3.5 Braitenberg's Presentation of the Vehicles

Valentino Braitenberg's vehicles were constructed as thought experiments not intended for implementation with electronic components or in software. The vehicles had sensors directly connected to the motors as in the nervous system of living creatures. Some vehicles were designed with memory similar to a brain.

Figures 3.7a–b show robots that demonstrate Braitenberg's presentation. They have light sensors (the semicircles at the front of the robots) that are connected directly to the motors of the wheels. The more light detected, the faster each wheel will turn, as indicated by the + signs on the connections. If a strong light source is directly ahead of the robot, both sensors will return the same value and the robot will move rapidly forwards. Suppose now that the light source is off to the left. For the robot in Fig. 3.7a, the left wheel will turn rapidly and the right wheel will turn slowly. This results in the robot turning sharply right away from the light source. Braitenberg called this vehicle *coward*. For the robot in Fig. 3.7b, the right wheel turns rapidly and the left wheel turns slowly so the robot turns towards the light source, eventually crashing into it. This behavior is *aggressive*.

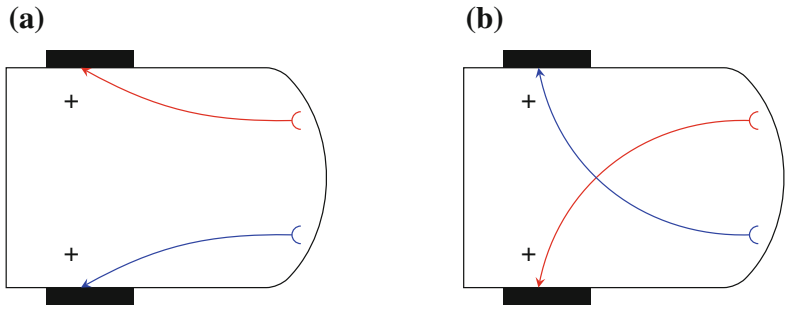

Fig. 3.7 **a** Coward vehicle **b** Aggressive vehicle

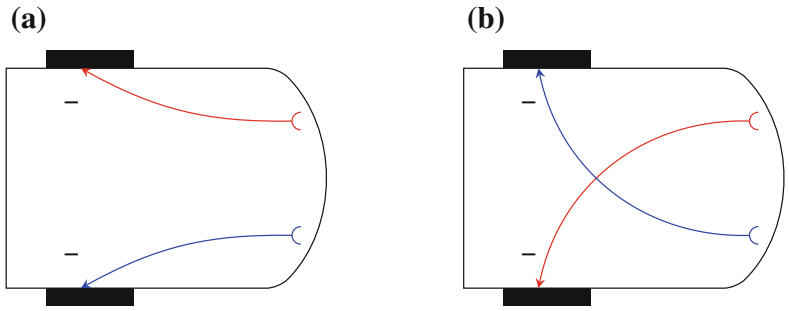

Fig. 3.8 **a** Loves vehicle **b** Explorer vehicle