# 2-down 1-up Staircasing

2-down 1-up procedure works as follows: you start at an arbitrary value of $\theta$ (can be dot coherence, contrast, number of distractors, ISI, etc), increase it by one step after every incorrect response and decrease it by one step after every two consecutive correct responses. At the limit, this process is guaranteed to converge to a value of $\theta$ that generates 71% accuracy.

Importantly, **after every down-step the correct response count goes back to 0**. This means that if the participant was correct 3 times in a row, we will decrease theta by one step after the first two responses, but not after the second and the third responses.

An example sequence will be $0, \uparrow, 1, 0, \uparrow, 1, 1, \downarrow, 1, 0, \uparrow$ with ones and zeros standing for correct and incorrect responses, respectively. Note that there is no down step after the sixth response, although the fifth and the sixth responses are both correct. The reason is that the count was reset after the down step following the fifth response.

Note that without this resetting step the staircase procedure converges to lower values, at around 62% accuracy (code attached):