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New knowledge in the sciences and the humanities

Native Tongues

WE ALL SPEAK THE SAME LANGUAGE

As languages go, English and Mohawk couldn't be much more different. A single word in Mohawk—*washawtya'tawitsherahetlwhta'se*; for example—can mean an entire sentence—"He made the thing that you put on your body ugly for her"—in English. But behind the obvious differences lie subtle similarities that support

a linguistic theory long held but never proved: Children are born with an innate knowledge of language.

Mark Baker, a professor of linguistics at Rutgers-New Brunswick, uses the analogy of a computer to help explain: "It's the difference between a computer with nothing on its hard drive and one that already has a word-processing program, a spreadsheet, and other software."

Many linguists, including Noam Chomsky, believe that children are "preprogrammed" to understand language because all children learn all languages with relative ease, without explicit training, and regardless of differences in intelligence. "This theory implies, however, that all languages are basically the same," says Baker. "But languages are simply not all the same, as you can easily prove to yourself by trying to find your way around in some foreign village with nothing but a relevant bilingual dictionary."

Baker attempted to solve the puzzle by studying the grammatical structures of English and Mohawk, a language spoken by some members of the Iroquois nation of upstate New York. Compared with English,

Mohawk words can be extremely long and complex, while the language's sentence structure is simple, loose, and fluid. In Mohawk, any arrangement of words within a sentence—"Baby ate meat" or "Baby meat ate"—is as fine as any other—whereas in English, specific rules control the placement of words in a sentence. But when Baker examined the basic linguistic principles governing the construction of sentence structure in Mohawk and English, he found that they were nearly identical in both languages.

Baker, who presented his research at the annual meeting of the American Association for the Advancement of Science, believes his findings indicate that there is a set of linguistic principles universal to all languages. Says Baker: "The shared principles are part of an in-born, innate endowment that is common to all normal human beings."

Marriage Prospects

COHABITATION LEADS TO DIVORCE AND ABUSE

Joe and Judy—like more than half the couples who marry in the United States—decided to live together before they tied the knot. Neither came from a broken home, but they both knew people who did, and they knew what the pain was like. Cohabiting would help them gauge their compatibility, they reasoned, and since they spent most weekends together anyway, the arrangement would save on expenses like rent, groceries, and utilities. It seemed to make sense in every way.

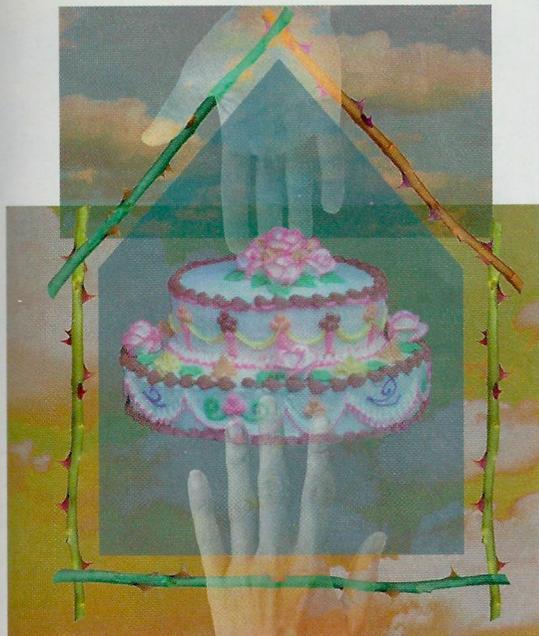
But by choosing to live together, Joe and Judy diminished their chance of a lasting relationship, says a new report by the National Marriage Project, a privately funded research enterprise at Rutgers. The report, "Should We Live Together? What Young Adults Need to Know About Cohabitation Before Marriage," also warns that children living in cohabiting unions are at a higher risk of sexual abuse and physical violence.

"Living together before marriage seems like a harmless or even a progressive family trend until you look at the evidence," says David Popenoe, a professor of sociology at Rutgers-New Brunswick and coauthor of the report. "The findings are real-



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"Living together before marriage seems like a harmless or even a progressive family trend until you look at the evidence.)"



ly quite surprising, and they should be carefully considered by all young Americans."

Popenoe once counted himself among the researchers who minimized similar findings; after all, his daughters both have successful marriages after first living with their partners. He also figured that people who live together include a large percentage of unconventional, free-spirited types more likely to get divorced anyway. But he changed his mind after looking closely at dozens of studies indicating that couples who lived together before marriage are more likely to see their marriages dissolve. He points out that no evidence exists that supports the notion that living together will help couples better sustain a relationship once they're married.

Last year, 4 million couples in the United States cohabitated, up from less than half a million in 1960. The report acknowledges that couples will continue to live together before marriage, but it makes the following suggestions: Consider the move carefully, do not take serial partners, limit cohabitation to the shortest possible period, and never cohabitate when children are involved.

Says Popenoe: "The longer you cohabitate, the more tolerant you are of divorce. ...Then you're used to living in a low-commitment relationship, it's hard to shift that kind of mental pattern."

Meat Eaters

DIET OFFERS CLUES TO MAN'S EVOLUTION

We really are what we eat, says Rutgers anilropologist Matt Sponheimer—then some of the best clues to man's evolution can be found by studying his diet. Scientists have theorized that our earliest known ancestor, *Austmlopithecus africanus*, ate mostly fruits and leaves and lived in the protection of heav-

ily wooded areas. But a recent study-based on a new method of analyzing tooth enamel-suggests that prehuman hominids also ate small animals and insects and ventured into open spaces to find nourishment.

The findings were published in the journal *Science* by Sponheimer, a Bevier Fellow in anthropology at Rutgers-New Brunswick, and Julia A. Lee-Thorp of the University of Cape Town in South Africa. The pair examined two forms of carbon preserved in tooth enamel from four 3-million-year-old *A. afi7canus* individuals unearthed in 1995. For comparison, they also analyzed tooth enamel from other animal fossils found at the

same site near Johannesburg. "Curators of these fossils were understandably reluctant to allow any type of destructive analysis," says Sponheimer. "Now we can analyze fossils using such small amounts that there is virtually no visible damage to them."

A. afi-icanus, they found, consumed large amounts of foods rich in carbon-13, which includes grass-eating insects, small animals like hyraxes, and the young of grazing animals like antelopes. Since this high-energy, high-nutrient diet is similar to that of the later, and bigger-brained, *Homo* species, the long-held theory that such a diet was necessary for *Homo*'s "metabolically expensive" brain may be false. Indeed, the primary dietary difference between the two may not have been the quality of their food but their manner of procuring it.

Sponheimer speculates that *A. africanus*, which was about the size of a chimpanzee but had a slightly larger brain, killed small game with rocks or used twigs to gather insects, a technique observed today among chimps. "Using stone tools, early *Homo* may have been able to butcher and consume larger animals than *A. afi-icanus* could," says Sponheimer. "Moreover, by cracking the long bones of large animals with stone tools, *Homo* had access to their energy-rich marrow, a delicacy that may have eluded its *aFicanus* forebears." —Bill Lavin

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