

Tracing the path of pygmies' shared knowledge of medicinal plants

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A BaYaka hunter-gatherer woman cuts the leaves of wild plant koko (*Gnetum* sp.) to be cooked with meat. Credit: © Gul Deniz Salali

When members of the BaYaka Pygmies living in the northern Republic of Congo get sick, they don't just go to the doctor for a prescription.

Instead, they rely on their shared knowledge of medicinal plants to help them get well. Now, researchers reporting in the Cell Press journal *Current Biology* on September 8 have examined shared uses of those plants to understand how Pygmies have passed their extensive plant knowledge along from one person to the next.

The findings show the important role of marital bonds in passing information to otherwise distant families. There were some surprises, too.

"I wasn't expecting that plant uses would be so diverse," says Gul Deniz Salali ([@DenizSalali](#)) of University College London. She hadn't expected to find that plants would play an important role in executing [social norms](#), either. "But many Pygmies told me that they used particular plants to detect and punish cheaters."

Salali was interested in exploring how hunter-gatherers accumulated the vast repertoire of plant uses that have helped them to survive in tropical rainforests. To find out, she and her colleagues examined the reported co-occurrence of plant uses between pairs of BaYaka Pygmy individuals based on extensively conducted interviews. Their study included reported uses of 33 different plants by 219 individuals living in four camps.

"We found that long-term pair bonds between men and women allowed otherwise distant families to combine information on medicinal uses of plants," Salali says. "Living in multi-family camps, on the other hand, enabled Pygmies to exchange and accumulate plant knowledge related to cooperative foraging and social beliefs."



This photo shows the bark of *Entandrophragma cylindricum*, grated and put into a cone-shaped leaf to be used as medicine by BaYaka hunter-gatherers of Congo-Brazzaville. The BaYaka often use leaves as a container to squeeze the juice of a grated medicinal bark as eye or nose drops. Credit: © Gul Deniz Salali

The most commonly reported medicinal uses of plants were for treating digestive and respiratory disorders. The BaYaka also use some plants for collecting caterpillars or honey and as a poison for killing monkeys or fish. Other plants were used to regulate social life, including matters concerning lying or sexual taboos.

As an example, Salali says, some Pygmies use the juice extracted from a particular type of tree bark to detect and punish cheaters. "If someone cheated their partner, camp members would squeeze the poisonous juice

into the person's eyes which could affect his or her vision. If his or her vision was affected, then people thought the person was guilty. I found that the knowledge on this type of plant use was widely shared among the campmates."

Knowledge of medicinal plants is mainly shared between spouses and other relatives, they found. But plant uses associated with foraging and social norms were often shared more widely among campmates, regardless of relatedness, playing an important role in camp-wide activities that require cooperation.



This photograph shows BaYaka hunter-gatherer women foraging for *Treculia africana* in the Northern rainforests of Congo-Brazzaville. The BaYaka take the seeds of the *Treculia africana* to later roast and consume as peanuts. Credit: © Gul Deniz Salali

The researchers also found that BaYaka mothers who used more [plants](#) for treating certain diseases had healthier children.

Salali says her next step is to compare plant knowledge and use in hunter-gatherers living in varying proximity to market towns in Congo. "I have lived in some Pygmy camps that were located in the forest, and some larger ones that were located in a logging town," she says. "I am interested in exploring the biological and cultural adaptations of groups in transition from a nomadic hunter-gatherer lifestyle to a more sedentary farming way of life."

More information: *Current Biology*, Salali et al.: "Knowledge-Sharing Networks in Hunter-Gatherers and the Evolution of Cumulative Culture" [www.cell.com/current-biology/f ... 0960-9822\(16\)30766-7](http://www.cell.com/current-biology/fulltext/S0960-9822(16)30766-7) , DOI: [10.1016/j.cub.2016.07.015](https://doi.org/10.1016/j.cub.2016.07.015)

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