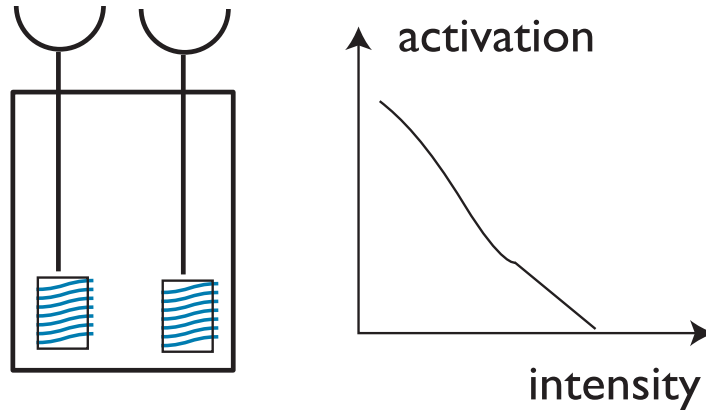**Exercise 1, October 9, 2014**

Consider a Braitenberg vehicle number 2, with two sensors, which are connected to the ipsilateral (same side) effector. Assume the sensor characteristic is monotonically *decreasing* while the motor characteristic is monotonically *increasing*.

1. Analyze the behavior in the presence of a single source of stimulation by making a drawing and arguing qualitatively. [Reproduce the logic discussed in the lecture.]

2. Question this logic by considering the case in which the vehicle drives very fast. What would make the vehicle drive fast ? [Think in terms of the sensory and motor characteristics.] If it drove so fast, that it couldn't turn in time before shooting beyond the target. What would happen? By implication, which implicit assumption was made in the lecture?

3. What would happen if the sensor characteristic has a zero crossing, e.g., at a positive level of the sensed physical intensity, activation is zero? [With the understanding, that negative activation going into the motor characteristic makes the motor turn backward.] Argue similarly in words, perhaps with a drawing to support the argument.

4. What would happen if there were two sources in the environment? Make a drawing of the sensed intensity and distinguish different cases.

5. What would it take to transform this into a more formal, mathematical analysis?