

F-13: Buddhist cross-cultural influences on Einstein's early theory of Relativity*

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In this paper I begin by examining the epistemological background to the Theory of Relativity as presented by Albert Einstein in his *early* papers on relativity (1905-07). This particular epistemology did not make a distinction between perception and 'reality'; a position which closely parallels the epistemology in mainstream Buddhist philosophies. This, when coupled with the postulate that the speed of communication has an invariant upper limit, led to a radical revision of the conception of space and time then prevalent in Europe. In 1907 Einstein, by further mathematical analysis of this epistemology and postulate, showed also that matter and energy are interchangeable.

I next trace the history of this radical epistemology in philosophy. A striking parallel to not only this epistemology, but *specific ideas on Space and Time* is found in Buddhist writings (Buddhist Sutras and Canonical texts). These writings developed from the various debates that Buddhist philosophers and monks engaged with different religious and philosophical traditions. In the West similar epistemological ideas were proposed and explained by David Hume (Treatise on '*Human Nature*', 1740) and his followers such as Lichtenberg. Towards the end of the nineteenth century these ideas and specific conclusions on Time and Motion were being proposed by Ernst Mach (1888) in a text which was to closely resemble that of Einstein (1905). The historical similarities and possible influences by Buddhist philosophy on David Hume, Jacobson and Ernst Mach have not escaped the notice of historians of science.

Further, it is well documented that Einstein in his lectures, written texts and autobiography, repeatedly acknowledged his early intellectual debt to Ernst Mach and David Hume. The Hume-Mach-Einstein triangle led to a reinforcing confluence of ideas which was heavily influenced by these knowledge transfers from the East.