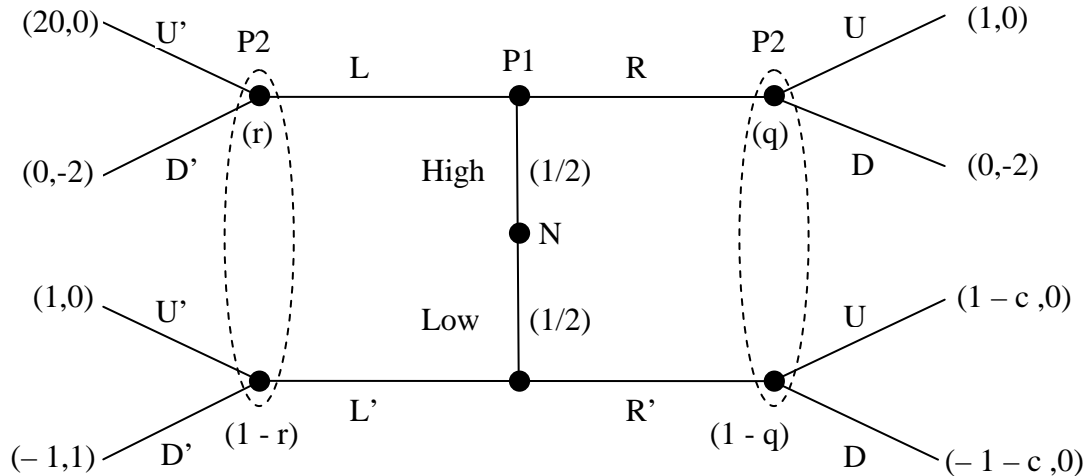


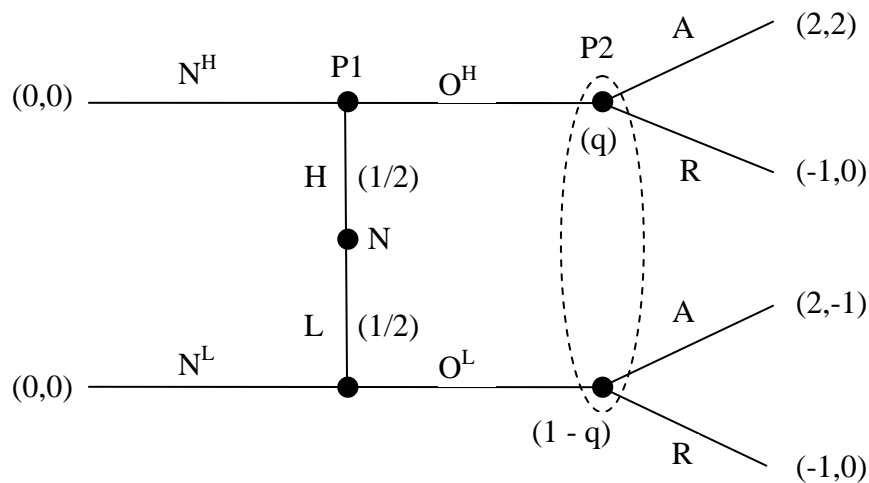
# Asymmetric Information Games I

## 1. Pre-packaged Asymmetric Game II



- Does this game have a *separating* perfect Bayesian equilibrium? If so, fully describe it.
- Does this game have a *pooling* perfect Bayesian equilibrium? If so, fully describe it.

## 2. Firm Signaling Game



Consider the extensive-form game of incomplete information depicted above. There is a firm and a worker. In this game, nature first chooses the “type” of the firm (player 1). With probability  $p$ , the firm is of high quality ( $H$ ) and, with

probability  $1 - p$ , the firm is of low quality (L). The firm chooses either to offer a job to the worker (O) or not to offer a job (N). If no job is offered, the game ends and both parties receive 0. If the firm offers a job, then the worker either accepts (A) or rejects (R) the offer. The worker's effort on the job brings the firm a profit of 2. If the worker rejects an offer of employment, then the firm gets a payoff of -1 (associated with being "jilted"). Rejecting an offer yields a payoff of 0 to the worker. Accepting an offer yields the worker a payoff of 2 if the firm is of high quality and -1 if the firm is of low quality. The worker does not observe the quality of the firm directly.

Check all possible PBE's of this game.

3. Consider the **Spence Education Game** from class. Would an education be a useful signal of the worker's type if the types had the same education cost? Explain your answer verbally then resolve the game without these education costs to "prove" your explanation is correct in the context of this game.
4. Compute the PBE of the **Spence Education Game** under the assumption that the worker is a high type with probability  $\frac{1}{2}$  and a low type with probability  $\frac{1}{2}$  instead of the probabilities we used in class. Be sure to redraw and resolve the entire game.