

Structural System Property: *atis* Vulnerableness

(Structural system properties are those properties that are part of the theory and describe patterns of system and negasystem connectedness. The structural properties define the topology of the system, and every affect relation defines a topology on the system.)

Vulnerableness, $\mathcal{V}\mathfrak{S}$, =_{df} a partition, $\mathcal{Y} = (\mathcal{V} \subset \mathcal{G}_0, \mathcal{R} \subset \mathcal{G}_A)$, characterized by bridge-affect-relations.

$$\mathcal{S} =_{df} \mathcal{Y} \mid \forall \mathbf{u}, \mathbf{v} \in \mathcal{Y}(\mathcal{V}) \exists^1 \mathbf{e} \in \mathcal{Y}(\mathcal{R}) [\mathbf{e} = (\mathbf{u}, \mathbf{v}) \supset \ell(\mathbf{e}) = \ell^{\text{Bridge}}(\mathbf{e}) = 1]$$

M: Vulnerableness measure, $\mathcal{V}\mathfrak{S}$, =_{df} a measure of bridge-affect-relations.

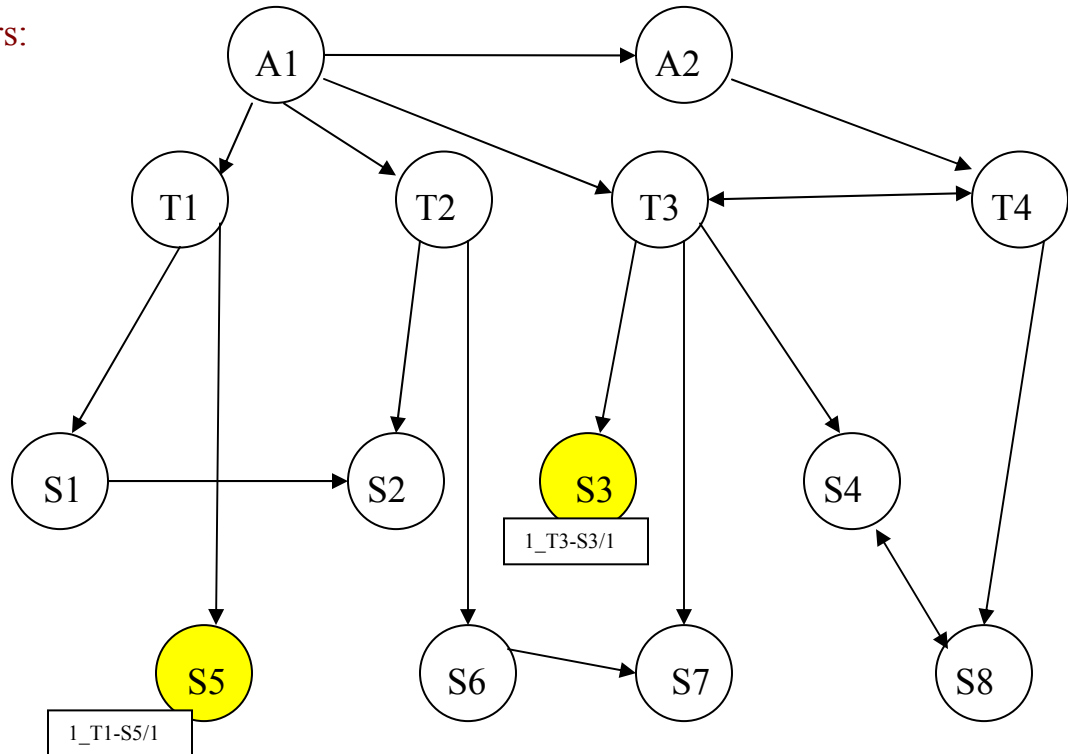
$$\mathcal{M}(\mathcal{V}\mathfrak{S}) =_{df} \left\{ \left[\sum_{i=1, \dots, n} \left(\sum_{j=1, \dots, m} \ell^{\text{Bridge}}(\mathbf{e}) \right)_i \right] \div \mathbf{C} \right\} \times 100$$

Vulnerableness in a School System

Administrators:

Teachers:

Students:



Affect Relation: Controls Activities of

In this system, there are 2 components that *Control Activities* of other components with respect to *Vulnerableness*. Since there is only 1 affect-relation and 14 components, then the total possible affect relation paths is $P[Z(\mathfrak{S}_0)] = 236,975,181,590$; and therefore, $C = \log_2(P[Z(\mathfrak{S}_0)]) \approx 37$. There are 2 paths related to *Vulnerableness*.

Therefore: $\mathcal{M}(\sqrt{\mathfrak{S}}) \approx 5.29$.