

# How leaders evolve

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Researchers have developed a mathematical model that explores how leaders and followers emerge in different circumstances and predicts the most likely personality types of those leaders.

Rufus A. Johnstone and Andrea Manica modeled a large population whose members formed groups and competed in a simple coordination game.

The authors assumed each member would favor a different course of action, and awarded payoffs to members who recruited the most followers and to groups that agreed on a joint decision.

Contrary to previous studies suggesting that information or resources enhance an individual's tendency to become a leader, the model revealed that temperament determines a person's inclination to lead or follow.

The authors suggest that leaders are often bold, extroverted, and inquisitive because leadership involves some level of risk-taking, and because individuals with these characteristics are more likely than others to embrace that risk and make decisions for a group.

The model also found that pairs of individuals are more productive [decision-makers](#) when one person takes the lead and the other person follows, while two leaders or two followers often culminate in a stalemate.

In a large group, one leader will typically emerge when arguments are

few.

But in a group plagued by conflict, many [leaders](#) will likely emerge as each leader tries to impose their views and opinions on their [followers](#), according to the authors.

The findings have been published this week in the [Proceedings of the National Academy of Sciences](#).

**More information:** "The evolution of personality differences in leadership," by Rufus A. Johnstone and Andrea Manica *Proceedings of the National Academy of Sciences* (2011).

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