

## Why Some Islanders Build Better Crab Traps

By MATT RIDLEY

An odd thing about people, compared with other animals, is that the more of us there are, the more we thrive. World population has doubled in my lifetime, but the world's income has octupled. The richest places on Earth are among the most densely populated.

By contrast, it's a fair bet that if you took a few million rabbits and let them loose on Manhattan island, they would starve, fight, sicken and generally peter out. Whether you like it or not, whether you think it can continue forever or not, you cannot deny that when people come together in dense swarms, they often get richer.

In this fact lies a vital clue to the nature of the human animal, one that has until recently been overlooked: namely, that what explains the sudden success of the human species over the past 200,000 years is not some breakthrough in individual ability, but rather the cumulative effects of collective enterprise, achieved through trade. A new study of fishing tackle in the South Pacific provides intriguing support for this notion.

Two anthropologists, Michelle Kline and Rob Boyd, collected information on the "marine foraging technology" used by native people in 10 different groups of Pacific islands at the time of Western contact. They assigned scores not only for the number of tools but also for their complexity. A stick for prying clams from the reef, for example, counted as one techno-unit, whereas a bamboo crab trap with a baited lever counted as 16, because it comprised 16 working parts, each a technology in its own right.

What they found was that the bigger the population, the more varied and more complex the tool kit was. Hawaii, with 275,000 people at the time of Western contact, had seven times the number and twice the complexity of fishing tools as tiny Malekula, with 1,100 people.

But it's not just the size of the population on the island group that matters, but the size of the population it was in contact with. Some small populations with lots of long-distance trading contacts had disproportionately sophisticated tool kits, whereas some large but isolated populations had simple tool

kits. The well-connected Micronesian island group of Yap had 43 tools, with a mean of five techno-units per tool, while the remote Santa Cruz group in the Solomon Islands, despite having almost as large a population, had just 24 tools and four techno-units.

Mr. Boyd and his colleague Joe Henrich think that cultural change happens when one person learns a specialized skill and teaches it to others. But if others are poor learners or the teacher dies young, there is a tendency for skills to fade, creating a "treadmill of cultural loss," especially in small and isolated societies. Tasmania, for example, suffered a progressive simplification of its technology after its people were isolated by rising sea levels 10,000 years ago.

This tendency is counteracted by the sporadic innovation of expert specialists. Their ideas, embodied in technology, spread by trade and imitation. The greater the population and the connectedness between populations, the greater the pool of innovators to draw upon.

Archeologists suggest that the ephemeral appearances of fancy tool kits in parts of southern Africa as far back as 80,000 years ago does not indicate sudden outbreaks of intelligence, forethought, language, imagination or anything else within the skull, but simply has a demographic cause: more people, more skills.

Technology is more than just a barometer of human collaboration. It is the embodiment of human collective intelligence. Most of the technologies we use, as the economist Friedrich Hayek first observed, are things that nobody knows how to make from scratch. Humans have transcended the limits of their own brain power by combining their brains into networks.

Thanks to the Internet, the islands of humanity are now connected as never before, with only a few remote atolls like North Korea and Burma still holding out. So we can draw upon the inventiveness of a network of more than six billion people.

—Matt Ridley's books include "The Rational Optimist" and "Francis Crick." His column explores the science of human nature and its implications.