Boundaries

**Numerous species of mammals, birds, reptiles, even some other fish, are much more aggressive than sharks, says Donald R. Nelson, a marine scientist at California State University in Long Beach. In other animals, he notes, aggressive behaviors are most obvious when the creatures are defending territories, mates, or offspring. *(Mark Wexler)***

**Brain cells communicate through 200 trillion cross connections (called synapses) that are not actual contacts, but spaces of less than a millionth of an inch (for no nerve cells ever actually touches another in intimate embrace). *(Susan Smith Jones, in Let’s Live magazine)***

**Don’t smother each other. No one can grow in the shade. (Leo Buscaglia)**

**Tell the jogger in your family to keep an eye out for buzzards. They attack joggers. Or they’ve done so in Switzerland. Twelve times in the last two years. Those Swiss joggers get too close to the nestlings, evidently. *(L. M. Boyd)***

**All dogs bite, a veterinarian told me. And added: The difference is how far each dog can be crowded before it bites, that’s all. *(L. M. Boyd)***

**The critical attack distance of a grizzly bear is from 100 to 200 feet. Beyond that, if the grizzly hears humans it moves off. If nearer, it can be dangerous. *(L. M. Boyd)***

**We could all live in peace together, if there could always be unlimited space between us. *(Ashleigh Brilliant, in Pot-Shots)***

**If a plant’s roots or leaves emit chemicals that prevent other plants from growing close by, that plant is “allelopathic.” Sunflowers, for example. And black walnut trees. And crabgrass. It’s not merely that they grab all the water nutrients. They actually spread their own poisons, sort of. *(L. M. Boyd)***

**In an attempt to get students to think seriously about their goals, I asked my adult-living class to complete a questionnaire. One question was: “How far apart would you like to have your children?” A student filled in, “About 300 miles.”(Phyllis Schaefer, in Reader’s Digest)**

**You can’t chase a rabbit beyond what it seems to be its own property line. Or so says a hunter of lengthy experience. (L. M. Boyd)**

**Robins have a territorial system that permits only one mating pair per acre of land. Predators prune themselves when they become too numerous. (Guy Murchie, in Old Farmer’s Almanac, 1992, p. 283)**

**Each grain of sand holds a film of water about itself by capillary attraction, and even the blows of heavy surf cannot cause one sand grain to rub against another. In this minuscule world, inconceivably minute beings swim through the liquid film around a grain of sand as fish would swim through the ocean covering the sphere of the earth. Among the fauna of the capillary water are single-celled animals, water mites, shrimplike crustacea, insects and the larvae of certain infinitely small worms – all living, dying, swimming, feeding, breathing and reproducing in a world so small that our human senses cannot grasp its scale. *(Rachel L. Carson, in Reader’s Digest))***

**Among spiders, only the tarantula stretches a tight web across the entry of its burrow, I’m told. *(L. M. Boyd)***

**John Dabiri says his goal is “to tap the inexhaustible supply of inspiration found in nature” in the name of innovation. At the moment, he’s applying a lot of his findings to renewable energy. Dabiri realized that one major problem on wind farms is interference between neighboring turbines. When placed close together, they funnel wind into each other, reducing energy output and increasing wear and tear. To avoid this, wind farms space turbines hundred or even thousands of feet apart. Dabiri found an analogous problem in the ocean. When fish move as a school, they push water against each other, potentially slowing the whole group. But they’ve found ways of moving together more efficiently and with less energy. Dabiri modeled their motion mathematically and used the results to develop software to define the optimal placement of wind turbines. He says his math makes it possible to squeeze more turbines onto a given plot of land and yield 10 times more energy. He started the company Scalable Wind Solutions to commercialize the software and plans to start selling it in the next few years. “He was the first person to think of” modeling wind farms on fish schools, says Alexander Smits, one of Dabiri’s engineering professors at Princeton. “It’s a game-changer.” *(Olga Kharif, in Bloomberg Businessweek magazine, April 9, 2012)***

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