

Final Conclusions

Artificial multicellularity is a huge research field and this book only slightly touches several first conceptual issues. It must be developed and implemented further within a large interdisciplinary framework. Pursuing it must be seen as an essential conceptual and technological breakthrough for achieving extended reliability, advanced adaptivity and artificial evolution. It is a main enabler of sustainable development for the next generation of collective robotics and adaptive autonomous systems.

As presented in this book, artificial organisms reflect many similarities with biological organisms. This, in turn, opens a way for many great ideas, like artificial sexuality or inspiration from “natural chemistry”, which may seem speculative on this moment, but are very promising in terms of their biological analogies. Since research projects should be focused in concrete targeted goals, many of these ideas will be not followed further until their implementation into real systems. Therefore, one of the goals of this book is to provide to the readers possible earliest look at envisaged concepts and approaches, before Occam's Razor will cut currently-not-feasible-ideas.

This book was not intended to give final answers, it is more intended to look for questions: what are plausible mechanisms of genetic diseases, does self-concept have a leading role in a long-term unbound evolution, are information principles more relevant than energetic principles, unbounded artificial evolution vs. human-designed self-organization. The list of these questions is long, we achieved at least one of our goals, when the reader starts to think about the same questions.