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EXAMINATION OF THE AXIOMATIC FOUNDATIONS OF A THEORY OF CHANGE. III

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THIRD PART*

§§1-3

§1. Description of the deductive system. In the contemporary scientific literature we can find many variations of the first-order predicate calculus. It is then necessary to select one of these which shall serve to derive our propositions from our axioms. We shall use the first-order predicate calculus by H. Hermes in his "Einführung in die mathematische Logik" [13]. This calculus has the form of a calculus from assumptions. Hermes describes a proof in his calculus as follows: "Ein Beweis im Sinne eines Annahmenkalküls besteht . . . aus einer endlichen Folge von Zeilen, wobei jede Zeile aus endlich vielen Aussagen besteht, von denen die jeweils letzte als die Behauptung und die vorangehenden als die Annahmen dieser Zeile angesehen man von Ausgangszeilen (den Prämissen) übergehen kann zu einer weiteren Zeile (der Conclusio)", [13], pp. 34-35.

In the following presentation of the system of deductive rules, we shall use the symbols "ρ", "σ", "τ", and "a", "b", "c", and "Q", "R" as variables respectively for expressions, and individuals (momentaneous subjects or properties), and predicates.

(**A**) Rule of self-affirmation

$\rho\rho$

(Rule without premisses) The rule allows to write the sequence $\rho\rho$ for any expression ρ.

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