

Structural System Property: *atis* **Toputness**

(*Structural system properties* are those properties that are part of the theory and describe patterns of system and negasystem connectedness or partitions.)

Toputness, $\mathbf{T}_p(\mathfrak{S})$, =_{df} Partition of *negasystem* components for which *system toput control qualifiers* are “true.”

$$\mathbf{T}_p(\mathfrak{S}) =_{df} \{\mathbf{x} \mid \mathbf{x} \in \mathfrak{S}'_0 \wedge \exists P(\mathbf{x}) \in {}_{\mathbf{T}_p} \mathcal{L}_C [f(\mathbf{x})(\mathbf{T}_p \times_{\mathbf{T}_p} \mathcal{L}_C) = \tau]\}.$$

Toputness is defined as the set of *negasystem* components and there exist toput control qualifiers such that there is a function from the product of the toput components and toput control qualifiers that is “true.”

***M*: Toputness measure**, $\mathcal{M}(\mathbf{T}_p(\mathfrak{S}))$, =_{Df} a measure of toput components.

$$\mathcal{M}(\mathbf{T}_p(\mathfrak{S})) =_{Df} |\mathbf{T}_p(\mathfrak{S})| \quad (1)$$

$$\mathcal{M}(\mathbf{T}_p(\mathfrak{S})) =_{df} \log_2(|\mathbf{T}_p(\mathfrak{S})|) \div \log_2(|\mathfrak{S}'_0|) \quad (2)$$

The choice of measure will depend on the application. Measure (1) is of value where the size of the toput set is required for comparison, say, to the input set; that is, a comparison of actual feedin is desired. Measure (2) is of value where a comparison to the system or between systems is desired that relates the amount of toput as a fraction or percentage of the total system.