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Engineering Models of Human Behavior

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Abstract: The level at which a computational cognitive model provides explanations of phenomena is often unclear, especially when there is no sufficient distinction between behavior and cognition. It has been shown that human behavior is amenable to SOM modeling aiming at compressed classification and prediction. Reducible to an engineering level this modeling approach offers no associations to biologically plausible cognitive mechanisms if there is no explicated claim of correspondence between the mechanisms used and the biological mechanisms that drive behavior. At the statistical level no claim of biological plausibility is always a prerequisite for the validity of the model.

Case studies of behavioral SOM models, conducted by the author, demonstrate and support the proposition that engineering models are not by default brain cognitive models or causal models of human behavior until appropriate associations have been established; prior to the latter, SOM models merely suggest algorithmic engineering solutions to challenging statistical problems.