Note on binding of an association property to semantic properties

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Let us consider two properties - P_i and P_j connected through association property (or link) $A_{i,j}$.
P_i----$A_{i,j}$----P_j
The properties P_i and P_j are represented by their property signatures $\mathbf{p}_i$ and $\mathbf{p}_j$. The association link $A_{i,j}$ is represented with its association matrix $\mathbf{a}_{i,j}$ and semantic significance vector $\mathbf{w}_{i,j}$.
The association matrix has the following structure:

$$\mathbf{a}_{i,j} = \begin{bmatrix} \mathbf{r}_1 & \mathbf{r}^1 \\ \mathbf{0} & \mathbf{0} \\ \mathbf{r}_2 & \mathbf{r}^2 \\ \mathbf{0} & \mathbf{0} \\ \vdots & \vdots \\ \mathbf{0} & \mathbf{0} \\ \mathbf{r}_k & \mathbf{r}^l \end{bmatrix}$$

Here $\mathbf{r}_i$, $i = 1..k$ denote regions of interest in the property signature of the property on the left of $A_{i,j}$ - P_i. Similarly, $\mathbf{r}^j$, $j = 1..l$ denote regions of interest in the property signature of the property on the left of $A_{i,j}$ - P_j. Let us assume that there is a universal law which allows us to calculate the binding force between P_i and P_j given with their signature vectors $\mathbf{p}_i$ and $\mathbf{p}_j$. Let us assume a general form for this law:

$$F^b(P_i, P_j) = f(\mathbf{p}_i, \mathbf{p}_j)$$

What is important to realize is that the binding force between the properties depends only on the presence of specific regions of the property signatures, namely $\mathbf{r}_1, \mathbf{r}_2, \dots, \mathbf{r}_k$ and $\mathbf{r}^1, \mathbf{r}^2, \dots, \mathbf{r}^l$. Thus, it will be true:

$$f(\mathbf{p}_i, \mathbf{p}_j) = f([\mathbf{r}_1, \mathbf{0}, \mathbf{r}_2, \mathbf{0} \dots \mathbf{0}, \mathbf{r}_k], [\mathbf{r}^1, \mathbf{0}, \mathbf{r}^2, \mathbf{0}, \dots, \mathbf{0}, \mathbf{r}^l])$$

Further removal of a non-zero subregion from any of the regions $\mathbf{r}_i$, $i = 1..k$ and $\mathbf{r}^j$, $j = 1..l$ will lead to decrease of the binding force to a value lower than $f(\mathbf{p}_i, \mathbf{p}_j)$. We will assume that the positions and length of the zero regions is unique i.e. there is no other set with the same number of zeros which will lead to the same value of the binding force.