Decition problem and definitions	**General expression for Δ** $\langle p \rangle := \frac{1}{N}\sum_{i=0}^{N-1} p_i, \quad \langle p^2 \rangle := \frac{1}{N}\sum_{i=0}^{N-1} p_i^2$	$p_i = p$ (constant) $\implies \langle p \rangle = p$ $\implies \langle p^2 \rangle = p^2$	$p_i \in \{0, 1\}$ $\implies \langle p^2 \rangle = \langle p \rangle$	$p_i \in \{\epsilon, 1-\epsilon\}$ $\implies \epsilon \leq \langle p \rangle \leq 1-\epsilon$ $\implies \langle p^2 \rangle = \langle p \rangle - \epsilon(1-\epsilon)$
Prisoners dilemma against copy $\Delta := Q(\text{Cooperate}) - Q(\text{Defect})$ $p_i := P(\text{Cooperate}\vert t=i)$ $M :=$ Gain from copy cooperating $m :=$ Gain from self defecting	$\Delta = M\frac{\langle p^2 \rangle - \langle p \rangle^2}{\langle p \rangle(1-\langle p \rangle)} - m$	$\Delta = -m$	$\Delta = M - m$	$\Delta = M\left(1 - \frac{\epsilon(1-\epsilon)}{\langle p \rangle(1-\langle p \rangle)}\right) - m$
Evidential blackmail $\Delta := Q(\text{Pay}\vert\text{Blackmail})$ $-Q(\text{Dont}\vert\text{Blackmail})$ $p_i := P(\text{Pay}\vert\text{Blackmail}, t=i)$ $M :=$ Curent stock value $m :=$ Blackmail ransom $q := P(\text{Market crach})$	$\Delta = M\frac{q(1-q)(\langle p^2 \rangle - \langle p \rangle^2)}{q^2\langle p \rangle(1-\langle p \rangle) + \beta} - m$ $\beta = (1-2q)[\langle p \rangle^2 + \langle p^2 \rangle - 3q\langle p \rangle\langle p^2 \rangle - (1-2q)\langle p^2 \rangle^2]$	$\Delta = -m$	$\Delta =$	$\Delta =$
Absent minded driver $\Delta := Q(\text{Continue}) - Q(\text{Exit})$ $p_i := P(\text{Continue}\vert t=i)$	$\Delta = \frac{4\langle p \rangle - 4\langle p \rangle^2 - 2\langle p^2 \rangle - 4\langle p \rangle\langle p^2 \rangle + 6\langle p^2 \rangle^2}{(1-\langle p^2 \rangle)(\langle p \rangle + \langle p^2 \rangle)}$	$\Delta = \frac{4-6p}{1+p}$	$\Delta = 1$	$\Delta = \frac{2\langle p \rangle(1-\langle p \rangle) + [2-8\langle p \rangle + 6\epsilon(1-\epsilon)]\epsilon(1-\epsilon)}{2\langle p \rangle(1-\langle p \rangle) + [3\langle p \rangle - 1 - \epsilon(1-\epsilon)]\epsilon(1-\epsilon)}$
Death in Damaskus $\Delta := Q(\text{Damaskus}) - Q(\text{Alleppo})$ $p_i := P(\text{Damaskus}\vert t=i)$ $M :=$ Value of beeing alive	$\Delta = M\frac{(\langle p \rangle - \langle p^2 \rangle)(1-2\langle p \rangle)}{\langle p \rangle(1-\langle p \rangle)}$	$\Delta = M(1-2p)$	$\Delta = 0$	$\Delta = M\frac{\epsilon(1-\epsilon)(1-2\langle p \rangle)}{\langle p \rangle(1-\langle p \rangle)}$
Game against copy with general payof matrix $\Delta := Q(a_1) - Q(a_2)$ $p_i := P(a_1\vert t=i)$ $M_{jk} :=$ Reward for self doing a_j and coppy doing a_k	$\Delta =$	$\Delta = M_{12} - M_{22}$ $+(M_{11} + M_{22} - M_{12} - M_{21})p$	$\Delta = M_{11} - M_{22}$	$\Delta = M_{11} - M_{22}$ $+\left(\frac{M_{12}-M_{11}}{\langle p \rangle} + \frac{M_{22}-M_{21}}{1-\langle p \rangle}\right)\epsilon(1-\epsilon)$