# Science

# Martin Kusch

In this day and age, (cognitive) relativism is often regarded as anti-scientific. For instance, the main “whipping boy” of the 1990s “Science Wars” was the relativistic sociologist who (allegedly) sought to downgrade natural science by treating it as on a par with myth or magic.

Interestingly enough, this association between relativism and disrespect for science was not prominent in debates over relativism during the “long nineteenth century” in the German-speaking world--roughly, from Georg Wilhelm Friedrich Hegel (1770–1831) to Adolf Hitler (1889–1945). On the contrary, in this time period and geographical region, relativism was often seen as an *obvious consequence* of natural-scientific attitudes and theorizing. Philosophers were divided on how to assess this consequence. Some saw relativism as an essential element of the modern scientific worldview; others attacked relativism by portraying it as the result of (what we today might call) scientism or scientific imperialism.

To understand this intellectual constellation, we need to remember four important features of the natural sciences in the long nineteenth century. First, the time period in question witnessed numerous scientific advances that were perceived as “revolutionary” by many contemporaries. Moreover, Charles Darwin (1809–1882), Ernst Haeckel (1834–1919), Hermann von Helmholtz (1821–1894), Bernhard Riemann (1826–1866), Wilhelm Wundt (1832–1920), Ernst Mach (1838–1916), or Albert Einstein (1879–1955)—to mention just a few—were scientists whose names were familiar to readers of highbrow newspapers and popular weeklies. This was due, in no small measure, to these scientists’ own efforts in popularizing their findings.

Second, in the German-speaking world natural scientists, philosophers, historians, linguists, and economists still belonged to the same faculties. This made for close interactions across disciplinary boundaries: thus one finds historians trying to learn from biology or psychology (e. g. Karl Lamprecht [1856–1915], Friedrich von Hellwald [1842–1892]); philosophers engaging closely with sense-physiology (e. g. Alois Riehl [1844–1924]); logicians and epistemologists seeking to integrate their investigations with the psychology or biology of reasoning (e. g. Benno Erdmann [1851–1921], Mach); physiologists presenting their results in a Kantian garb (e.g. von Helmholtz); or physicists highly sensitive to epistemological debates (e. g. Einstein).

Third, during the long nineteenth century, the classification and institutional division of the sciences and humanities underwent substantial and often conflictual re-organization. The first chairs for physiology were introduced in the 1850s, and psychology began its long and painful separation from philosophy in the 1890s. Sometimes such re-organizations created “split identities,” that is, authors who could claim to have substantive expertise in more than one field. Thus Wundt was both a psychologist and a logician; von Helmholtz a physiologist, physicist and philosopher; or Mach a physicist, epistemologist and psychologist. New institutional boundaries frequently led to fierce competition over academic chairs; for instance, universities and ministries of education tended to create chairs in experimental psychology by cutting positions in traditional fields of philosophy. The traditional philosophers ultimately responded with a petition.

Fourth, for much of the long nineteenth century, philosophy struggled to recapture the cultural capital it had lost when the systems of Friedrich Wilhelm Josef Schelling (1775–1854) and Hegel fell into disrepute. The struggle was difficult not least because some scientists (e. g. Haeckel) published widely circulating books in which they declared much of traditional idealistic philosophy obsolete.

The last four paragraphs can help us appreciate why in the long nineteenth century relativism and natural science were seen are closely intertwined. To begin with, many important natural-scientific results were presented by their proponents as undermining traditional philosophical beliefs in absolutes: mathematicians showed that Euclidean geometry was not without alternatives; physicists rejected Newtonian conceptions of absolute space and time; biologists replaced eternal and immutable species with contingently evolving species; statisticians supplanted human essence with the fiction of “*l’homme moyen*”; sense-physiologists argued that perceptions are structured in good part by needs of the organism; and cognitive, developmental and social psychologists endlessly displayed different forms of “apperception,” that is, the influence of background information on belief formation.

The scientific challenging of absolutes was sometimes influenced by earlier or contemporaneous work in philosophy or politics. John Stewart Mill (1806–1873) and Herbert Spencer (1820–1903) were particularly important here. But the scientific rejection of absolutes in turn also had a substantive impact on philosophy, and stimulated forms of philosophical cognitive relativism. Clear cases in point were some of the logicians and epistemologists whom Gottlob Frege (1848–1925) and Edmund Husserl (1859–1938) would later attack as “psychologistic.” A particularly striking self-proclaimed relativist was the philosopher Georg Simmel who assembled his “relativistic worldview” out of scientific insights from Darwin to von Helmholtz, Riemann to Einstein. Simmel was a student of Berlin philosophers, early social psychologists (e. g. Moritz Lazarus), and von Helmholtz.

Of course, many influential philosophers—from Wilhelm Windelband (1848–1915) to Heinrich Rickert (1863–1936), from Paul Natorp (1854–1924) to Ernst Cassirer (1874–1945), Frege to Husserl, Wilhelm Dilthey (1833–1911) to Vladimir Lenin (1870–1924)—soon disagreed with these relativistic uses of natural-scientific results and attitudes. These philosophers sought to refute “biologism,” “naturalism,” “materialism,” or “psychologism”—all taken as so many species of relativism or even skepticism. At the same time, the critics were careful not to appear anti-scientific; they were objecting to, what they regarded as, a mistaken overextending of natural science into the domains of the humanities in general, and philosophy in particular. The attacks were often combined with the lament that too many philosophical chairs had already been taken over by scientists posing as philosophers. Frege’s and Husserl’s arguments against psychologism are today the best-known contributions to this genre. For both men, logical laws were ideal and outside of space and time. And thus these laws could not be studied with the methods of empirical science. Indeed, all scientific work always already presupposed logical laws.

The argument did not end here. In response to Husserl and other critics of relativistic naturalism, a number of authors proposed non-relativistic ways of overcoming a strict separation of the empirical and ideal domains. Such proposals flourished first and foremost in and around psychology, and especially in the Weimar period.

The four papers published in this section selectively highlight four key junctures of the development sketched above in broad outline.

Lydia Patton focuses on how the pioneers of psychophysics, Ernst Weber (1795–1878) and Gustav Fechner (1801–1887), as well as their most important interpreter, von Helmholtz, developed the idea that perception is physiologically, psychologically and perspectivally relative to the human observer. Patton also shows that this idea had important consequences for how these authors thought of scientific knowledge.

Richard Staley studies the relationship between “physical relativity” and philosophical relativism in Mach and Einstein. He argues that both men’s uses of the term “relativism” was influenced not only by debates in physics but also by their reflections on science and politics and views of absolute and relative across disciplines from history to physics.

Dermot Moran discusses Husserl’s life-long engagement with relativism from the *Logical Investigations* to the late *Crisis* writings. Relativistic naturalism and historicism were the central targets throughout Husserl’s oeuvre. Moran’s paper is of significance also for other sections of this book: e. g. Husserl’s attack on Dilthey and historicism is important for the “history” section, and his attack on Lucien Lévy-Bruhl (1857–1939) for the “society” section.

Finally, Paul Ziche discusses various attempts in the period around 1900 of steering a middle path between absolutist idealism and psychological empiricism. The central theme was that philosophy and the natural sciences could live in harmony as long as the latter (and their philosophical interpreters) gave up on naturalistic reductionism.