

OUT OF THE BOX

PLAYING COLLECTIVE GAMES

Social groups are ubiquitous. Individuals benefit from social learning and cooperation, but also suffer from competition. Living in such groups requires coordinated action, resulting in collective behaviour.

WHY SHOULD I CARE?

Ever wondered how fireflies flash in sync or how millions of locusts march together? Collective behaviour may have some answers for you. We humans live in collectives too, physical and digital. Similar collective principles determine how networks of individuals transmit information and make group decisions. Understanding these principles better could help us shape our own world.

WHY GAMES?

What better way to learn about probability than from the roll of the dice? Help ant and bee colonies manage their collective dynamics or cooperate with your partner to navigate a digital escape room. This exhibition allows you to experience some principles of collective behaviour first-hand. Try to spot them while playing the games.

SOME IMPORTANT PRINCIPLES

SIMPLE RULES

Have you seen those dazzling, coordinated movements of bird flocks or fish schools with no clear leader or conductor orchestrating them? No, it is not telepathy, as originally suspected. Simple local rules of following or avoiding immediate neighbours can explain these complex movements. Play simple games and experience how behaviour changes with the environment and its obstacles.

FEEDBACK LOOPS

A hallmark of collective behaviour is feedback loops. One minute you see a lonesome ant discovering your candy jar, the next minute a whole trail of ants has formed. This is the power of positive feedback. When your candy is all gone, the ants quickly disappear too, by virtue of some negative feedback. Your actions affect other players and their actions affect you.

VARIABILITY

Different individuals contribute various skills to their group/swarm. Did you know, for example, that octopuses team up with fish to hunt? From insect colonies with different castes to diverse human teams, such groups can be more than the simple sum of their parts. Play with different players and experience various roles.

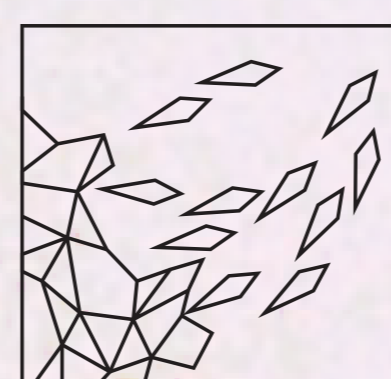
SOCIAL INFORMATION USE

Just like us, many animals use information that others provide. For example, birds learn how to open milk bottles and use tools by observing other birds. The social networks of such animals and their learning patterns can determine how information spreads through groups, just like how opinions spread through social media. Learn from other players and share your information with them – but beware of those who try to deceive you.

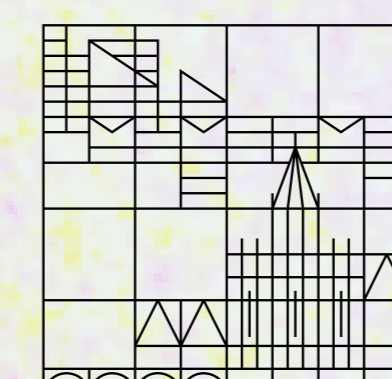
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