Cool pour truc “paradoxal” : ++ si DP – ===> lie a ce pb d’honnete...

2. 6. Interpretation

The immediate outputs of the simulation are average (and individual) levels of gene values over time. If, as predicted, average value for the gene controlling self-sacrificial behavior stabilizes at a non-null value, and if the various parameters (and 'Honoring' genes) influence this according to our predictions, then we will have shown that biological motivations underlying self-sacrifice are a theoretical possibility. We would then study stability of the model itself over a certain range of parameters.

As detailed above, interpretation is however compounded by the current simplistic form of the model.

Visu 1: average values <> value for all actually… cf 2.3.

VISUALISATION : REM HEROES

Keeping other parameters at their typical values (see after), self-sacrifice is, unsurprisingly, shown to depend on ‘Admiration’ (relative to ‘ReproGainsThreshold’): when this parameter is too low (e.g. under 5 – tentatively), this gene’s value remains at 0 across the population; when the parameter is augmented, the equilibrium value of the gene grows with it – although it is quickly capped at 4-5 % (which, for a small population of 200, entails an average of 10 sacrifices per ‘year’ - which is far from negligible).

Full statistical analysis of this behavior has yet to be performed. The idea, in the following scenario, is to see if, in conditions where we would expect (alive) individuals to pay tribute to heroes on a scale comparable to the previous values of ‘Admiration’, self-sacrifice emerges as a stable strategy (as measured by gene value across the population, and as compared to results obtained in similar conditions for this base scenario).

It is anticipated that keeping ‘EraseNetwork’ at 0 and ‘Rounds’ and ‘NbInteractions’ relatively low is equivalent to re-initializing networks with large number of interactions – although this should be checked.

~~When and if self-sacrifice emerges, it we do not expect its probability to be high, for logical reasons (as gains in status decrease when there are too many perpetrators)~~ as well as reasons relating to previous simulations (we do not expect equilibrium values to exceed that of the corresponding “exogenous” situations).

Graphes: un peu con finalement, vu le cutoff…

= BINAIRE… => dur d’interpreter bcp

2. 5. Limits and possible refinements of the model

‘MaxOffer’ thus imposes a paradoxical arbitrary limit: if it is too low, we would not expect self-sacrifice to emerge, as honoring of heroes by patriots should not yield enough potential benefits for heroes’ children (see 2.1).

This is further motivation to explore a “differential costs” option, whereby dishonest signaling is assumed to be costlier than honest signaling (e.g. for the same type of reason, as non-patriots opportunity costs are higher, as they are engaged elsewhere / have other opportunities to invest in themselves…). This could allow for less straightforward results, as we would expect both signals to emerge above a certain threshold (for the ‘DishonestPremium’) and not under, without this threshold being immediately obvious.

However, we expect both treatments to be mathematically equivalent, as the poverty of our (expected) ability to modify final outcomes by varying parameter values derives from the poverty of the model itself. In a second-stage, the model could be refined:

- by allowing for more categories of patriotism, and the corresponding genes ;

- or, better yet, by allowing for continuous (or a large number of discrete values for) patriotism, and replacing genes by social learning of investment in honoring.