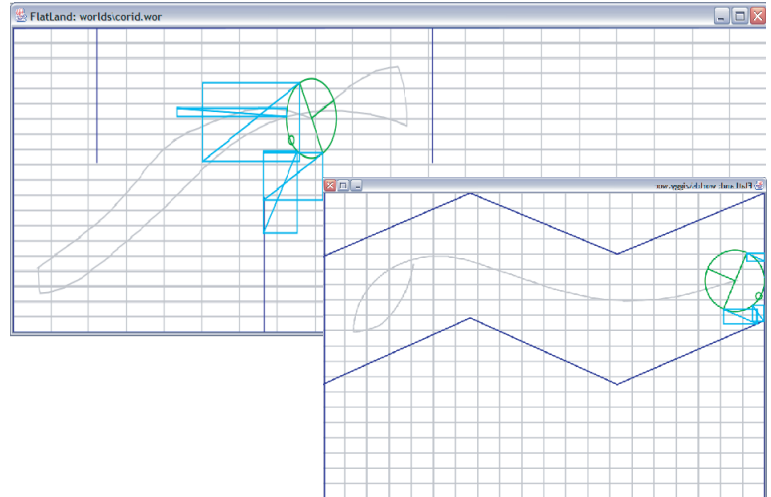


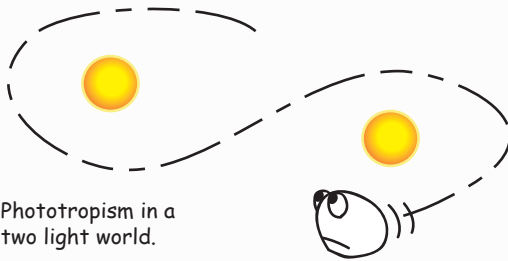
# The Experiments

Agents are trialled in a variety of simple task spaces ranging from object avoidance and phototaxis to more complex detour behaviour.

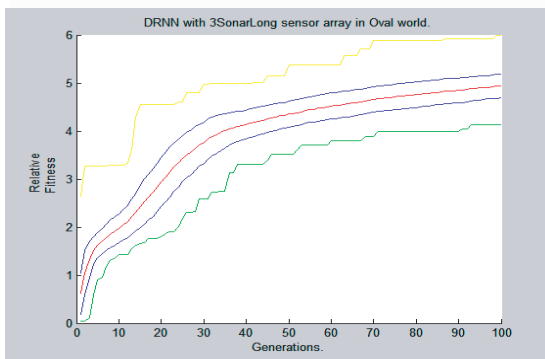
Agents with and without evolvable sensor arrays and sensory-motor profiles can be compared for evolvability.



A cyclic attractor:



Phototaxis in a two light world.



Evolvability is assessed in relation to:

- the number and range of possible attractors in behaviour-space
- the robustness of evolved behaviours to noise and other disturbances.
- the number of generations before competence emerges within a population.

This exploration is motivated by a number of connected theoretical questions:

Can one define a domain of plasticity or is the distinction too artificial?

Is the openness of natural evolution connected to total plasticity?

In what way must sensors, motors and controllers evolve to fit one another as well as their environment? Is this co-evolution?



Does additional plasticity increase evolvability or just increase the dimensions of the search space?

Can a domain of plasticity be analysed in respect of number and type of attractors supported?

What additional constraints might be necessary to facilitate evolution?

Do androids dream electric sheep?