Raising a child doesn't take a village, research shows

September 9 2011, By Diane Swanbrow

It doesn't take a village to raise a child after all, according to University of Michigan research.

"In the African villages that I study in Mali, children fare as well in nuclear families as they do in extended families," said U-M researcher Beverly Strassmann, professor of anthropology and faculty associate at the U-M Institute for Social Research (ISR). "There's a naïve belief that villages raise children communally, when in reality children are raised by their own families and their survival depends critically on the survival of their mothers."

Strassmann's recently published studies provide the first empirical data on two theoretical pillars of the belief that it takes a village to raise a child. One of these is the grandmother hypothesis—the idea that a child is more likely to survive if a grandmother is nearby.

The other is cooperative breeding theory, based on animal behavior studies that have shown that in a wide variety of birds, including scrub jays, and many mammals, such as the mongoose, adults may delay their own reproduction to help raise the offspring of others.

"Some researchers have suggested that humans may also be a cooperatively breeding species," said Strassmann, who views human behavior from the perspective of evolutionary biology. "But the evidence I found shows that this is not always the case and there can be quite a lot of competition and coercion within families."

In a study published this summer in the *Proceedings of the National Academy of Sciences*, Strassmann analyzed data on child survival in various family structures from her ongoing, 25-year study of the Dogon people of Mali, West Africa, a traditional, agricultural society in which resources are scarce and mortality is high. Like many human groups in the past, Dogon society is patrilineal, with a tight-knit web of kinship established through fathers. The Dogon practice polygyny and do not use contraception; Dogon women give birth to 9 children, on average, over their lifetimes.

Strassmann's study is the only research on the subject to date that is both prospective in nature and that controls for confounding variables, such as family wealth and family structure, that could affect child survival.

In the 1,700 Dogon children she followed, Strassmann found that children were over four times more likely to die by age 5 if their mothers were dead.

"In the Dogon, it is mothers alone who are critical for getting children past the early-life bottleneck in survival," Strassmann said. "Adding an extra adult to the family did not improve a child's survival. Although it's important to note that these findings are about child survival up to age 5, they don't speak to the value of having grandparents later on.

"Children were 52 percent less likely to die if their paternal grandparents were dead. Why? Because in a patrilineal society, the paternal grandparents are likely to live with the child, competing for scarce resources."

In another study, published this summer in Human Nature, Strassmann and ISR researcher Wendy Garrard further investigated the validity of the grandmother hypothesis. This study involved a meta-analysis of published studies done over several centuries in 17 patrilineal societies in

Africa, Asia, Europe and North America.

"Our analysis showed that the grandparents who actually lived with their grandchildren did not have a beneficial effect on the grandchildren's survival," Strassmann said. "Grandparents who did not live with the grandchildren sometimes did have a positive effect because they were not competing for scarce resources.

"Cooperative breeding is not the universal, evolved pattern. Instead there is huge diversity in the array of successful family systems in humans. For example, in the U.S., there are a huge proportion of nuclear families and single moms. Certainly many children of single mothers not only survive but thrive. Look at Bill Clinton and Barack Obama.

"Cooperative breeding does help to understand 19th century European societies, for example, in Ireland, where marriage was postponed to the late 20s or even 30s due to the scarcity of farms to inherit. In these societies, celibate individuals often worked on the farms of siblings as helpers and can be compared to cooperatively breeding birds that delay reproduction and act as helpers at their parents' nest when the habitat is saturated and all nest sites are taken. However, cooperative breeding does not fit many other societies, such as the one I study in Africa."

In her study of the Dogon, Strassmann found that children's risk of death is higher in polygynous than in monogamous families. This reflects the hazard of living with unrelated females whose own children are competing with the children of co-wives for limited resources.

Supporting this finding, Strassmann cites "Hamilton's Rule," established by British evolutionary biologist W.D. Hamilton in the 1960s. It is the first formal, mathematical description of kin selection theory, the idea that the degree to which we are willing to invest our resources in another person depends, in part, on the degree of genetic kinship we share with

them.

But kinship cuts both ways, according to Strassmann.

"Our results also suggest that kin competition is an important aspect of human family systems," she said. "Genetic conflicts of interest occur even within the family. This competition starts before birth, with maternal genes allocating resources strategically between present and future offspring. The competition extends throughout childhood with sibling rivalry.

"At reproductive maturity, kin compete for the resources needed for mating and parental effort. And finally, in old age, net producers eventually become net consumers who compete with other family members for food and shelter.

"The grandmother hypothesis does not take into account that grandmothers may need help themselves, not just among the groups like the Dogon but in societies like our own."

Provided by University of Michigan

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