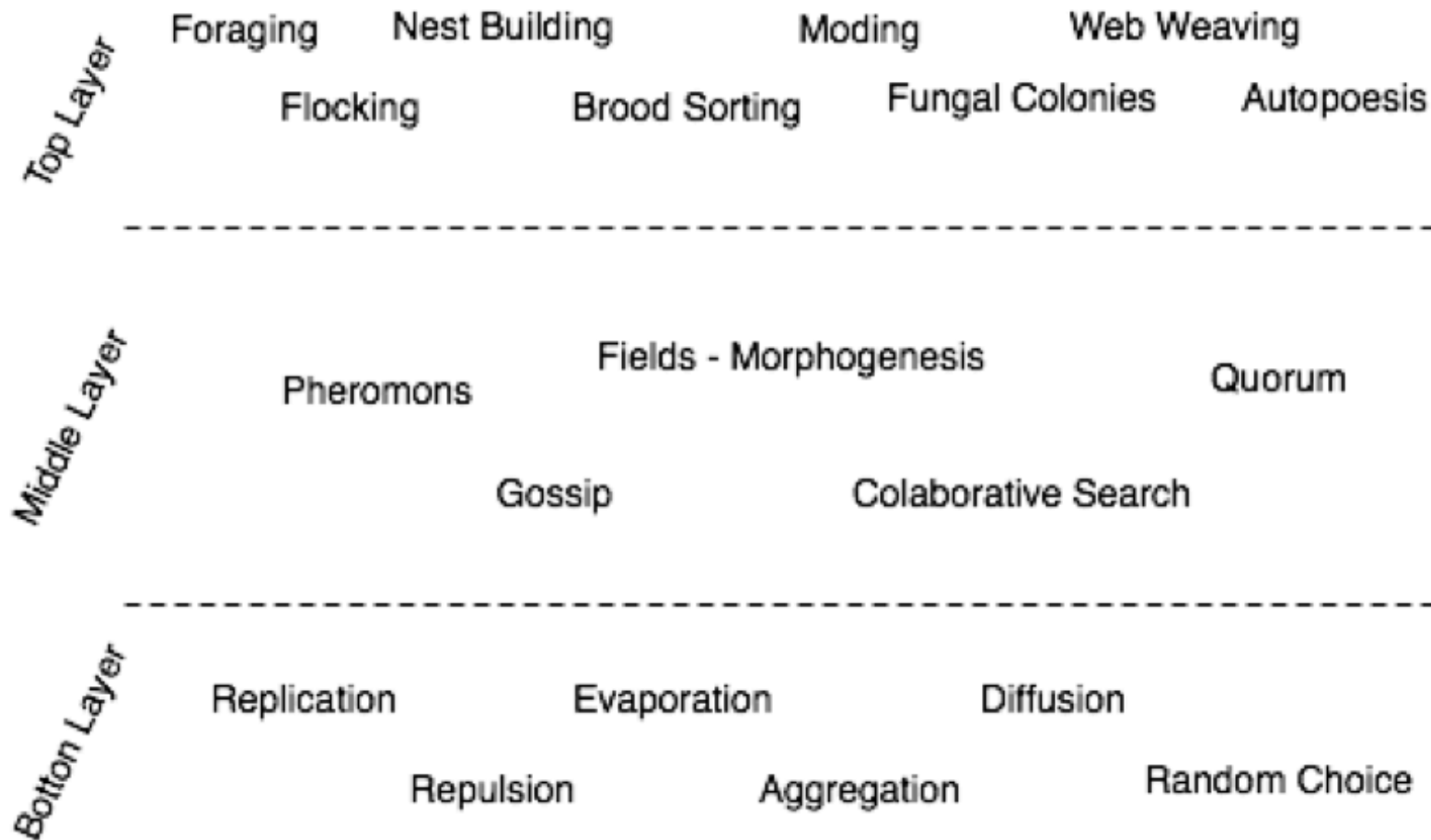


A Few Notes on:
“My Visit at UniGE”

Matteo Casadei



Self-Organizing Mechanisms



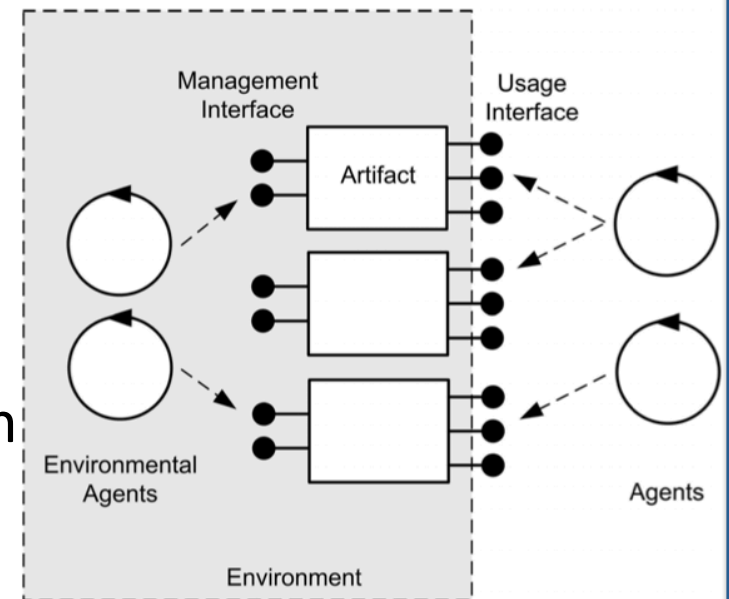
Possible Pattern Description

Name	The pattern's name.
Aliases	Alternative names used for the same pattern.
Problem	Which problem is solved by this pattern and situations where the pattern may be applied.
Solution Biological process that inspires the design pattern.	<u>The way the pattern can solve the problems.</u> Inspiration
Forces	Prerequisites for using the pattern and aspects of the problem that led the implementation including parameters (trade-offs).
Entities	Entities that participate in the pattern and their responsibilities.
Dynamics	How do the entities of the pattern collaborate to achieve the goal. Typical scenario describing the run-time behavior of the pattern.
Environment	Environment requirements to apply the pattern. Infrastructure needed.
Example	A simple and abstract example of the pattern usage.
Implementation/ Simulation	Hints of how the pattern could be implemented. Include parameters that must be tuned.
Known Uses	Examples of application where the pattern has been applied successfully.
Consequences	Effect on the overall system design.
Related Patterns	Reference to other patterns that solve similar problems, can be beneficially combine with this pattern or present conflicts with this pattern.

Geneva's Current Meta-Model

- Currently, Geneva is adopting a meta-model for pattern description, based on the A&A meta-model as proposed in [*Design Patterns for Self-Organizing Multiagent Systems, Gardelli et al., EEDAS 2007*]

- Artifacts:** passive, reactive entities (services and resources)
- Agents:**
 - User Agents:** actually exploiting artifacts' services
 - Environment Agents:** self-* adaptation of artifacts to cope with unpredictable environmental changes



Geneva's Meta-Model: Shortcomings

- Personal opinion: I agree on using this meta-model as a reference for undertaking self-organizing-pattern description
- However:
 - too much focus on multiagent systems
 - what about the foreseen SAPERE middleware model?
 - remember that everything in SAPERE is represented in terms of an LSA!

Activities of the Coming Month

1. Work on an article with Geneva, regarding definition of some low-level patterns (spreading/diffusion, evaporation and aggregation) and a mid-level one (gossip), **according to the A&A meta-model**
2. At the same time (with Sara):
 - 2a. work on a more general meta-model for self-organizing patterns, taking into account LSAs
 - 2b. try to shape some of the low-level patterns according to the ongoing meta-model
 - 2c. write a paper reporting the results of 1 and 2
 - Which patterns to describe?
 - Which conference to submit to?