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Wissenschaften in der Spätaufklärung



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I came to the Wissenschaftskolleg with the aim of completing a great deal of the research for a planned study on the *interrelationship between the natural sciences and the emerging human sciences* (Geisteswissenschaften) *in Germany during the last half of the eighteenth century*. I had already investigated aspects of the relationship between history and the life sciences. My aim in Berlin was to see if I could discern analogous structures in other scientific and humanistic disciplines. I was especially interested in examining chemistry, medicine, geology, and mineralogy on the one side and anthropology, linguistics, and aesthetics on the other. After concerted research, made possible by Berlin's rich collections and aided by the Wissenschaftskolleg's outstanding library staff, I have come to the conclusion that such correspondences can be shown to exist and that taken together, they formed a distinct language of nature and science that differed in important ways from that which had been dominant at the beginning of the Enlightenment and has been assumed by many commentators to have characterized the whole Enlightenment. During the year I wrote two articles in which I developed some of these points. To test this hypothesis further, I joined John Hope Mason, a colleague at the Wissenschaftskolleg, in organizing a conference where issues related to both our topics could be discussed. The sessions proved to be intellectually exciting and highly informative: they helped me to clarify, expand, and modify some of my original assumptions.

As a result of these experiences and of discussions held with other fellows in the Kolleg, I believe I am now ready to write this study. I shall attempt to revise some of the normal generalizations made about the na-

ture of scientific thinking in the late Enlightenment, to correlate this scientific thought with central movements in the development of the disciplines of history, anthropology, linguistics, and aesthetics, and, finally, to relate these developments to questions of political and social structure. In the most general terms, I shall attempt to describe a reciprocal exchange between these disciplines in which conceptual shifts in one area influenced and were influenced by those in another and where the whole process was guided by the need to answer and give meaning to central concerns of the age. Here, I will treat scientific conceptualization — in its broadest connotations — as a social product created at a specific time that necessarily responds to conscious and unconscious existential concerns. In this specific instance, the themes I will deal with are, what I call, the revitalization and the temporalization of nature and the naturalization of the human sciences. This double process can be interpreted as a response to a deep-seated contemporary dissatisfaction with what was the then dominant mode of normal scientific explanation — referred to by contemporaries as "mechanism". For many thinkers of the late Enlightenment, mechanism failed both in its ability to explain certain natural phenomena and, more so, to account for human intention, morality, and activity. This was especially vexing in a world where everyone agreed that nature was the surest guide for life, politics, and art. The wholesale response, then, was to attempt to re-introduce precisely those elements that had been banned during the "scientific revolution" of the 17th century, though in a modified form. Invisible forces, qualities, teleology all became constituent properties of matter. The grand, universal seventeenth-century mathematical definitions of the world were replaced by limited systems, which, though open to specific quantification, were seen as being beyond the ken of all-knowing intellect. Here phenomenology and instrumentalism replaced the ontological search for cause and effect. The sharp distinction between mind and body — a distinction which had authorized the epistemological claims of the scientific revolution — was blurred, if not destroyed. Matter was imbued with vital energies, robbed of its properties of hardness and impenetrability, and often assumed to be fluid in nature. Further, it was assumed that its basic elements — not atoms, which were considered unknowable and hence products of speculation — had individual, elective affinities which deemed that they would be more attracted to one element than another. Finally, each element was seen as able to retain or release a specific amount of heat, a quality that had nothing to do with the mechanical properties of mass, volume or weight. In all, a different order of things was established that emphasized hidden powers, sympathies, analogical thinking, and the vitalization of nature without denying the explanatory correctness of

mechanism — provided it was restricted to the spheres it was designed to explain, namely the action and interaction of inanimate matter. It was precisely this redefinition of science and nature that allowed the humanistic sciences to translate the methods and assumptions of the new natural sciences into their own fields and to develop their own specific procedures; these, in turn, sometimes transcended the original formulations and returned to influence the further development of the natural sciences. Thus, during the latter half of the Enlightenment there was a fruitful exchange between the "advanced" sciences of the period and the burgeoning human sciences (*les sciences de l'homme*). Whatever late-nineteenth century thinkers had to say about the supposed incompatibility of the natural sciences and the human sciences, the foundation of the latter were laid when one did not believe in such a distinction. Only when the natural sciences were "re-mechanized" was it necessary for proponents of the humanities to formulate an epistemological base to support a procedure that already had been established.

Though these conclusions may be controversial and not as well developed as some may desire, my stay at the Wissenschaftskolleg has provided me with the time and resources to develop these arguments, to refine them, and also to suggest new lines of research when this present project is completed.