter require to be sought in order to express such apprehension. (Mivart 1888, 364)

Campbell in turn wrote, "My own opinion is strongly in favor of the conclusion urged by Mr. F. Galton. It seems to me quite certain that we can and do constantly think of things without thinking of any sound, or word, as designating them" (Campbell 1877, 52). For these men, their own personal experiences and knowledge of their own consciousnesses provided enough to conclude that Müller could not be right.

Another set of objections were raised by those, such as the evolutionary biologist and physiologist George J. Romanes (1848–1849), who relied on less introspective forms of evidence that were derived from the study of aphasia patients and non-verbal individuals to undermine Müller's position on the mutually constitutive nature of language and thought. These critics, however, had fundamentally misunderstood Müller's position, which they interpreted as being: If someone cannot or does not talk, then they cannot or do not think. George J. Romanes (1848–1849), for example, contended in the pages of *Nature* that, "when a man is suddenly afflicted with aphasia he does not forthwith become as the thoughtless brute; he has lost all trace of words, but his reason may remain unimpaired" (Romanes 1887, 172). Similarly, one pseudonymous author stated, "I cannot help but asking how Prof. Max Müller would account for early processes of thought in a deaf-mute: does he deny them?" (S.F.M.Q. 1887). "The mutes of the seraglio at Constantinople," another letter argued, "cannot be charged with thinking in words. They have their own sign conversation among themselves, and which has no necessary reference to words" (Clarke 1887). These critics, however, were attaching Müller to a view that he had never espoused.

As Müller made clear in *The Science of Thought*, he did not doubt that people with aphasia and non-verbal persons had the capacity for rational language and rational thought.[13] They were human, ergo they must have the capacity for both. He also acknowledged "freely and fully" that "thoughts may exist without words, because other signs may take the place of words" (Müller 1887a, 50). Müller's focus was on the evolution of the human mind and language over time; he was not concerned with individual minds in the present. Indeed, Müller emphasized that he was not an expert on the mental capabilities of such individuals and deferred in print to those actively

[13]A longer discussion of Müller's intervention in discussions of aphasia and developmental disorders can be found in Lorch and Hellal 2016.

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engaged in research on this topic – such as Huxley – and he did so especially concerning the extent to which such individuals could be viewed as rational in practice rather than in principle (Müller 1887a, 61).

That Müller's critics mobilized these counterexamples against him thus ultimately says far more about his critics than about him. For they demonstrate the extent to which these British readers either failed or refused to understand his position on the identity between thought and language as they evolved historically. And it is important to emphasize *or refused*. As one author acknowledged in *Nature*, "if we keep to the terms of this theory, thoughts and words are undoubtedly inseparable. But this does not in the least imply that *all thought* is impossible without words" (Ebbels 1887, 172). In response to this, Müller stated that he found his opponent's position incomprehensible, because "definition is the only panacea for all our philosophical misery, and I am utterly unable to enter into Mr. Ebbels's state of mind when he says: 'this is a mere question of definition, not of actual fact'" (Müller 1887c, 250). Müller could not understand someone who agreed that he was right in his own terms, while also denying that those terms were valid.

This takes us to the very heart of the issue between Müller and his critics on language and mind. For they *were* talking past one another. But they were doing so because they had radically different convictions about standards of evidence, the validity of different kinds of facts, and the epistemological foundations of modern science. Take for example the case of aphasia. Aphasia only worked as evidence against Müller if one accepted the premise that language was produced by something physical in the brain, rather than something intangible and mental. By 1887, while physiologists and psychologists disagreed about whether language was located in a single lobe or was dispersed throughout the brain, they did not doubt that an examination of its physical structures would unravel the mysteries of the human faculty for speech. Müller, in contrast, was adamant that language was not produced by "a fold of the brain or an angle of the skull" and opposed the presupposition that "the brain secretes thought as the liver secretes bile" (Müller 1875a, 480; 1887a, 142–143). He viewed attempts to locate the human capacity for speech somewhere in the physical brain to be as misguided as an attempt "to look for the soul in the midriff" (Müller 1887a, 199). In his view, mind and matter were quite simply not coterminous. Müller and his critics would thus appear to be at loggerheads.

Yet while Müller's position on this point was a clear rejection of late Victorian materialism, which he identified in *The Science of Thought* as being little more than "a grammatical blunder," he also rejected a spiritualist account of mind on the same grounds (Müller 1887b, 565). Both materialism and spiritualism erred because they confused matter and spirit, either by conflating them with one another or by trying to subsume one within the other. Materialism expressed this blunder through the transformation of "it into I," whereas spiritualism did the reverse by changing "I into it" (Müller 1888, 86–87). The only way to avoid this kind of blunder, Müller explained, was by adopting a position that effected a "reconciliation of spiritualism and materialism, or rather of idealism and realism" (Müller 1887a, 129). This meant recognizing that "matter and spirit are correlative, but they are not interchangeable terms" (Müller 1888, 87).[14] This reconciliation was what Müller had found in Kant. It was what he was trying to communicate to his British interlocutors. But while they continued to reject Kant, Müller was, ultimately, joined by many leading evolutionary psychologists and physiologists – including Romanes – in seeking such a resolution. Indeed, Romanes would ultimately become a Monist, a position to which Müller also subscribed (Romanes 1895; Müller 1887a, 72).

Monism, however, came later. It came after Müller had already disengaged from those critics who betook themselves to the nursery and the menagerie as a way of discrediting his work in the sciences of language and mind. What thus becomes clear is that the conflict between Müller and his British interlocutors in the late 1880s stemmed from the fact that their conceptions of scientific knowledge differed radically from one another. Müller held that the evolution of the human mind

[14]A more detailed discussion can be found in Müller 1887b, 564–567.

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could only be studied historically through language, which preserved human thought as it existed in the past. In contrast, Müller's critics in the emerging fields of psychology and anthropology believed that only data gathered empirically through modes of analysis such as direct observation, personal experience, and experiment was scientifically valid. Moreover, this view was premised upon the conviction that the evolution of the human mind and human language in the past could be studied in the present by focusing on so-called savage peoples and children (and people deemed child-like). In other words, Müller's opponents believed that evolutionary time collapsed over both geographical space and individual minds.

Müller recognized this point of disagreement. Already in 1884 he had explained that the difference was that between a theoretical and a historical school of thought (Müller [1884] 2002). But while these two schools – and their antagonism – could be traced back to antiquity, not only was the ascendency of the theoretical school over the historical one, according to Müller, a recent development, and it was to this theoretical school that his critics belonged (Müller [1884] 2002, 250–251). As he explained, a proponent of the theoretical school, "begins by assuring us that all men were originally savages, or, to use a milder term, children. Therefore, if we wish to study the origin of religion, we must study children and savages" (Müller [1884] 2002, 252). Yet this was precisely the epistemological move that Müller rejected as a proponent of the historical school. For while the past can be accessed from the present, it does not exist in the present.

Müller's position on this was, moreover, consistent. He had been arguing for years that it was inappropriate to study children to learn about the origin of language. Already in 1861, he explained that "children, in learning to speak, do not invent language. Language is there ready-made for them" (Müller [1861] 1864a, 360). But whereas Müller's primary target in these original *Lectures on the Science of Language* had been the likes of Condillac, whose speculative account of two children developing language on a desert island had been a cornerstone of eighteenth-century discussions on language, by 1887 he was directing his remonstrations against new research being done on child development and child psychology.[15]

Müller called this work "nursery psychology," and argued that it posed a "still greater danger" to the science of thought than even those speculations that sought to derive insight into the human mind through assumptions about animal cognition. For at least it was clear that statements about what animals thought could only be speculative. In contrast, "the illustrations taken from the nursery are not perhaps quite so fanciful as those collected from menageries, but they have often done more mischief, because they sound so much more plausible" (Müller 1887a, 22). Now, this did not mean that no insights could be gained from studying language acquisition in children, but it was to insist that such insights could only be about how children learned languages in the context of a society already possessed of language. As he explained:

> We want to gain, if possible, an insight into the original faculty of speech; and for that purpose I fear it is as useless to watch the first stammerings of children as it would be to repeat the experiment of the Egyptian king who entrusted two newborn infants to a shepherd, with the injunction to let them suck a goat's milk, and to speak no word in their presence, but to observe what they would first utter. (Müller [1861] 1864a, 359)

In both cases, such observations could say nothing about how language originated or how it developed and changed over time – there was no mental equivalent of ontogeny recapitulating phylogeny.

Müller's foremost opponent in the sciences of mind was George Romanes, who had donned Darwin's mantle in arguing for the evolution of cognition from animals to humans.[16] And for

[15]For more information on Condillac, see, for example, Roos 1999; Coski 2003. On developments in the emerging fields concerned with child development and psychology at this time, see especially Noon 2005; Shuttleworth 2010.

[16]More on Romanes' defense of Darwinism can also be found in Richards (1987) and Schwartz (1995).

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Romanes, as Elizabeth Knoll has cogently demonstrated, that Haeckel's biogenetic law *was* equally valid for the human mind in life as it was for the development of the human body in utero was scientific dogma (Knoll 1986, 13). As he explained in his book *Mental Evolution in Man* (1888), "the development of an individual human mind follows the order of mental evolution in the animal kingdom" (Romanes 1888, 5). Such was his certainty that the book's frontispiece was a table that directly mapped the mental development of an individual not just onto a physiological scale progressing from protoplasmic organisms to man, but also onto an evolutionary tree documenting the development of an individual's emotion, will, and intellect – as well as the intellect's products (Romanes 1888).

Examining this frontispiece reveals that at one week old a baby is mentally equivalent to an echinoderm. In Romanes' estimation, this meant that a one-week-old baby, like an echinoderm, was now able to form memories. At seven weeks the infant is now mentally equivalent to a mollusk and is thus intellectually able to make associations by contiguity. By eight months the child reaches the same intellectual plane as birds, meaning that it can recognize pictures, understand words, and dream. By extension, the development of human language out of animal cries could be observed by studying how children learned to talk, because linguistic development followed the same progression from animal cries to human words as an individual matured. This connection is drawn out especially in Romanes' discussion of the psychology of birds who can be observed, "inventing sounds of their own contrivance to be used as designative of objects and qualities or expressive of desires – sounds which may be either imitative of the things desired, or wholly arbitrary" (Romanes 1888, 135–136). Since children can be observed doing the same thing, Romanes took this as powerful evidence that there was a mental and intellectual equivalence between birds and children at a certain stage of intellectual development (p. 136). "The only difference," he went on to explain, "is that, in a few months after its first commencement in the child, this faculty develops into proportions far surpassing those which it presents in the bird" (p. 133). In other words, mentally and linguistically a bird could advance no farther than a bird, whereas a child's intellectual and linguistic development was momentarily equivalent to that of a bird as they mentally evolved through the psychic stages of life.

Romanes and other psychologists who subscribed to this view thus assumed that stages of mental development through which children passed from infancy to adulthood recapitulated the mental development of humanity. They also held that observations about language acquisition in children constituted empirical facts that were more accurate and truer than the historical facts of comparative philology. And it was this to which Müller objected. As far as he was concerned, the epistemological premises undergirding such studies were illegitimate. As he argued, "the true archives in which alone the historical development of the human mind can be studied are the archives of language" (Müller 1887a, 81). Studying children could tell us much about how people acquired languages that were already extant, but it could tell us nothing about how language had emerged in the first place, and thus such studies could also tell us nothing about the evolution of the human mind.

Psychologists and physiologists were not, however, the only ones who collapsed time over space in the Victorian human sciences. Anthropologists, ethnologists, and sociologists shared this conviction that one could use the study of different peoples at various stages of civilization in the present to make claims about the evolution of human society, religion, and culture in the past. This was, moreover, not a fringe belief. Romanes was not the only one to promise that new insights would appear in a forthcoming publication, "when we come to consider the case of savages, and through them the case of prehistoric man" (Romanes 1888, 439). The anthropologist E. B. Tylor espoused precisely the same sentiment when he wrote in his *magnum opus* that "Savages have been for untold ages, and still are, living in the myth-making stage of the human mind" (Tylor [1871] 1874, 283). In a similar vein, the folklorist Andrew Lang, who began his career as a staunch critic of Müller's work, wrote that:

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> the old mythologists worked at a *hortus siccus* [dry garden], at myths dried and pressed in thoroughly literary books, Greek and Latin. But now we study myths "in the unrestrained utterances of the people," either of savage tribes or of the European Folk, the unprogressive peasant class. The former, and to some extent the latter, still live in the mythopoetic state of mind. (Lang 1897, xix)

Müller was thus characterized as a mythologist of the old kind, who studied myths preserved in texts, which were dead. The new approach, in contrast, studied living myths, as they were espoused and believed by people in the present. Once again, historical and philological facts were shunted aside in favour of those gleaned through empirical research in the present. And this was deemed a valid move because of the conviction that certain kinds of people in the present – savage tribes, the European Folk, and unprogressive peasants – possessed a mental state identical to (or at least commensurable with) that of early humans in the distant past.

The increasingly hard line taken by Herbert Spencer against philological findings generally – and Max Müller's work in particular – provides a cogent example of the increasing authority of empirical data gathered in the present in the late nineteenth century. For although he had ultimately found it useful to incorporate Müller's notion of a "defect of language" in his work on religion and myth, he simultaneously rejected Müller's own views on mythology (Spencer [1870] 1881, 40, 46). Indeed, in his *Principles of Sociology*, Spencer found it necessary to take a much stronger stance against those he called "the mythologists" and to underscore his distance from a mode of research typified by the work of Max Müller (Spencer [1875] 1877, 409). In Appendix B, Spencer's position was explicit:

> Philological proofs are untrustworthy unless supported by psychological proofs. Not to study the phenomena of mind by immediate observation, but so study them mediately through the phenomena of language is necessarily to introduce additional sources of error. (Spencer [1875] 1877)

In other words, only data gathered through immediate observation in the present could be taken as evidence in the human sciences. Philological facts could be trusted and used only if they confirmed what observation had already revealed.

By the time a new edition of *The Principles of Sociology* appeared in 1896, Spencer had hardened his views still further in response to Müller's work on religion (e.g. Müller 1889, 1892). In addition to crafting a new introduction for Appendix B, now revealed to be solely a critique of Müller's work, he added another appendix, "The Linguistic Methods of the Mythologists," which constituted an indictment of all philological research. In both pieces, the core of Spencer's argument was that philology (exemplified by Max Müller's work) was not scientific. Looking more closely at Spencer's objections thus illuminates not just how his epistemological convictions differed from those of Müller, but also why.

The core of the issue was this: As in his earlier publications on language and mind, Müller took the emergence and comprehension of abstract, general concepts as the starting point for all religious belief. In contrast, Spencer categorically refused to accept that the progression of anything, be it language, thought, or religion, could have started from the abstract and then moved to the concrete (Spencer 1896, 849). Spencer thus argued that "an inquiry carried out in a way properly called scientific may, according to the nature of the case, proceed either inductively or deductively … Professor Max Müller does not adopt either of these methods" (Spencer 1896, 830). Moreover, he also claimed that "[Müller's] conclusion was from the outset a foregone conclusion" and accused Müller of "reasoning from inverted scientific methods" (Spencer 1896, 831, 849). Spencer also refused to accept any of the evidence that Müller brought forward to support his science of religion. For not only was this evidence philological, and thus suspect, but it also ran counter to the evidence that "observation of the languages and religions of rude tribes of

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men everywhere force upon us" (Spencer 1896, 849). In other words, according to Spencer, research on so-called "rude tribes" in the present demonstrated that human development advanced from the concrete to the abstract. Ergo Müller was not only wrong, but his work was also wrong unscientific because it disagreed with these facts.

In Spencer's estimation, moreover, if Müller wanted "to give anything like a scientific character to this theory," he would need to do one of two things: "Either, he should cite a number of cases in which among men whose stars is the rudest known, there exists this heaven worship and resulting conception of the infinite, or else he should prove that his theory is a necessary deduction from admitted laws of the human mind. (Spencer 1896, 831). These were not, however, stipulations by which Müller could abide. Just as he was unwilling to follow Romanes into the nursery or the menagerie, he refused to follow Spencer into the field.

Müller's rejection of this conflation of past with present, which undergirded the validity and scientificity of Spencer's anthropological evidence, was, moreover, categorical. It was Müller's explicit contention that, "the idea that the Fuegian was salted and preserved for us during many thousands of years, so that we might study in him the original type of man, is nothing but a poetical sentiment, unsupported alike by fact, analogy, and reason" (Müller 1885, 130). Additionally, while he acknowledged that such a view had given rise to many creative accounts of human development, he argued that they were nevertheless erroneous since they failed to recognize that, "if we in England are old, the Fuegians are not a day younger" (Müller 1885, 117). In other words, it was Müller's position that attempts to use the Fuegians – or any other group of humans in the present – as stand-ins for humanity at earlier stages of its development was what was unscientific.

On top of this, Müller contended that it was inappropriate to label the Fuegians or any other people "savages" in the first place. For, as he pointed out, the term "savage" had no clear scientific meaning at this time in the mid 1880s. What was meant by the term depended entirely on the way in which it was used, and in the context of human origins Müller observed that, "This devil-savage, however, of the present anthropologist is as much a wild creation of scientific fancy as the angel-savage of former philosophers. The true Science of Man has no room for such speculations" (Müller 1885, 111). In other words, not only were anthropologists misguided in assuming that modern peoples could stand in for primitive man, but their very notion of primitive man was also based upon a questionable premise.

Even when "savage" was identified solely as the antonym of "civilized," Müller also rejected its use, because not only was "civilization" as ill-defined a term as "savagery," but whatever metric might be chosen as a boundary between the two crumbled upon examination. As he explained, were letters and writing identified as the hallmark of a civilized society, then the Fuegians would most certainly be savages, but so too would Homer (Müller 1885, 115). Conversely, were the breadth and scope of a culture's language seen as a mark of civilization for containing that culture's "treasure of conceptual thought," then the Fuegians must be seen as more civilized than a rural Englishman (Müller 1885, 120). Additionally, while Müller pointed to these examples primarily to expose the irresponsible way that anthropologists attempted to access the past through the present, Müller's position also offered implicit criticism of the presumed hierarchy of races that formed a central part of Victorian conceptions of progress. For in his view there was simply no one-to-one correlation between the stadial development of human society across time and the distribution of peoples at various stages of so-called "civilization" in space.

In Müller's estimation, the past could only be accessed historically, and no evidence derived from the study of humans (or animals) in the present could reveal anything about humanity in the past. Yet as he observed, "to say that man began as a savage, and that the most savage and degraded races now existing present us with the primeval type of man, seems to be the shibboleth of a certain school of thought" (Müller 1885, 109). This was the same school of thought that reasoned by analogy to draw direct correlations between the mental development of individuals in the present and the diachronic evolution of the human mind. Men such as

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Galton, Romanes, and Spencer were searching for answers to questions about origins and development of humanity, just like Müller. But they privileged different kinds of evidence because of their differing epistemological commitments.

Müller's critics thus accused him of being unscientific, even anti-scientific, because he refused to abandon his epistemological convictions about inviolability of thought and language and the necessity of their being some dividing line between human and animal minds. Müller, in turn, argued that – as proponents of the theoretical school of thought – the analyses of his critics were always premised upon "an ideal conception of what man must have been in the beginning" (Müller [1884] 2002, 255). His research, in contrast, following the tradition of the historical school, "begins with no theoretical expectations, with no logical necessities, but takes its spade and shovel to see what there is left of old things, it describes them, arranges them, classifies them, and thus hopes in the end to understand and explain them" (Müller [1884] 2002, 256). In other words, Müller argued that his critics began by envisioning how things must have, or should have, been in the past, and of building their sciences upon a foundation of such a priori facts, whereas his research was concerned only with "learning to understand what has been" (Müller [1884] 2002, 250). Müller, however, was willing to acknowledge that those working in either tradition could do good work (Müller [1884] 2002, 256). His critics, both past and present, have denied him the same courtesy.

Conclusion

The ascendency of this theoretical school – and the eclipse of Müller's historical one – was a late Victorian phenomenon. When Müller first arrived in England in the 1840s, he was welcomed into the fold of British scholarship by the likes of James Cowles Prichard, who defended Müller "very generously," and even by Anglican theologians such as F. D. Maurice, who described Müller's plan to translate the Rg Veda with excitement (Chaudhuri 1974, 62; Maurice 1847, xiii). In mid nineteenth-century Britain, the conviction that philological research would shed new light on the past and development of humanity was mainstream in the emerging sciences of language and mind. In the 1860s, E. B. Tylor engaged deeply with Müller's scholarship on language and was appreciative of philological inquiries, even as he remained skeptical of many of the specific findings that such research produced (Tylor 1866a, 1866b). Even in 1870, F. W. Farrar dedicated his publication *Families of Speech* to Müller, "who has done more than any living scholar to render the study of comparative philology at once popular and profound" (Farrar 1870, vii).

By the 1880s, however, it was clear that Müller and many of his British interlocutors working in the sciences of language and mind were operating on fundamentally different epistemological premises and held radically different conceptions about what constituted scientific evidence. This conviction was stated succinctly by Andrew Lang in the 1890s: "Now I, and other people in the same camp, differ *toto caelo* from nearly all Mr. Max Müller's mythological principles. If I am right, he is wrong, in fundamental principles; if he is right, the truth is not in me" (Lang 1895, 6). And although Lang would ultimately come to appreciate Müller the man, he was never reconciled with Müller's philological approach to mythology (Lang 1900, 785). For Müller had "never quite recognized how critical as to 'sources' other writers had become," while also remaining mistrustful of anthropological evidence (Lang 1900, 789, 790). And even though Lang conceded that on certain matters he and Müller had come to "reach the same conclusion by diverse paths," that their standards of evidence and modes of explanation differed still put a chasm – a metaphorical Rubicon – between them (Lang 1900, 792).

Similarly, C. Lloyd Morgan, whose work on animal psychology Gregory Radick has cogently demonstrated was informed by Müller's arguments about the unknowability of animal minds, prioritized direct observation and experiment over and above the historicist mode of analysis as deployed by Müller (Radick 2007, 73–83). It thus took someone working empirically, rather than historically, to convincingly make the case against anthropomorphism in the study of animals, the

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basic principle of which was enshrined in Morgan's Canon, which was, in Morgan's own words, "a thesis based entirely on observation and induction" (Morgan 1892, 417). As Müller's impact on Morgan was little known before Radick's work, it may be tempting to view this as a vindication of Müller's position concerning animal versus human language. Yet this would amount to a justification for Müller's inclusion in the history of psychology on the grounds that Müller was ultimately proven "right." And as I argued at the outset, questions of rightness and wrongness are irrelevant here. Besides, "no thought without language and no language without thought" is a very different proposition from Morgan's Canon.

My contention is, rather, that we have much to gain if, instead of asking how Müller's contribution contributed to the advancement of science, we focus on understanding what Müller's work can tell us about the production of knowledge in the human sciences in Victorian Britain. The eclipse of Müller's work in fields such as psychology, anthropology, and linguistics is part of a larger history concerning how empirical evidence, generated or obtained in the present, came to carry increasing scientific authority in the human sciences.[17] By shifting the lens to see the eclipse of Müller and the eclipse of the historical school as two sides of the same coin, we can thus shed new light on how and why Müller's historicist and Kantian epistemology played a crucial role in motivating Victorian scientists to articulate a strong version of their conception of science, which prioritized the empirical and discredited the philological. Müller's position as an internationally renowned philologists and his status as a prominent intellectual meant that his work could not be ignored, and this forced Müller's critics to put aside their own differences in order face off against the threat that Müller's work posed to the sanctity of their conception of science. Romanes and Mivart, for example, carried out a vicious dispute over mental evolution and instinct (Richards 1987, 353–361). Yet they both agreed that Müller was wrong about the mutually constitutive relationship between language and mind. And as long as his views were in conflict with theirs, they could make common cause against a shared adversary.

Over the course of his life, Müller had frequently refined his analysis and honed his arguments by taking account of new research findings and considering the criticisms that were leveled against his work. Yet by 1891 he had come to see that a chasm separated him from his detractors, who, like Romanes, took refuge in the "menagerie" or the "nursery" (Müller 1891, 586). But what Müller failed to recognize was that, in a way, he was the one who had driven his critics into these spaces. For an approach to science that collapsed time over space or compressed evolutionary time into the lifetime of an individual provided a refuge from the epistemological difficulties posed by his sciences of language and thought. And once this distinction was established, Müller was not the only one who would find it difficult to cross. For the distinction between these theoretical/empirical and the historical/philological approaches to the production of knowledge would be mobilised in attempts to distinguish legitimate from illegitimate science, science from not-science, not just on epistemological and methodological grounds, but also disciplinary ones. Max Müller's Rubicon was ultimately not the division between animals and humans on the matter of language *or* mind. It was his commitment to historicism.

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[17]This is a history that has been studied more extensively concerning those fields we now call sociology, political science, and economics, especially to the extent that statistical and mathematical approaches bolstered the importance of quantitative data generated in the present (Porter 1986, 1995; Hacking 1990).

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