Simplified State Space

Proposition

Let $G = \{N, (A_i), (u_i)\}$ be a finite strategic game. Every probability distribution over outcomes that can be obtained in a correlated equilibrium of G can be obtained in a correlated equilibrium in which the set of states is A and for each $i \in N$ player i's information partition consists of all sets of the form $\{a \in A : a_i = b_i\}$ from some action $b_i \in A_i$.

- Let $\{(\Omega, \pi), (\mathcal{P}_i), (\sigma_i)\}$ be a correlated equilibrium of G.
- $\{(\Omega', \pi'), (\mathcal{P}'_i), (\sigma'_i)\}$ is also a correlated equilibrium of G.
    - $\Omega' = A$ and $\pi'(a) = \pi(\{\omega \in \Omega : \sigma(\omega) = a\})$ for each $a \in A$.
    - $\mathcal{P}'_i$ consists of sets of the type $\{a \in A : a_i = b_i\}$ from some $b_i \in A_i$.
    - $\sigma'_i(a) = a_i$.