editingACHT
oikosymbiotic strategies

0_introduction
the concept of symbiosis, and for that particularly parasitism, has been used quite extensively in 20th century architecture, but mainly on an allegorical or symbolic level (essentially used for buildings that sit on top of or next to other, older buildings, complimenting or contrasting them in style or material).
this rather simplistic approach, however, fails to explore the intricate and multifaceted nature of various symbiotic strategies that one can find in other fields of research, such as biology.
this semester's edtingACHT will investigate into the various forms of symbiosis, that can be found in different natural environements, on different scales and sizes, and speculate on how these can be adapted and operationalized as meaningful architectural and urban placement and co-habitation strategies.

1_oikosymbiotic strategies:
after having studied various biological symbiotic relationships in natural environments, a valid oikosymbiotic strategy within the field of architecture and urbanism is developed that forms the starting point of the project.
these relationships can be of different nature: conceptual, spatial, typological, programmatic, infrastructural or energy based, but also constructive or structural.
Again, drawing from biology, oikosymbiotic strategies can be differentiated and developed according to different types and parameters:

_differentiation according to physical interaction:
exosymbiosis
endosymsyosis

_differentiation according to type of (biological) interaction:
mutualism
comensalism
parasitism
synnecrosis

_differentiation according to degree of dependency (and duration):
protocooperation
mutualism
eusymbiosis

2_microclimatic growth patterns
to develop valid growth strategies, that follow computable distribution logics, natural growth patterns of spores, fungi, bacteria, lichens and similar biological systems will be analyzed and systematized in respect to their internal logics and external microclimatic conditions (these miroclimatic conditions can be of different nature, for example climate, temperature, orientation etc, but also distribution and/or quality and quantity of existing host elements). these logics need to be adapted for architectural and urban development strategies, focusing on the question, what would constitute favourable microclimatic conditions for distribution and proliferation of the symbiotic agent in a specific architectural or urban context?

3_morphogenetic cityscapes
based on the specific type and nature of symbiosis and the individual growth and proliferation patterns chosen by each team earlier on, (proto)architectural symbiotic agents and elements are

developed that are able to cluster and swarm to build up field-like formations that start infiltrating the existing cityscape (field of existing hosts). in the process of ongoing symbiosis, the symbiotic agents as well as the hosts might evolve and undergo considerable changes, resulting in a changing morphogenetic cityscape.

4_method
it is the goal of this term's *editingACHT* to computationally derive novel occupational models. as perquisites you will need to pick a specific symbiotic model as well as a suitable site in vienna; whether that is an open field condition, an existing brown-field, voids in between buildings or the buildings themselves will depend on the symbiotic model chosen by your team. in any case the existing city (or specific parts thereof) will serve as hosts for the proposed symbiotic agents.
once you have discovered an architecturally meaningful analogy to the symbiotic model of your choosing, you will derive a computational model of the discovered processes. For this step you are required to use rhino's grasshopper's genetic algorithm engine (i.e. karamba or galapagos). it is the working hypothesis of this exercise that we can derive performatively sensible, yet typologically surprising results through the rigorous application of this method. areas of interest may encompass distributional logics (based on solar exposure, orientation or other internal or external qualities that can be found throughout a city fabric), structural optimization (by co-relating individual units in favour of volumetric zoning etc.), deduction of circulation patterns, programmatic distribution etc. etc.

5_schedule
the workshop will be divided into three consecutive tasks, each of which is to take roughly three weeks:

A_abstraction (october / november)
as a first step you will need to find a symbiotic process, that, once translated into architecture, still maintains its performative intelligence. remember that this is a course in an architecture, not in biology. this means that you need to find an architectural or urban relationship between different parts that exhibit symbiotic properties mentioned above. you should identify at least two key parameters, as those parameters must be broken down into abstract input in order to be effectively operationalized within the algorithm and some may prove to be too difficult to implement later on. therefore, we strongly suggest to rule out those that may well be of interest but will not serve the purpose of this exercise.

B_application (november / december)
after that you will focus on establishing a sophisticated computational setup, finalizing the input parameters and clarifying how you will feed it into a genetic algorithm, be it karamba or galapagos. You will need to find an effective way of assessing your exploratory design's performance in order to evaluate how well it depicts the discovered benefits of the underlying symbiotic model. adjusting the input parameters and/or starting hypothesis may well be necessary during this stage.

C_rationalization (december / 2nd week of february 2014)
the third part of the exercise will be dedicated to rationalizing your geometric output towards a credible architectural solution. we know there is not enough time to fully work out an architectural proposal, so bear in mind that a smart setup, interesting selection of input parameters or clever way to assess the performance of your design will be the basis for the evaluation of your project rather than the resulting geometry as a finished architectural piece.

(20121013 / RRN, JM / END)