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The impact of social information on the dynamics of decision making within groups

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Abstract

To reduce uncertainty, individuals in groups can use personal and social information (i.e., information provided by others). Individuals are both emitters and receivers of social information and have to integrate personal and social information, giving rise to complex, poorly understood, collective dynamics. Here we applied evidence accumulation models (the drift-diffusion model) to group decision making to describe and understand these dynamics. We modelled the choice behavior as a process where evidence, in the form of sequentially arriving social information from other participants choices, is accumulated until a threshold is reached. Our results show that highly confident individuals start close to the threshold and thus respond fast. Such early responders affects the subsequent dynamics, whereby humans weighted social information as a linear function of the size of the majority for a particular option. Our results provide new insights into how social information impacts the dynamics of decision making within groups.