"cow bacteria" or "pig bacteria" or "chicken bacteria." In terms of the microbial world, we humans along with the rest of the animal kingdom are part of one giant ecosystem. The same resistant bacteria that grow in the intestinal tract of a cow or pig can, and do, eventually end up in our bodies.

The Spread of E. coli*–Resistant Strains*

Predictably, the agriculture industry has insisted that this is not true, that resistant animal bacteria will not move into the human population. In response, Stuart Levy and a team of research scientists tried an experiment (described in his book *The Antibiotic Paradox*). What they found not only confirmed the movement from farm animal to human but showed even more serious long-term results than expected.

Levy and his team took six groups of chickens and placed them 50 to a cage. Four cages were in a barn; two were just outside. Half the chickens received food containing subtherapeutic doses of oxytetracycline. The feces of all the chickens as well as of the farm family living nearby and farm families in the neighborhood were examined weekly. Within 24 to 36 hours after the chickens had eaten the first batch of antibiotic-containing food, the feces of the dosed chickens showed *E. coli*–resistant bacteria. Soon the undosed chickens also showed *E. coli* resistant to tetracycline. But even more remarkable, by the end of 3 months the *E. coli* of *all* chickens was also resistant to ampicillin, streptomycin, and sulfanamides *even though they had never been fed those drugs.* None of those drugs had been used by anyone in contact with the chickens. Still more startling: At the end of 5 months, the feces of the nearby farm family (who had had no contact with the chickens) contained *E. coli* resistant to tetracycline. By the sixth month, their *E. coli* were also resistant to five other antibiotics. At this point the study ended, noting that none of the families in the neighborhood had any incidence of *E. coli* resistance. However, in a similar but longer study in Germany, it was found that this resistance did move into the surrounding community, taking a little over 2 years.

What is more troubling than this, however, is that *E. coli*, a benign and important symbiotic bacteria found in the gastrointestinal tract of humans and most animals, has been teaching pathogenic bacteria how to resist antibiotics. Even more grim, pathogenic bacteria have been