Problem Set for Module 5

Problem 1 (25 points).

In lecture, we discussed the "bourgeois" strategy for resolving conflict over a resources between two members of a hypothetical species:

	Hawk	Dove	Bourgeois
Hawk	-25	50	12.5
Dove	0	15	7.5
Bourgeois	-12.5	32.5	25

The numbers shown in the matrix are the reward to "Red". As noted in lecture, we are stipulating that the value of the resource is 50; the damage done by injury is -100; and the cost of a dove-dove display is -10. The bourgeois strategy is "Play hawk if you were at the resource first; play dove if the other animal was there first." Show how you can derive the red numbers in the Bourgeois row, and the red numbers in the Bourgeois column.

Problem 2. (25 points)

One example of a conflict between modern life and the "environment of evolutionary adaptation" (EEA) has to do with the social environment in which modern humans live. Hunter-gatherer bands (the arrangement of early humans and hominins) vary in the number of members, but generally they do not exceed 100 or so. With this in mind, read about "Dunbar's number" on the Web: in what ways do our modern social arrangements differ from those of the EEA?

Problem 3. (25 points)

Look up Piaget's "Three Mountain" task on the Web. How do the results of Piaget's experiment fit with our general discussion of the "other minds" issue in lecture?

Problem 4. (25 points)

Sketch Braitenberg vehicles that:

(a) Attack sources of light, but get agitated near (and eventually run away from) sources of sound.
(b) Stand ("reverently") in front of sources of sound, but attack each other head-on.