Keeping Player 1's strategy fixed, Player 2 does not want to deviate just in case:

$$a > 0,$$

which we've assumed to be the case.

Keeping Player 2's strategy fixed, Player 1 does not want to deviate just in case:

$$b - c_H \geq 0 \quad \text{and} \quad b - c_L \leq 0,$$

which is equivalent to:

$$c_H \leq b \leq c_L.$$