Introduction: language under a microscope

> Under the microscope of the etymologist every word almost discloses traces of its first metaphorical conception
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> Friedrich Max Müller[1]

> Astonished at the performances of the English plough, the Hindoos paint it, set it up, and worship it; thus turning a tool into an idol: linguists do the same with language
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> Herbert Spencer[2]

> Language is a vast conglomerate of human fossils. It consists for the most part of fossil forms, fossil beliefs, fossil conceptions, fossil ideas ... [W]e can only express the highest conceptions of modern science in terms invented for us by barbaric predecessors – believers in fetishes, in shamans, in spirits, and in puerile talismans of the most silly description
>
> Grant Allen[3]

What might it mean to place language under a microscope? The popular Victorian philologist Friedrich Max Müller had a clear idea when he addressed a public audience at London's Royal Institution in 1863. Languages, he explained,

> supply materials capable of scientific treatment. We can collect them, we can classify them, we can reduce them to their constituent elements, and deduce from them some of the laws that determine their origin, govern their growth, necessitate their decay; we can treat them, in fact, in exactly the same spirit in which the geologist treats his stones and petrifactions ... or the botanist the flowers of the field. (*Lectures on the Science of Language*, II, p. 1)

The microscope image was not new. The eighteenth-century scholar John Horne Tooke had compared etymology to 'a microscope ... useful to discover the minuter parts of language which would otherwise escape our sight'.[4] However, by Müller's time, the microscope had acquired new

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associations. It no longer magnified a static world but revealed constant processes of change, from rock formations to developing embryos. Whereas Horne Tooke had viewed speech as an artificial tool, controlled by humans, Müller imagined it as a force of nature, transforming independently over millennia. Through such rhetoric, Müller reified language as an object apart from its users.[5] He presented his work, tracing word forms through history, as a material 'science' that reflected objective truths about humanity. Müller's 'science of language' promised to raise humans to a higher, almost God's eye view of themselves, as he mused

> Man had studied every part of nature . . . every nerve and fibre of his own body . . . [H]e had meditated on the nature of his soul, on the laws of his mind . . . and yet language, without the aid of which not even the first step in this glorious career could have been made, remained unnoticed. Like a veil that hung too close over the eye of the human mind, it was hardly perceived. (1, p. 27)

Müller's microscope promised to take his audience beyond language, to observe it from a higher mental altitude where it would cease to shape them. Studying language as a natural evolution through deep time raised the possibility, in his optimistic view, of transcending sociohistorical perspectives. Language was not simply an object under the microscope, however, but also the tool that observed it. Philologists could not objectify language without also using it, constructing stories of its development.

This study argues that Victorian and Edwardian scientific visions of the evolution of language emerged symbiotically with popular fiction about the subject. Models of linguistic development ranged beyond empirical testability, delving into unrecorded pasts and unknown futures. Imaginative and speculative fiction, particularly, acted as a testing ground for such theories, conjuring visions of primordial and future speech. Fiction genres also helped to form some of these theories, supplying narrative frameworks to represent linguistic change. Utopian, imperial and historical romances, for example, solidified and elaborated concepts of linguistic advancement, primitiveness and decay. Yet, while fiction popularized and brought to life theories of language evolution, the form also destabilized them, exposing the contradictions in placing language under a microscope. Through its rootedness in social particulars, fiction highlighted the contextuality of meaning and the impossibility of detaching language from its users. Further, as researchers increasingly conceived of language as a collection of evolved capacities, some fiction in the realist tradition explored the inseparability of language from the instinctive body. Through these foci,

the study offers new readings of seminal and less well-known Victorian and Edwardian texts.

The idea that language was a natural object, evolving through deep time independently of its speakers, derived from the new field of comparative philology. The discovery of ancestral links between Latin, Greek and Sanskrit in the late eighteenth century had encouraged continental scholars such as Franz Bopp and Jacob Grimm to trace the diversification of languages through history. As in geology and embryology, they formulated 'laws' and stages of growth, as though speech was a form of organic life.[6] Following these developments, Victorian language studies constituted an uncertain, amorphous form of knowledge, hovering between physical and historical science (what we now call the humanities). They overlapped with physiology and psychology, anthropology and sociology, concerning the physical production of speech and the somatic processes behind it, both for individuals and communities. Müller's microscope promised to discover the atoms of the human mind, embedded in the metaphorical 'roots' of words. Somewhat differently, towards the end of the century material investigations of the speech organs and brain placed the production of language under a microscope as never before. By analyzing the mechanisms and acquirement of speech, researchers sought the origins and development of consciousness. In 1893 the American phonetician E. P. Evans compared the role of the phonograph in philology to that of the microscope in bacteriology.[7] The instinctive, infinitesimal parts of vocalization seemed to carry traces of the past, requiring only microscopic analysis to reveal their secrets.

This study builds on the work of Linda Dowling and Christine Ferguson, who have both explored language studies as sources of anxiety in Victorian literature. For Dowling, philology eroded old certainties about the meanings of words and humans' control over them; for Ferguson, evolutionary theories raised the mortifying possibility of speech originating in animal vocalizations.[8] I look beyond these concerns to consider how visions of language evolution developed in dialogue with emerging models of scientific objectivity. Lorraine Daston notes that, for late-Victorian scientists, language was 'at once the essence and the nemesis of scientific objectivity: on the one hand language is what makes public knowledge possible; on the other, it was the distorting lens wedged between mind and nature'.[9] Could language ever be rendered 'scientific', and was this even desirable? While some hailed the imagined objectification of language as progressive, others lamented it as a deadening mechanization of the national spirit. Efforts in philology to control language by objectifying

and dissecting it paralleled attempts in other disciplines to control the physical universe through a fixed nomenclature. Philologists often imagined their scholarly discourse as existing 'outside' of the language they described, although they constructed it from the same verbal resources.[10] Such logic mirrored the ideal of literary realism, in George Levine's words, 'to use language to get beyond language, to discover some nonverbal truth out there'.[11] This work, then, is concerned with imaginary evolutions of language in both philology and fiction. By depicting past, future and alternative language, scholars and authors sought to elevate their discourse above the autonomous processes of language change. If fixed laws could be found to predict such change, then humans might retain some control over and mental independence from the language they spoke.

The search for objective language was bound up with the rise of Standard English. The ideal of a deregionalized, unchanging English privileged the discourse of philologists as above the evolution they described. Equally, the Victorian novel might depict many varieties of speech, but it typically subordinated them under Standard English narration.[12] Yet theories and fictions of language evolution also compromised the goal of objectifying language, suggesting that humans had no extra-linguistic base from which to view it. If language evolved irrespective of human intentions, then logic might be imagined as being no longer universal but only as the perspective of one's speech community.[13] Further, conceiving language as an aggregate of instinctive and learned behaviours collapsed the boundary between object and observer, absorbing speakers into autonomous organic and sociological processes. Near the end of the century the novelist and science popularizer Grant Allen summed up the philological consensus that, 'The growth or spread of a language is a thing as much beyond our deliberate human control as the rise or fall of the barometer'.[14] Conversely, authors and scholars who bemoaned Standard English for mechanizing the organic national spirit also, paradoxically, needed it to fabricate an imaginary historic unity between speakers. One of this study's aims, then, is to complicate debates about the history of Standard English. Language standardization was central not only to reifying a nation of speakers, as Tony Crowley argued, but also to privileging scientific truth.[15] Recent scholars have increasingly traced the history of scientific writing as a genre of self-effacement, presenting its 'facts' as above the contingencies of language.[16] This study intervenes in the debate from a literary perspective, arguing that fiction both helped to build the imaginary edifice of objective, scientific language and exposed the cracks in its foundations.

While Ferguson's study focuses on a handful of authors and novels, I take a wider view of fiction in the period, exploring the relationships between philological theory and literary genre. Thought experiments were intrinsic to studies of language evolution, which extrapolated ancestral links between tongues through lexical resemblances. Similarly to how Darwin imagined extinct species beyond the fossil record, philologists imagined extinct languages beyond written records.[17] In 1868 the German scholar August Schleicher published an attempted reconstruction of the Proto-Indo-European language. 'Avis Akvāsas Ka' ('The Sheep and the Horses') was a short fable in hypothetical speech produced through philological comparisons.[18] This reflected a shift in science away from catastrophist explanations of natural phenomena (through causes no longer in operation, such as divine creation) towards uniformitarian ones (through constant, observable processes). Recorded changes in language over time might, then, be used to hypothesize older forms of language, in similar fashion to how the geologist Charles Lyell had hypothesized ancient rock formations. Theories of language evolution thus opened new imaginative frontiers and merged with forms of fictional speculation to envisage past and future speech.

Much fiction of the period existed in dialogue with speculative philology, experimenting with linguistic possibilities that the field made newly imaginable. Fiction could be conceived as a form of 'experiment', as Émile Zola claimed, describing his tales as scientific predictions of the behaviour of humans placed in imaginary scenarios.[19] The fantastical romances which concern much of this study might seem generically opposed to such realist techniques. However, they arguably deploy Zola's experimental method on a larger scale, imagining language evolution via the theoretical models of linguistic science. The exotic, unfamiliar settings of romances, from William Morris's *News from Nowhere* (1890) to H. G. Wells's *The First Men in the Moon* (1901), offered imaginative spaces for thought experiments in linguistic possibility. These experiments involved reviving and fabricating archaic speech, reconstructing the evolutionary past of language, and predicting future development. Fiction more 'realist' in its setting also experimented with evolutionary language theory by exploring the instinctive bases of speech. Novelists such as Thomas Hardy and Wells in his social comedies destabilized conventions of reported speech, depicting instinctive communication in parallel to words. Nonetheless, they still wrote Standard English, often third-person, narrations, even as their ideas about language undermined the notion of an objective, scientific idiom. Their attachment to narrative objectivity contrasted with some

'New Woman' authors of the time such as George Egerton, who experimented with impressionist narration.[20] This difference might be understood within wider gendered discourses of science, which typically opposed masculine intellectual abstraction to embodied female instinct. Yet this binary was countered by alternative models of verbal masculinity as bodily and instinctive, against imitative, conventional femininity.[21] Such ambivalence engaged with debates about the nature of the linguistic past and whether this past was something to reconnect with or escape from.

The cultural traffic between philology and fiction was two-way, with certain fiction genres supplying narrative frameworks for theories of language change. I will trace these evolutionary narratives as rival discourses that pervaded anglophone culture and shaped ideas about language and scientific objectivity. Utopian and imperial romance, for example, helped to frame a discourse which I will call 'language progressivism'. By contrast, historical romance combined with other philological theory to produce a tendency which I call 'language vitalism'. The epigraph quotations from Müller and Spencer exemplify these opposing discourses. Meaning was conceived by language vitalism as an organic essence derived from a primordial epoch of creation. Progressivism saw meaning as an artificial production, something forged by humans as they gained control over chaotic nature. For different reasons, progressivism and vitalism both valued the linguistic past and sought vestiges of it in the supposedly ancient oral cultures of Britain and abroad. Such studies were early examples of what James Clifford calls 'salvage ethnography', which presented its transcription of oral cultures as a chapter in their inevitable extinction.[22] For vitalism, this imagined linguistic past represented a source of spiritual and semantic renewal. For progressivism, it offered a point of orientation as language advanced in the opposite direction. While progressives hailed the imagined objectification of language, vitalists presented it as a kind of semantic decay, rendering speech and thought mechanical.[23] Both envisioned different forms of Jürgen Habermas's 'ideal speech situation' in which discourse could be elevated above ambiguity, misunderstanding and vested interests.[24] Both postulated a perfect correspondence with 'truth' in their idealized languages of the past and future, but struggled to explain how either could be realized outside of cultural perspectives. In either case, the vision of humanity united under a *lingua franca* clashed with the aim to particularize speech, reflecting the soul of a given people, community or individual. Yet, their urge to direct contemporary language towards their respective ideals was derailed by the autonomous processes of change revealed by philology. Whether one located the

ideal speech in preindustrial, pseudo-Edenic nature or the evolution of social structures, both views undermined individual control over discourse. Both also often treated language as a passive reflection of thought rather than an active agent which shaped thought. Towards the turn of the century new ideas of language and thought as unstable catalysts of each other undermined both progressive and vitalist narratives.

These two discourses were amorphous and overlapping, with philo-logical and imaginative writers often combining elements from both to suit different agendas. Patriots such as R. C. Trench and Charles Kingsley tried to present modern Standard English as the fulfilment of an organic destiny traceable through history. Likewise, Spencer and several utopians portrayed the progressive mechanization of language as part of a monistic evolution that collapsed oppositions between nature and society. Further, Victorian progress could be imagined as a spiral as well as a straight line, involving the recovery of past strands of development.[25] This muddling of apparently contradictory models of language only increased in the latter decades of the century as the mirage of unitary scientific knowledge dispersed. 'Up to about 1850', William James wrote in 1904, 'almost everyone believed that sciences expressed truths that were exact copies of a definite code of non-human realities'. Now, 'There are so many geom-etries, so many logics, so many physical and chemical hypotheses, so many classifications, each one of them good for so much and yet not good for everything'.[26] As the physical world fragmented into a plurality of explan-ations, so language followed suit with the specialization of technical vocabularies and no *lingua franca* to unite them. Linguists also increasingly treated meaning as contextual rather than historical.[27] Instead of searching for one, totalizing explanation of language, some writers began to imagine it as a plurality of systems working in concert. In this way, the fictions of Samuel Butler, Hardy and Wells explore language as a site of dialogue between natural instincts and social convention rather than purely one or the other. The once apparently united science of language was dissolving into multiple objects under many different lenses.

Ideas about language evolution pervaded Victorian and Edwardian literary culture, and this study is necessarily partial in its selection of material. While its arguments might be extended to poetry, I have limited my discussion to fiction.[28] This focus clarifies the emphasis on narrative, tracing competing stories of linguistic change. Continuous prose enabled writers to flesh out these stories in living detail. It also allowed them to mimic the imagined objectivity of science. The novel had emerged in parallel with empiricism, bound up with epistemologies of observation and

testimony.[29] The methodical description of prose fiction enabled authors to depict imaginary evolutions of language like anthropologists relating their observations. It enabled them to quote and cite philologists, or play the philologist themselves, listing imaginary grammars and vocabularies. Among authors, Kingsley, Grant Allen, Hardy, Butler, Wells and Jack London command attention due to their interests in philology and biology. Equally, William Morris, R. M. Ballantyne, J. F. Hodgetts and Paul du Chaillu warrant discussion for their interest in an imagined organic linguistic past. Certain genres stand out as literary parallels to the language theory, not only reflecting the latter but also helping to shape it. While language progressivism often appears symbiotic with utopia, language vitalism developed in tandem with historical romance and its later off-shoots, such as invasion and fantasy fiction. Similarly, anthropological descriptions of 'primitive' language paralleled imperial and prehistoric romance, which described 'primitive' speech from a supposedly higher altitude. This study is also concerned with realism, as far as the genre can be defined, since efforts to represent reality in fiction depended on language acting as a neutral tool, reflecting extra-linguistic facts.[30] Hardy's, Butler's and Wells's visions of language as an extension of animal instincts had the potential to destabilize this epistemology. Similarly, as such visions undermined the objectivity of the scientific observer, so they also threatened the objectivity of the realist narrator.

Language progress

Language progressivism grew in tandem with ideals of scientific objectivity, so it is with this discourse that the study begins. The first two chapters plot progressivism's emergence through visions of the linguistic future and past. I deal first with the future since these visions represented the ideal conditions to which language studies aspired. Scholars and scientists reasoned that language developed through speakers becoming increasingly mentally independent of it. Comparative philologists organized grammatical change into epochs paralleling the evolution of consciousness. Wilhelm von Humboldt wrote in 1836 that language reflected 'the growth of man's mental powers into ever new and often more elevated forms'.[31] Most anglophone readers first encountered the new philology through anthropologists and sociologists importing its data into wider discussions of social progress.[32] Similarly to such theories of social evolution, language progress became associated with the growth of sympathy and altruism as well as intellect. Utopian fiction both

popularized these ideals and helped to shape them by figuring the perfect future society as one without verbal waste, misunderstanding or disagreement. Language progressivism came to revolve around three goals: the mechanization of meaning, detachment from the sensory body, and the merging of speakers into a united 'mind'. If there was one figure whose life's work crystallized these goals (and their contradictions), it was the philosopher Herbert Spencer.

Spencer rose from somewhat obscure origins to become one of the most famous and regularly cited philosophers in the anglophone world.[33] Partly self-educated, he came from a family of religious non-conformists in Derby and worked first as a civil engineer while writing for provincial journals. Steeped from his early years in the radical evolutionary theories of Erasmus Darwin and Jean-Baptiste Lamarck, Spencer formulated a theory of universal development in biology, psychology and society in the 1850s and spent the rest of his career elaborating it. All development, he claimed, consisted of the twin processes of integration and differentiation. The structures of organisms and societies evolved increasingly specialized parts while laying evermore intricate connections between these parts. Spencer's parallel interests in evolution and engineering influenced him to conceive of language as a progressive mechanization, marked by efficiency and precision. The seeds of this idea are visible in notes which he made in his early twenties on ideas for an artificial language. In his *Autobiography* (1904) he recalled, 'The primary aim was that of obtaining the greatest brevity, and, consequently, a structure mainly, or almost wholly, monosyllabic was proposed'.[34] He later described language as 'a tool', valued according to the efficiency with which it conveyed ideas, since 'whatever force is absorbed by the machine is deducted from the result'.[35] Like the railways that Spencer had helped to design, he conceptualized language as a technology undergoing continuous improvement.

Spencer was not a lone voice on the subject of language reform. The Victorian period witnessed frequent proposals for reforms of written English and even the creation of new artificial languages, such as Volapük and Esperanto. Nor were such proposals new. René Descartes, Gottfried Wilhelm Leibniz and John Wilkins had all discussed designing a 'philosophical language' to arrange phenomena into consistent, logical taxonomies.[36] Such ideas influenced the later construction of systematic nomenclatures in botany and chemistry.[37] Efforts to fix scientific notations continued to merge with utopian schemes for perfecting language in the nineteenth century. The polymath William Whewell looked forward to a notation that would unite the sciences, overcoming their different

conceptual foundations. He dreamed of an algebraic system mapping on to the world, as though the latter were a divine tongue, awaiting translation. With such a language, humans might become something like gods themselves, as Whewell wrote:

> To trace order and law in that which has been observed, may be considered as interpreting what nature has written down for us, and will commonly prove that we understand her alphabet. But to predict what has not been observed, is to attempt ourselves to use the legislative phrases of nature; and when she responds plainly and precisely to that which we thus utter, we cannot but suppose that we have in a great measure made ourselves masters of the meaning and structure of her language.[38]

Ultimate knowledge of the universe seemed a matter of finding the right symbols to reveal it. As Chapter 1 will show, utopian fiction frequently described the mechanization of language through spiritual images. Tales such as John Macnie's *The Diothas* (1883) linked language reform with discovery of the divine meaning of the universe.

Such notions relied on the assumption, inherited from John Locke, that language was a tool that was consciously crafted to express thought.[39] Yet, by the mid nineteenth century comparative philology had revealed a history of language change separate from human intentions. As the American philologist G. P. Marsh reflected in 1860, 'So truly as language is what man has made it, just so truly man is what language has made him'.[40] Speakers' discourse was shaped by the sociohistorical perspectives of their language. Michel Foucault argued that such anxieties about the autonomy of language spurred efforts 'to neutralize, and as it were polish, scientific language', rendering it 'the exact reflection, the perfect double, the unmisted mirror of a non-verbal knowledge'.[41] The English mathematician George Boole pursued this aim by proposing in the 1850s a system of 'symbolic logic', which expressed all logical propositions as algebraic equations.[42] Controlling language seemed akin to reconstructing it, replacing arbitrary formations with conscious design.

Progressive language mechanization involved contradictions which became more obvious when utopian fiction imagined it in concrete detail. Its twin goals of verbal precision and efficiency involved conflicting models of semantics, treating meaning as something both accumulated over time and assembled in the present. Visions of language becoming increasingly controlled also raised the question of who would control it. Linguistic utopias often predicted the centralization of control over language in tandem with the centralization of power, creating an authoritarian