INTRODUCTION

The unity of science movement was itself far from unified.¹ There may have been unity on the rallying call for a unity of science but that is as far as it went. Not only was there disagreement among the main protagonists on what was meant by the unity of science, but also on how to achieve it. In this paper I shall deal with Edgar Zilsel’s (1891-1944) conception. It represents an interesting break with the more programmatic approaches of Carnap, Neurath, c.s.; Zilsel emphasizes the need for an empirical demonstration of the unity of science, which has interesting meta-philosophical implications.² The unity of science is not just central to his research programme; it is what constitutes the latter’s unifying principle, although this is far from evident if one takes a look at the historical essays he published in exile in the USA during the 1940s. (These important essays on the emergence of science, well known among historians of early modern science, have given rise to the so-called Zilsel Thesis, which holds that modern science came into being when, between 1300 and 1600, the social barriers between those who ‘labored with their minds and tongues’, i.e. the university scholars and the humanists, and those who ‘worked with their hands’, i.e the superior artisans, eroded because of the rise of free-enterprise capitalism.³)

But simultaneously, he also published a couple of smaller and far less known essays, directed against Southwest-German Neo-Kantianism (Rickert, Windelband), Dilthey’s philosophy of life, and interpretative sociology (Max Weber, W. Sombart, G. Simmel, R. Stammler, Alfred Weber, etc.). His main argument was that philosophers of cultural science and the humanities had a false understanding of natural science. Because of this false understanding, they erroneously postulated a fundamental methodological difference between the natural sciences and the human sciences. According to Zilsel, this difference does not exist. In his view the historian is basically confronted with the same problems as the natural scientist. If the science of history is not compared with classical mechanics but with, for example, geophysics – that is, “the physics of earthquakes, sea-currents, volcanology, and meteorology” – one will arrive at the conclusion “that historical phenomena are hardly more difficult to predict than the weather, and certainly no more difficult than earthquakes and volcanic
eruptions. What would scientists think of a geophysicist who abandoned the search for geophysical laws because of their inexactness? ” (SOMS: 202)

At first glance, these two sets of essays do not seem to have much in common. Closer investigation of Zilsel’s life and work, however, reveals an inner connection – at least in Zilsel’s intention. This inner connection is what I call Zilsel’s empirical problem of the unity of science: showing that law-like statements in the socio-historical sciences are indeed possible. In order to show this, I shall discuss in some detail Zilsel’s earlier work and the theoretical development through which Zilsel went. This will allow me to explain what the idea of the unity of science meant to Zilsel.

THE APPLICATION OF NATURAL SCIENTIFIC METHODS TO THE HUMANITIES

Zilsel’s first book, The Application Problem (1916), attempts to solve the philosophical problem of applying statistics to an “irrational nature”. The main topic of the book is a riddle posed by the so-called law of large numbers. The law states that “with a large number of repeated throws of a chance game ... the relative frequency almost equals the mathematical probability.” 4 Nature, however, could be rather different. She could produce frequencies quite different from the expected result. It is therefore only at first glance trivial to ask why the law of large numbers is applicable at all. Zilsel construed this problem as being part of a wider one: how can rational mathematical constructions be applied to a vague and irrational nature? This is what Zilsel termed ‘the application problem’.

His analysis of the epistemological and ontological status of the law of large numbers led to the conviction that there are general philosophical problems that are related to all sciences but not solvable within any one specific science. In opposition to the proponents of logical positivism within the Vienna Circle, Zilsel believed that the discussion of such problems was fruitful and should not be denounced as consisting of metaphysical ‘Scheinprobleme’. At the same time, however, he did not believe in the capacity of philosophy to solve fundamental problems independently of empirical research and distrusted philosophy as an independent discipline. Zilsel was outspoken in his desire to unite these fundamental philosophical problems with the contemporary problems presented in empirical research and despised all attempts by “schoolmasters ... who would separate ... philosophy from the empirical disciplines”. 5 His position is that “at present [it is] only possible to fruitfully discuss philosophical problems in ... intimate relation to living science”. 6 The interaction between the sciences and classical philosophy of the 17th century is his prime example.

Accordingly, Zilsel began to study the ‘application problem’ not as a methodological problem but in the context of the statistical analysis of history and culture. How is the ‘nature’ of society to be perceived if it is subordinate to the law of large numbers? Zilsel’s second major book, On the Development of the