

## Freeloading family members no different from a disease

AN evolutionary study into the behaviour of bacteria is helping to explain why some relatives are kinder than others.

The study at Edinburgh University's Institute of Evolutionary Biology has been looking at the behaviour of the disease-causing bacteria, *Pseudomonas aeruginosa*.

The team has been studying the way the bacteria co-operates and competes in different environments and they have found some startling results.

Bacteria cloned from the same culture, will co-operate to attain reserves of iron ions in the environment, which can be used by bacteria to bump up their own reserves.

As with many families there are always a few freeloaders who are content to sit back and scavenge what the other bacteria bring in, but the real discovery was that the success

this co-operation brings also creates competition.

The study revealed that as more bacteria competed for less resources, the amount of co-operation decreased.

Dr Stuart West, one of the team taking part in the study, said the behaviour they were studying had been found in animals such as birds and insects.

"The reason we carry out these studies with micro-organisms is because it is possible to do an evolutionary study, to see how things change over 50 generations or so," he said.

"This is something you just can't do with another species. We know that ants and other animals and insects work together in family units and now we are seeing the same behaviour in bacteria."

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