



$$M = \begin{bmatrix} 1 & 1 & 1 & 0 & 1 & -2 \\ 1 & -1 & 1 & -1 & 1 & 1 \\ 1 & 1 & 0 & -1 & -2 & 1 \\ 1 & -1 & -1 & 0 & 1 & -2 \\ 1 & 1 & -1 & 1 & 1 & 1 \\ 1 & -1 & 0 & 1 & -2 & 1 \end{bmatrix}$$

$$N = \begin{bmatrix} 1 & 1 & 1 & -1 & -1 & -1 \\ 1 & -1 & -1 & -1 & 1 & 1 \\ -1 & -1 & 1 & 1 & 1 & -1 \end{bmatrix}$$

If $\vec{\mathbf{p}} \in \mathbb{R}^6$ is a profile with standard coordinates, then

- $M^{-1}\vec{\mathbf{p}}$ gives the decomposition in terms of $K, \mathcal{C}, B_A, B_B, R_A, R_B$
- $N\vec{\mathbf{p}}$ gives the pairwise outcomes of $\vec{\mathbf{x}}$. i.e. $N : \mathbb{R}^6 \rightarrow \mathbb{R}^3$