Observations

# 02-02-2017 Notes

## Default Settings Optimization

It is my observation the following settings prove highly effective:

* -p 100
* -o 10
* -r .05

Heretofore, the above settings shall be the defaults.

## Sources of Improvement

One important change, which seems to have improved the outcome of these settings, is the use of the *convergeValue* Decider, which depends upon the convergence of a common value across the population, rather than a common genome.

Additionally, the “radioactivity” setting now operates on a bit-to-bit basis, rather than merely creating a single mutation in the genome per generation. This may be the greatest source of improvement. Previously, if two different, competitive genomes both possessed the same value, and if each differed by more than a single mutation, it was unlikely that either could mutate sufficiently to converge. Similarly, if one configuration rendered a good, but suboptimal result, if the optimal result required more than one mutation to reach, and if all intermediate mutations rendered an even worse result, the genome would never “evolve” to the preferable state. By allowing multiple mutations per generation, this issue is somewhat overcome.