Supporting Text S1

The Neural Substrates of Social Influence on Decision Making

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Description of Individual Decision-Making Tasks

As mentioned in the main text, the experiment consisted of six two alternative forced choice tasks. The reward for a single trial in a task was a function of two variables: which of the two buttons ("A" or "B") the participant had most recently

pressed, and the fraction of the last twenty choices allocated to button "A." The functional forms of the tasks are shown in Figure S1. Two of the tasks, based on the "rising optimum" task [1], were designed to elicit suboptimal behavior. They featured a local reward maximum separated from a global maximum by a span of low reward; choice histories were initialized to the local maximum, thereby forcing participants to endure a period of low reward in order to discover the global maximum. The functions' curvature also encouraged adherence to the local maximum. The additional designations of "simple" and "complex" describe the complexity of the strategy required to remain at the global optimum: doing so for the "simple rising optimum" task required only that the participant select button "A" for every choice, while the "complex rising optimum" task required participants to maintain an allocation of 75% A.

Two more tasks were simply "mirrored" versions of these first two: while the first two tasks shown in Figure S1 had global optima at 100% and 75% A, the "mirrored" versions had optima at 0% and 25% A (these are not depicted in Figure S1). Rewards in the two remaining tasks were determined by Gaussian functions, and both had unique global maxima at 50% A. The first of these ("Diverging Gaussians") possessed an unstable equilibrium which pushed participants equally to either side of the maximum, while the second ("Converging Gaussians") produced rapid convergence on the maximum. The order of the tasks was randomized across groups, and the crossing of tasks and social conditions (a 6 x 4 design) was balanced across groups.