Competition for Staff between Two Departments

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In this paper the following scenario is analyzed from a game-theoretical point of view. Two departments in a large organization are each seeking to make an appointment within the same area of expertise, for instance, a computer science specialist. To avoid duplication it has been decided that the heads of the two departments should together interview the applicants in turn and make their decisions on one applicant before interviewing any others. If a candidate is rejected by both departmental heads, the candidate cannot be considered for either post at a later date. If both heads decide to make an offer two cases are considered: (a) the departments are equally attractive so that an applicant has no preference between them (b) one department can offer better prospects to applicants who will always choose that department. The departmental heads know that there are precisely n applicants and that each applicant has an expertise which is random over a known range. If no appointment is made to a department from these n applicants, then the department will suffer from a shortfall of expertise. In the paper it will be shown that that the games (a) and (b) have very different characteristics. The game (b) is straightforward to analyze because it has just one Nash equilibrium. On the other hand, game (a) has many this game has many Nash equilibria and this raises the question of equilibrium selection. We will argue that there are comparatively few natural ones and show that it is reasonable to have several Nash equilibrium solutions as different dynamics within the firm can result in different outcomes. Thus, if one departmental head is aggressive and one passive, we might expect a different outcome to one in which both are of a similar temperament. In the former case we would not necessarily expect a symmetric outcome even though the scenario does not give one player an advantage over the other. Thus, although it may be natural to expect a solution of (a) to be symmetric, we will also investigate non-symmetric solutions. These non-symmetric equilibria have the advantage that the players have pure actions whereas, in our symmetric solution, the players are called upon to employ actions with complicated probabilities.