

The Social Secret That Humans Share With Ants

Building giant communities of strangers requires 'markers' that let members know who does and doesn't belong.

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A quick way to understand how humans are different from most other mammals that live in societies is to observe what happens when one of us enters a crowded coffee shop: basically, nothing. No random chimpanzee could stumble across a crowd of unfamiliar chimps without reacting in fear or setting off a killing frenzy. People, by contrast, are fundamentally more comfortable with strangers. We had to be, for our planet-dominating societies to expand into populations in the tens and hundreds of millions.

Schools of fish, herds of bison and flocks of birds can reach enormous numbers, but they don't have set memberships or stick together through generations. Almost all the vertebrate species that live in stable, well-defined groups depend on each individual being able to recognize every other member. Since the population of such societies is limited by the memory capacity of their members, it usually maxes out at a few dozen. As conservationist George Schaller observed about lionesses, who belong to prides that peak at about 20, "No matter how widely females are scattered or how frequently they meet each of the other members, they still constitute a closed social unit which strange lionesses are not permitted to join."

Humans have the capacity to live in societies where many individuals don't know one another. How this acceptance of strangers became possible is a neglected part of our evolutionary story. It started when our ancestors began to signal who belonged through the use of what I call "markers," signs that for many societies came to include gestures, rituals, styles of dress and dialects. Bound together by markers, even the simplest hunter-gatherer societies of the past achieved populations of a thousand or more.

Social insects such as ants and termites share this capacity to use markers to define group boundaries. For them, a scent serves as the equivalent of a national emblem. As long as an ant smells right, her comrades accept her as one of their own. With that basic marker, mere insects, like mighty humans, transcend the constraint of forming societies on the basis of first-hand experience of each other.

Supercolonies of ants might seem implausible: How could millions of insects, across thousands of square miles, form a single colony, as with the invasive Argentine ant that has taken over much of southern California? But the same conundrum would present itself to a Martian who visited the Earth 20,000 years ago, when humans gathered in small tribes, and returned now to discover nations such as China and India, over a billion strong. As long as members maintain a sufficiently stable identity and agree on what markers signal membership, societies of humans or ants can grow with no cap on their size.



Not all human markers are as simple as those of insects; some societies require members to learn intricate rites. But we absorb many basic cues subconsciously. Abigail Marsh, a social psychologist at Georgetown University, found that Americans, for instance, are surprisingly successful at distinguishing their compatriots from Australians by how they walk, wave a hand or smile—even if they are unable to explain how they do it. Research from a number of laboratories makes clear that, when it comes to the human groups that we see as most vital, the categorization of people and their markers—and the positive or negative feelings and biases associated with them—is triggered within milliseconds of an encounter.

The change from members of a society all needing to know one another to societies allowing anonymity could have begun simply. At first our ancestors may have used a vocalization when approaching one another to avoid being mistaken for a possibly dangerous foreigner.

Chimpanzees come close to employing sounds in this way: They learn a 'pant hoot' from one another, a scream that differs from one community to the next and allows them to keep track of their own group and nonmembers at a distance. Andrew Marshall, now an anthropology professor at the University of Michigan, documented one male who failed to correctly pronounce the pant hoot of his community, housed in a zoo. The other apes refused to let him eat with them and in time drove him into a moat, where he drowned.

One hypothesis is that early humans reacted to such defunct offshoots of the hominid family tree as Neanderthals, whose weak chins, projecting faces, sloping foreheads and other anomalies marked them as distinct. Our response to foreigners that weren't human eventually transferred to different societies of our own, creating the illusion that the tribe from the next valley truly was alien.

Our markers have grown far beyond adornments and behavioral ticks to include diet, beliefs and other complex elements of distinctive cultures. No matter how trivial or absurd some of them might seem to outsiders, they can make it

easy to unmask someone who doesn't belong. When anthropologist Polly Wiessner first studied Africa's Bushmen hunter-gatherers in the 1970s, she found that just a trace fragment recognized as foreign, such as an unfamiliar arrowhead embedded in the ground, induced anxiety because the conduct of its maker couldn't be predicted.

Modern life is distinguished by the astonishing volume and diversity of the markers that unite and divide us, the breakneck speed at which they change, and our brains' elastic ability to sort through them unconsciously. Unlike our earliest ancestors—or ants—we are increasingly able to choose markers deliberately, to create a myriad of social connections within or between

societies. To win approval (or to draw disapproval), we wear a MAGA cap or a pink pussycat hat, use a hashtag or type of slang, adopt a new gesture or hairstyle.

Combinations of markers have become more complex, too, as people travel and move from one society to another.

Immigrants are expected to adopt markers such as a national anthem or social mores, but they invariably retain old ones—such as wearing the hijab or speaking Russian—that may cause friction in their new homes.

Through it all, the wonder is that our societies continue to cohere as well as they do. Sharing ideas and images over the internet has distributed an expanding set of markers across the world, but it's not so different, in the end, from the effects of trade on early human societies, which remained distinct. Then as now, markers have been a way for humans to maintain order and boundaries even in the midst of rapid social change and growth.

This essay is adapted from Dr. Moffett's new book, "The Human Swarm: How Our Societies Arise, Thrive and Fall" (Basic Books). He is a research associate in entomology at the National Museum of Natural History and a visiting scholar in human evolutionary biology at Harvard University.