Adapting hierarchical social organisation by introducing fear into an agent architecture

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Agent and simulation cycles

A model of primate dominance.
Simple reactive rule of fear.
Extended the DomWorld model.
The original implementation is based on the MIRROR simulation framework.

Individual aggressive behaviour can contribute to the formation of groups and social rank adaptation in primate societies.

Agents are homogeneous and are only differentiated by their reactive behavioural rules.
The adaptation of ranks is dependent on the agent settings, as they influence the intensity and frequency of dominance interactions.

Parameter | Scope of valid values | Description
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Populaction Size | 10 to 100 | Total number of agents.
Aggression | Low (1.0) to High (1.5) | Intensity of an attack.
Attraction | Weak (0.0) to Strong (1.0) | Male interest on females.
Fear | Weak (0.0) to Strong (1.0) | Female assistance of males.
Cycles | From 1 to 1000 | Complete simulations per epoch.

Table 1 and 2: (left) Configurable parameters in the model, (right) Non-configurable agent parameters.

Although agents are able to execute different behavioural rules and update their individual internal states without a particular order, actions can only be triggered by reacting to information sensed locally.

References


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