Equilibrium:

$$p(a^* + \varepsilon) < p(1 - a^* - \varepsilon),$$

$$p(a^* - \varepsilon) > p(1 - a^* + \varepsilon) \ [1].$$

[1] Giorgio Vallortigara, The evolution of brain lateralization: a game-theoretical analysis of population structure, 2004. https://pmc.ncbi.nlm.nih.gov/articles/instance/1691668/pdf/15255105.pdf.