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Structural Analysis The analytic tendency in science has resulted in attempts to analyze reality into the smallest possible components and within the simplest possible analytic frames. The simplest analytic frame that can still inform us about reality is one in which we consider some set of dependent variables [together with] a related set of 'independent' variables and try to explicate the functional relationship among the variables within that frame. This structurally dichotomous, 'independent-dependent' analytic frame has dominated much of the research and statistical methodology of the sciences - especially of the social and behavioral sciences.

It is assumed, sometimes implicitly, sometimes explicitly, that the true complexity of the structure of reality can be approached a piece at a time by the accumulation of [well researched] relationships within these simple dichotomous analytic frames - the relationships presumably being joined together in some kind of network whose structure matches the structural complexity of the area under investigation. Reality, unfortunately, is not necessarily amenable to such dissective analysis. Many interesting and important characteristics of both theoretical and practical significance are simply impossible to model or analyze within a dichotomous frame of analysis - they simply disappear or remain inexplicable when such a frame is applied. The ubiquitous feedback loop is probably the most well known such characteristic.

These non-dichotomous characteristics <u>can</u> be modeled in terms of networks of relationships - networks of the same type as accumulated by successive related dichotomous frame analyses. The analysis of such non-dichotomous characteristics, however, can <u>only</u> proceed in terms of analytic frames that include the [entire relevant] network structure as part of the frame. The problem is that to apply an analytic frame that is intrinsically incapable of modeling salient network characteristics [e.g. a dichotomous frame,] will force the model of the relationships within that [overly simple] frame to account not only for that part of the network to which the frame is 'appropriate', but for all the broader network characteristics which affect the section under analysis as well. Trying to use such an inappropriate frame to do the impossible will then generally result in the consequent analysis being invalid for any part of the network.* Thus, non-dichotomous characteristics [e.g. recursions or feedbacks,] can be studied in terms of [structural] networks or systems of relationships (equations), but only if these systems of equations are studied as systems, with all their structure, and not a piece at a time.

*Note that this makes the frame of analysis part of the to-be-tested structure of hypotheses, instead of merely a falsely 'neutral' frame within which hypotheses are stated. Testing the structural frame part of such hypotheses is one of the broader significances of goodness of fit tests as compared to parameter tests within a given frame.