"DISCOVERING NEPTUNE" – CRITICAL RATIONALISM AND EDUCATIONAL PRACTICE

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Critical rationalism as well as Popper's ideas on education have been the inspiration for an independent learning-cooperative, dedicated to evoking and deepening children's interest and curiosity in learning science, which is being carried out by the present author in cooperation with a Viennese parental association. Departing from historical problems in astronomy (e.g. eclipses, the retrograde motion of planets, irregularities of the motion of planets), transferred to an imaginary solar system, children from 9 - 12 are being encouraged to present as many different ideas or models of explanation as possible. In a second step, and in group work, situations have to be found which would allow their models to be tested and could reveal them to be erroneous (models which cannot be exposed to criticism leave the game at that stage); the surviving models being held as possible candidates for truth. In a third step, children are being made familiar with several historical approaches to the solution of some of the problems in question, and are finally presented with problems that Kepler, Adams, Leverrier, et al were dealing with. In that "[*w*]*e do not discover new facts or new effects by copying them, or by inferring them inductively from observation, or by any other method of instruction by the environment*" but by "[*using*]*rather, the method of trial and the elimination of error* (*The Myth of the Framework*), the aim of the project is not in the first place to provide children with existing astronomical knowledge, but to evoke their curiosity for the adventure of scientific discovery

As one result, and apart from an increasing interest in further information and data while trying to "match" their own ideas (*How strongly do stars and planets attract one another; are the bigger ones the stronger ones or not? Can their size change, could an explosion make them leave their orbits?*), children have been strongly concerned by the problem of truth regarding existing knowledge (*How could Einstein know he was right, and if there were a better explanation some day, how can we know it to be "better"?*), showing, as a side-effect, a rather critical curiosity towards the way knowledge in general is being presented in the media.

Focussing on that latter point, I shall try to evaluate some implications of Popper's philosophy not only for the possibilities of science learning, but, in a broader sense, for an early education towards criticism and intellectual responsibility.