Introduction

Game theory has ~~excisted~~ existed for millennia and has been ~~in~~ applied to many ~~forms~~situations~~:~~, ranging from historical events (such as ~~Spains'~~ Spain's rebellion ~~on~~ against Rome in 75 BCE ~~(~~[McCain 2010~~)~~,~~]~~). biological models (such as natural selection), market environments (such as ~~oligopoly~~oligopolies)~~,~~ politics (such as election bidding), and computer science~~ to name few~~. This field of applied mathematics captures ~~behaviour~~ behavior in strategic situations (called ~~-~~games~~-~~), wherein the success (payoff) of the choice made by an individual (the ~~(~~player~~-~~) is dependent on the ~~choiceesmade~~ choices made by others~~²~~ (other players) (Myerson, 1991)~~—~~.

The three main mathematical models of games are the *extensive* form, the *strategic* form, and the *coalition* form. The bases of difference in ~~one~~each of these models ~~is~~ are the amount of detail provided: the players, their preferences, their information, the strategic actions available to them, and how these influence the outcome~~²~~.

In this paper, we describe the *strategic* form and study its phenomena in a case of business management~~—~~ ~~—~~labor negotiation at an automobile factory.

The *strategic* form, also called the normal ~~of a~~game, has ~~much little~~ fewer details compared with the extensive form. ~~For~~ In the extensive form, the ~~position~~ positions and ~~move~~ moves of the game are closely followed, and the rules define the probable outcomes in planned or random moves ~~—~~(gambling~~-~~). By contrast, in the *strategic* form, the ~~players~~ players' choice, i.~~e~~.e., a ~~-~~*strategy* selected from a set of possible strategies, determines the outcome, i.~~ee~~.e., *payoff*. All players choose a *strategy*, and ~~once~~ after the choices are revealed, the game ends with each player getting some *payoff*. Each player's payoff is influenced by ~~by each~~the player's players' ~~choice~~ choices. Payoffs can be quiet complex ~~entity~~entities. For our model, we represent payoffs by numerical values. Hence, we assume that the numerical payoffs depend on the choices of all the players.

3 Three objects define the *strategic* form of a game: 1) the set of players: $N=\{1,2,\ldots,n\}$; ii 2) the sequence of the players' strategy sets: $X_1,\ldots, X_n$; and 3) the sequence of player's pay-off functions: $f(a_1,\ldots, a_n),\ldots,f_n(a_1, \cdots, a_{\ n}\ )$.