Nietzsche's attitude toward science in his later works is ambivalent: he makes approving remarks about its findings, rigorous methodology, and spirit of adventurousness and intellectual integrity; but he also points out its limitations, criticizes his contemporaries' overvaluation of science, and rebukes scientists for encroaching onto the territory of philosophers. This raises the question: what does Nietzsche think the proper role of science is, and how should it interact with philosophy? I argue that, according to Nietzsche, philosophy is supposed to set goals for science. The distinctive task of philosophers is to "create values," which involves two steps: (1) envisioning the ideals that human society should realize, and (2) turning those ideals into prescriptions for behavior and the organization of society. Philosophers need the help of scientists to proceed from step (1) to step (2), because scientists (social as well as natural) can tell them how various value systems affect the psychology and cultural achievements of their adherents. With a certain ideal for human life in mind, philosophers should delegate scientists to investigate what moral rules and social arrangements were in place when this ideal was most fully realized in the past, or to test hypotheses as to what ways of life might realize it in the future.