The iterated prisoner's dilemma (IPD) game has been used extensively in modelling various real-world situations. This talk is concerned with the evolutionary approach to the IPD game. Firstly, we generalise the game from the classical 2 player case to N (N>2) players and investigate the impact of the group size on the evolution. Secondly, we study a more realistic IPD game where more than two levels of cooperations are allowed. Surprisingly, more choices appear to discourage cooperation among players. Possible reasons for this are discussed. Lastly, we introduce reputation into the IPD game and study its impact on the evolution of cooperation. It turns out that the reputation of a player is an important factor in encouraging cooperative behaviours.