

## Supplementary material, document 3: Adding ruggedness to a landscape

( $\lambda = 0.01$ )  
6 May, 2016

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<sup>1</sup>In the plots with non-scaled axes, it is clearly visible how epistemic progress\* (figures 2,4,6) falls for social learners as a function of time. This is explained by the fact that as the simulation run progresses, an increasing number of initially significant patches fall below the desert threshold (100 in the current simulations). What drives eProg\* down especially for the population of social learners is that unlike populations with more individual explorers, a population of social learners leaves behind some isolated non-consumed patches, which then mainly determines the quantity eProg\*. Although eProg\* remains a useful measure of carefulness of search (see full explanation in document 4), this non-monotonicity reduces its usefulness as a general measure of epistemic success in the BC model.

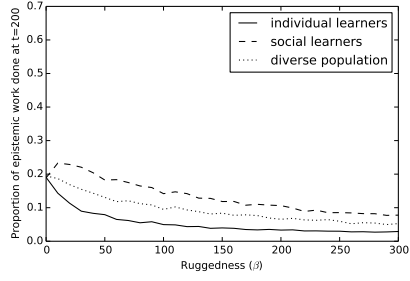


Figure 1: Epistemic work,  $t=200$

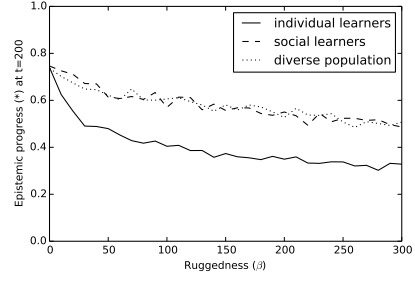


Figure 2: Epistemic progress\*,  $t=200$

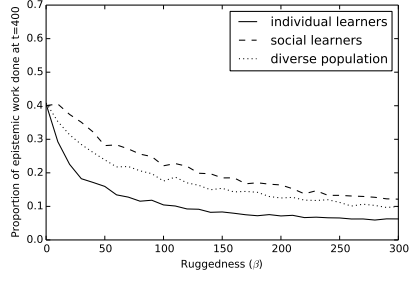


Figure 3: Epistemic work,  $t=400$

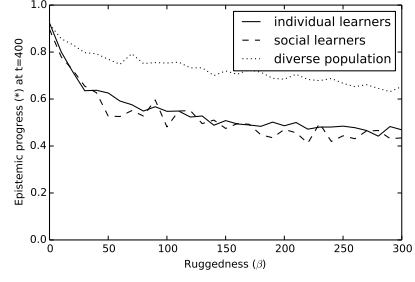


Figure 4: Epistemic progress\*,  $t=400$

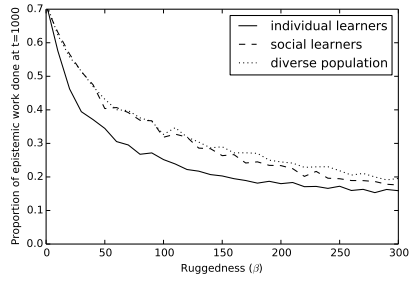


Figure 5: Epistemic work,  $t=1000$

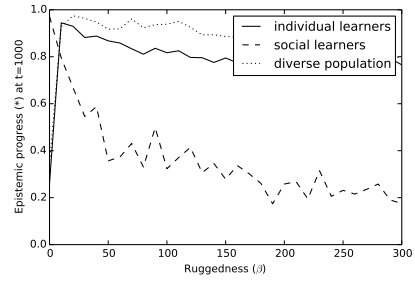


Figure 6: Epistemic progress\*,  $t=1000$