Kids, Creoles, and the Coconuts
By David Berreby

The motorboat pulled away from the beach not long after dawn. Derek Bickerton stood on the pale pink sand, a shopping bag beside him packed with a blanket, a camera, a water bottle, and a loaf of bread. Through the clear blue-green shallows he could see neon flashes of color as tropical fish glided along the reef. Behind him lay a grove of coconut palms and a mangrove swamp. He was now completely alone, some 300 miles due east of the Philippines. It was June 1978.

He had a day and a half in which to establish that the little island of Ngemelis was safe for some two dozen people to inhabit. If all went well, they would be arriving in a few months. "I nearly got washed out over the reef in a riptide, but apart from that it was rather fun," Bickerton recalls now, amid the books and papers of his tiny office at the University of Hawaii. "It was an ideal place, really."

That was good news, because Bickerton planned to pay six young families to live on Ngemelis for a year. While isolated on the island they would build housing, dig a well, grow coconuts, and get on with the business of raising their small children. There would be only one catch: each family would speak a different language. To communicate they would have to use a simple vocabulary of 200 easily pronounced words that Bickerton, a professor of linguistics, had made up. The children would learn their parents' language in the normal way; but as they played with one another, he expected, they would build on the artificial vocabulary to create a form of speech that wasn't any one family's tongue but a new one they could all understand. In other words, while the parents grew coconuts, the children would grow a language.

The idea for such an experiment is an ancient one, Bickerton points out. In the seventh century B.C., according to Herodotus, the Egyptian pharaoh Psamtik I ordered two newborns to be raised in total silence "to hear what tongue they would utter first." (Their babbling sounded like Phrygian, the Egyptians concluded.) Similar experiments were tried by other curious tyrants, including Frederick II of Sicily, James IV of Scotland, and Akbar the Great, the Mogul emperor of India from 1556 to 1605. Akbar quarantined a houseful of newborns with "tongue-tied nurses" for several years to prove his notion that children had to hear people speak in order to master language themselves. After his little victims all turned out mute, Akbar proclaimed that anyone who could still disagree with him had "hamstrung the camel of the Why and Wherefore." Mogul science prudently let the matter rest there.

Today many linguists believe Psamtik and Akbar had hold of separate pieces of the truth. As the Mogul emperor suspected, children can't learn to speak properly unless they're exposed to a language at a very young age. On the other hand, when they're exposed to any tongue whatever, they pick up the lingo with remarkable ease, considering that language is a system so complex that not even a linguist can explain all its rules. As the

pharaoh recognized, this knack, common to all children, suggests that some aspect of language--if not its rules, at least the ability to figure out the rules--is "built in."

In the past few decades some researchers have come to believe that children possess a universal grammar that helps them master whatever language they are exposed to during infancy. Obviously, though, young children can't articulate the rules, and they make mistakes while learning how to talk. Nowadays linguists are wary of drawing conclusions from children's speech; they tend to sift for the inborn element of language by rigorously analyzing adult speech, usually in well-studied languages like English or French.

Bickerton attacks the problem from a different angle. He's not alone in exploring new approaches, but he is probably the only linguist who's gone so far as to have himself deliberately marooned. And he may well be the only one who still thinks, as the ancients did, that he can discover the roots of language through direct observation of a bunch of little kids. In the process he's managed to annoy biologists, neurologists, linguists, and psychologists--researchers in every area in which he has wandered looking for evidence. "I would never do what other people wanted me to do or what I was expected to do," he admits. "As a result I have nothing that you could call a following or a confraternity."

By the time he conceived his idea for the island experiment, Bickerton was convinced he knew what sort of language the kids would invent: it would be a creole--a hybrid tongue like those that have evolved on islands and along coastlines all over the world. Linguists, he suspected, had been excavating too deeply for the innate component of language. It was available for study right on the surface of everyday life, wherever language is being created for the first time: on the individual level, in the first efforts of a two-year-old to talk, and on the social level, when peoples who don't speak one another's language have to forge a new one.

As he slept under the stars on Ngemelis, Bickerton thought he was about to put Psamtik's query to the ultimate test. But at the last minute, when he was about to jet around the Pacific recruiting his paid volunteers, the grant he'd been told to expect was turned down. Although the project had been approved by the University of Hawaii's ethics committee, doubts had surfaced higher up in the National Science Foundation. Someone there was worried about the lasting effects such an experiment might have on the children. Bickerton's plan for the next year--and half a year's salary-- evaporated.

He adapted quickly. In a few months, trading on the success of several popular books he had written years before (two murder mysteries, a novel "about a thinly disguised Barbados," and a nonfiction book about a Caribbean serial murderer), Bickerton wrote and sold King of the Sea, in which a fictional researcher learns how to communicate with intelligent dolphins. "The advance helped matters a bit," he says. Meanwhile he worked with a committee of social scientists to develop a less worrisome experiment. "By the time the dust settled on the committee, we were left with a plan for twelve European adults to go on an Outward Bound course for three months in the Sierras," he says. He didn't bother to submit the modified proposal.

Yet Bickerton, now 66, never gave up on his idea, and these days he's scouting for a location in Europe to stage "Island 2." Placing the group on the mainland should allay any anxieties about isolation, he says, and give his subjects a chance to get away from the experimental hothouse every once in a while. Moreover, the new plan calls for two families from each language group, which should make life less lonesome at the outset. Aside from that, the idea is the same. His subjects now would be speakers of Greek, Flemish, Basque, and Hungarian--"the most diverse European languages I can find," he explains.

Bickerton was a long time coming round to his night on Ngemelis. In fact, he thought he had left the academic life behind when he graduated from Cambridge University in his native Britain in 1949. The gifted son of a schoolteacher and a clerk, he wanted to get away from England. "In the first place there's the climate," he says, "and then there's that class system."

For the next 17 years Bickerton and his wife, Yvonne, with their three children in tow, roamed through Spain, Africa, and other warm parts of the world while Bickerton held a variety of jobs. Some of these--truck farming, lumberjacking, and guitar playing in a flamenco act--emerge in casual conversation. But he won't elaborate on his life before he entered a graduate program in linguistics at the University of Leeds in 1966. "I'd prefer to save all that for my autobiography," he says.

In a sense, though, Bickerton's wanderings were perfect preparation for the island experiment. They taught him and his family self- reliance, and they exposed him to several of the creole languages to which he would return later as a scholar. In fact, Bickerton's much-delayed experiment is actually a miniaturized, humane version of the social "experiment" that engendered the world's 100 or so creoles.

These experimenters were motivated by money, not curiosity. They were the owners of colonial plantations throughout the tropics who needed to import laborers (often slaves in the seventeenth and eighteenth centuries, contract workers in the nineteenth). These immigrants spoke languages as different from one another as German is from Chinese, and it often happened that no one group was numerous enough to impose its language on the others. For example, records show that the 65 slaves of a plantation in French Guiana in 1695 spoke 12 different languages.

Under such circumstances people rapidly developed pidgin--a form of speech with a limited vocabulary and little or no grammar. For example, to express the thought, "They put the body in the ground and covered it with a blanket, and that's all," a Hawaiian pidgin speaker Bickerton once taped said, "Inside dirt and cover and blanket, finish."

Plantation workers got along well enough speaking like this in the fields, and they could usually fall back on their native languages at home. But as time passed, Bickerton believes, pidgin speakers' children learned it as the "real" language. "Even at home," Bickerton says, "they didn't necessarily have parents who spoke the same language. In Hawaii, for instance, there's a word, four-blood, for someone whose grandparents each

came from a separate ethnic group." Building on an inadequate form of speech, children expanded the pidgin, providing grammar even though there were no adult speakers to guide them. Within one generation, says Bickerton, pidgins changed into fully grammatical creoles.

Pidgins and their creole offspring took much of their vocabulary from the languages of those who gave orders; hence it was easy for contemptuous Europeans to describe the new tongues as ramshackle versions of true languages. Broken English, nigger French, and bastard Portuguese were common terms in the last century. That attitude taints creoles still, but Bickerton insists it's a misconception. It's true that creoles got much of their vocabulary from European languages, but they combined those words using entirely different rules. For example, the creole spoken today in the South American country of Guyana got many of its words from English. But, says Bickerton, "you cannot say in English, 'Is weary, I weary.' In Guyanese creole, though, that's perfectly acceptable. It means, 'Gee, I'm real tired.' So in this creole structure, you've got English words arranged in a way that no English speaker would arrange them."

It's just this hybrid quality that makes creoles unpopular among linguists. The new languages, created where cultures overlap, are "messy." A paper stating that a particular point of grammar comes from an African language will likely be met by a reply that no, it really comes from Portuguese. Settling the matter can require forgoing diagrammed sentences on the blackboard for a look at aging slave-ship manifests and crumbling nineteenth-century newspapers. (Bickerton particularly favors accounts of trials, with their word-for-word reproduction of creole testimony.) Not surprisingly, many linguists, especially those who plumb the mysteries of grammar, prefer to work with languages that have clearer pedigrees.

Bickerton began his professional research at the University of Guyana in the late 1960s, studying different varieties of Guyanese creole. In 1972, however, he moved to the University of Hawaii to investigate a younger creole. Still alive on the Hawaiian islands were adults who recalled and used their childhood pidgin. In 1973 and 1974 Bickerton and a team of five graduate students recorded some 250 hours of Hawaiian speech and generated thousands of pages of transcripts. Then they combed through this record, doing the grunt work of theoretical linguistics: looking for regularities and devising rules to account for them.

As the analysis progressed, Bickerton was deeply impressed by how much Hawaiian "creole English," born in the late nineteenth century among Asian and American immigrants, had in common with Caribbean creoles, born two centuries earlier among Africans. It sent him back to the long-noted but unexplained fact that the rules of creoles the world over, while not similar to those of their supposed source languages, are similar to one another.

For example, creoles distinguish between accomplished and unaccomplished actions, so that a Jamaican saying the equivalent of "He went to wash" must say either "Him gone for bathe," meaning he went with the intention to wash, or "Him gone go bathe,"

meaning he went to wash and completed that act. In the same way that an English speaker cannot talk about bathing without putting that act in the past, present, or future, the Jamaican speaker cannot complete this sentence without indicating whether the action was accomplished. Creoles the world over, Bickerton noticed, whether based on English, Dutch, French, Spanish, Portuguese, or Arabic, maintain this distinction.

There are many other similarities. Creoles are friendly to the double negative: "No dog didn't bite no cat." Creoles decline to invert word order after a where or when question, saying, "Where you are going?" instead of "Where are you going?" And they use adjectives as verbs, as in "I going full Angela bucket," which is perfectly grammatical Guyanese creole.

Bickerton began to wonder if these striking similarities, which seem to have popped up independently all over the world, might reflect some innate, universal properties involved in human language making. "I thought if that's true, then children should produce creolelike phenomena in the course of learning," he says. "So I went into the library and pulled out pretty well everything in sight on child language. And I found some grist for my mill."

There was, for example, a study conducted at the University of Minnesota in the 1970s, in which young children were asked to complete a series of partial sentences all structured so that finishing each correctly required an understanding of the distinction between specific and nonspecific references. For example, "John read a book yesterday, and he enjoyed _____" is completed by "the book," not "a book." To the researchers' surprise, three-year-olds who took the test succeeded 90 percent of the time in making such distinctions between nonspecific and specific. This was odd, because English grammar doesn't highlight the distinction; it's not obvious when the or a is called for (and adults learning English often stumble on this point). But creole grammars do highlight the distinction. "I thought, well, eureka," Bickerton says.

He knew that children speaking creole would automatically look for ways to distinguish "a book" and "the book" (in words of their own language) because the distinction is built into the structure of creoles. Hawaiian creole, for example, has a "slot" before nouns that speakers leave empty for nonspecific references but fill when making a specific reference. One Hawaiian that Bickerton taped said, "Me, I get rash," meaning "As for me, I get rashes" (nonspecific). When referring to a particular ailment, the same speaker might say, "I get one rash," filling the slot before rash. Whether they fill the slot or not, Bickerton explains, creole speakers know it is there. The unfilled spot is the grammatical equivalent of zero--a silent placeholder that signifies "this is nonspecific" as surely as the word one signifies "this is specific." And the distinction that creole speakers make is the same one the Minnesota children were expressing by using a and the.

Bickerton wasn't surprised, then, to find that young children beginning to speak often produced sentences that were wrong for English but grammatical in creole. They used adjectives as verbs (the sentence "I going full Angela bucket," for example, was uttered by the three-year-old child of a linguist at Stanford). They were prone to double negatives

(one four- year-old boy, a researcher reported, kept saying, "Nobody don't like me," until, after being corrected eight times by his mother, he finally said, "Nobody don't likes me"). Also like creole speakers, young children posing questions often didn't invert the order of their words, saying things like "Where you are going?"

By the early 1980s Bickerton had proposed a mechanism to account for such similarities: a "bioprogram" built into the language-making part of the brain. Born with such factory settings, a child would naturally follow them--us-ing, say, double negatives--until some alternative was drummed in. Usually children do have an alternative: they can imitate their parents' speech. But since pidgin-speaking children had little or no grammar to imitate, they simply added their innate rules to the lingua franca of their plantation or town. Hence children's early speech and creoles would both reveal the long-sought universal grammar built into all humans.

More recently, Bickerton has come to ponder another enticing fact about children's language learning: its incredible speed. Among children, Bickerton found, there's a sudden leap from simple talk to complex, highly structured speech. His evidence came from diaries kept on children by language researchers who have recorded progress from simple sentences like "Ride Papa's neck" (a child named Hildegard at age 22 months) to "You go here like I did," adding a comparative clause (at 28 months) to "Mama put all my animals away because I broke them," expressing causation (at 29 months). Examining three such diaries for first occurrences of complex structures, Bickerton saw "a dramatic explosion of syntactic capacity around age two," often within a span of four or five weeks. It was not a gradual evolution, as researchers had assumed. Earlier studies had missed this, Bickerton says, because they focused on sentence length, which does increase gradually, rather than on complexity, which develops quickly.

When Bickerton was making his first foray into children's speech, his earlier research in Guyana and Hawaii had already convinced him that pidgins exploded into creoles without any intermediate steps, much the way a child's baby talk suddenly acquires syntax. The only explanation, he eventually concluded, was that both processes were the same because "it's little children who invent languages." The quickness of language development, among both individual two-year-olds and pidgin-speaking societies, gave him more confidence that his proposal of a bioprogram was on the right track.

The theory, first outlined in a 1981 book called Roots of Language, set off a raging controversy among specialists in creoles. It's a controversy that has yet to be settled. "Probably the majority of creolists don't agree with me," Bickerton says. Many of his critics believe that common mechanisms--similar social structures on plantations, say, or the diffusion of language by sailors--account for the similarities among creoles better than some hypothetical innate rules.

Many creolists are convinced, for instance, that some of the grammar supposedly invented by children was actually carried over from African languages into Caribbean creoles. "I believed that myself," Bickerton replies, "and I spent a good deal of time studying the grammars of African languages--which are very diverse." Then something

occurred to him. As he explained in a 1983 article, "Even if it could be demonstrated that all the grammatical structures of creole were borrowed, cafeteria- style, from one contact language or another, the uniformity of creole would present a difficult question: How did the speakers who invented creole"-- isolated as they were--"come to agree on which structure to borrow from which language?"

Another complaint leveled against Bickerton's theory was that it ignored the messy details of actual speech. Creole speakers, like most humans, seemed to these skeptics rather flexible: they might use a certain construction 90 percent of the time, but not always. To Bickerton's critics, the "rules" of creole were far less rigid than he claimed-- more like traffic laws than Newton's laws of motion.

Motorists too follow certain rules fairly regularly, but is this evidence that we're all born with a car-driving bioprogram?

It's a criticism often leveled by linguists who believe that language is basically a social invention. When researchers like Bickerton, they say, try to abstract the "rules" of language from the homes and streets where language is used, they weed out the essence. What they end up with is just rules--not language but pure logic.

Indeed, Bickerton and other theoretical linguists go about their work like mathematicians: they study their subject as an autonomous, self- contained system. Just as the number three consists of formal properties, like being odd and positive and an integer, that can be studied whether or not three coconuts are actually on hand, the word chase for a theoretical linguist is not a specific event but a set of properties: an action involving a pursuing agent and a retreating target.

It's an approach championed by Noam Chomsky, MIT's renowned theoretical linguist. "I would look at the various conditions that chase has to satisfy," says Chomsky. "Those conditions are internal [to language]. You could study them if the world didn't exist." The capacity to grasp these fixed, formal relationships, Chomsky argues, is what makes up the innate component of language. Anyone who is learning to speak has no choice but to select from this limited menu of categories and rules.

These few principles are masked, say the theorists, by the world's bewildering array of 6,000 languages, each with its own history and culture. Theoretical linguists don't deny that on the surface languages can seem to have nothing in common. Bickerton, for example, has never suggested that being born with a creolelike bioprogram means we should all speak creole. In a society's history, a particular accent or style of speech can catch on; immigrants may bring new words; people might move to a different environment (say, the tundra) that imposes new requirements (a lot more words for types of snow, for example).

Chomsky claims, however, that just as the world's varied cultures are constrained by the fact that people walk on two legs, come in two sexes, and use two hands, so too all the variety of languages are constrained by the innate principles of a universal grammar. He

compares a child's inherent knack for language learning to puberty: a distinct, genetically programmed phase of life. Bizarre modern case studies lend some support to this idea. For instance, there's the story of the pseudonymous Genie, a 13-year-old girl found wandering the streets of a California city in 1970. Genie had been kept locked in a room, away from all human speech, from the age of 18 months. As a result she didn't speak a word. Years of rehabilitation transformed Genie into a functioning adult, able to produce such pidginlike sentences as "At school wash face" and "Father take piece wood." But no one could teach Genie to speak as well as a mere two-year-old like Hildegard, even though she exhibited adequate intelligence on general (nonlinguistic) tests.

Bickerton drew from Chomsky's theory when he proposed the existence of a language bioprogram. Studies of children who are learning to talk, Bickerton claims, show that once a word is mastered, the child, without being taught, automatically comes up with the relevant grammar. "Within three days of the first occurrence of know, the child will be saying, 'I know where it is.' Once a child picks up a word, it can make any kind of structure that the word goes with." In fact, it seemed to Bickerton that the bioprogram was more specific than Chomsky suggested. He was convinced that, instead of a menu of abstract options waiting to be developed by other speakers' input, the brain's language switchbox contained something very much like actual creole grammar.

As the 1980s brought more data on child language, Bickerton was forced to refine his ideas. It turned out that children do not always make similar mistakes when learning their parents' language. A two-year-old learning English makes some peculiarly English mistakes; a two-year-old learning Turkish makes Turkish mistakes. "It's not that the child is hell- bent on speaking creole if he can get away with it, as I'd originally imagined," says Bickerton.

It's as if the bioprogram exists on a deeper level than creoles do--a level that works very much like Chomsky's categories and relationships. Bickerton now believes, for example, that the bioprogram does not specifically mandate that every child use adjectives as verbs, saying things like "I flatted the box." Rather, it might endow the child with a concept of "caused by someone," and the child will look for grammar to express that. If it isn't readily apparent, the child will guess. In English there are many ways to indicate causation (John made the ice melt, John melted the ice, the ice was melted by John), and that makes the bioprogram harder to express. Hence, children learning English use adjectives as verbs and make other mistakes related to causation until they grasp the complicated structures peculiar to English. Turkish, on the other hand, has a single, unvarying syllable that always goes at the end of a verb to indicate that someone caused something to happen. "So no Turkish child is going to say, 'I flatted the box,' because they've already got the wherewithal to express causation," Bickerton says.

Yet Bickerton still insists on the importance of children's speech and creoles. If they're not the pure bioprogram, they're on the next level up--and therefore represent the best place to start digging. This is a far different approach from the one Chomsky and most other theoretical linguists have followed. Comparing how adults speak across many languages, says Chomsky, accounts for "probably 99 percent" of what linguists know

about the underlying categories and rules. "Creoles and child language tell you something," he says, "but it's very marginal as opposed to other sources."

Though Bickerton is still following his original hunch, he now pays less attention to children's mistakes, which aren't always creolelike, and concentrates on structures they are surprisingly quick to learn. If a language's particular strategy for expressing some relationship is compatible with the bioprogram, he argues, then it's more easily mastered than another language's different strategy for the same innate concept. It then follows, Bickerton still insists, that comparing how kids learn different languages should still reveal the bioprogram they're all working with. It would be better yet to observe them inventing a new language.

Meanwhile Bickerton's speculations have taken another turn. He began thinking that if humans have a genetically based program for language, it must have evolved from some prehuman form of communication. Whatever that earlier capacity was, it would have been useful for survival and passed on. So Bickerton proposed that the language bioprogram, with its built-in categories and distinctions, is a logical evolutionary consequence of the way all animals--not just humans--perceive the world: they divide it into categories and relationships important to an animal's survival. There should be a unifying set of fundamental concepts that all birds and higher mammals "understand."

After consigning the question of language's origin to a not entirely respectable back alley for decades, Bickerton argues, it's now time for linguists to look for the link between human language and the cognitive capacity of animals. Apes and pigeons, after all, have shown in experiments that they can associate particular symbols--hand signals, plastic tokens, spoken words--with particular meanings. In his latest book, Language and Species, Bickerton singles out pidgins, the early speech of children, the sign language of apes, and the chatter of parrots as places where researchers might consider looking for a "protolanguage."

Not surprisingly, such border-crossings between linguistics, cognitive psychology, and now evolutionary biology have set off trip wires in several disciplines. "Misleading, misguided, and potentially dangerous" was one professor's published reaction to Bickerton's original description of the bioprogram. "Irresponsible flights of fancy," wrote another. With more restraint, another wrote: "To go from pidgins to pigeons in one intellectual bound is too high-stepping for me."

Bickerton maintains he was putting forward "a hypothesis, not a theory." Yet he admits it was a bold one. "It took a lot of chutzpah," he concedes. The result, he acknowledges, is that "I'm fighting on a lot of fronts."

Not all the responses were negative, though. One psychologist, for example, got the idea after reading Bickerton that sign language might be a form of creole developed by deaf children who, like the children exposed to pidgins, didn't get adequate input from a hearing world. The recent discovery that deaf babies "babble" with their hands could give

Bickerton an unexpected new avenue for testing his ideas about kids and creoles--and one more front to fight on.

Having carried his speculations about as far as they'll go, Bickerton is more eager than ever to become midwife to a new language. His grant applications for Island 2 are in--he figures he'll need about a million dollars--and negotiations for the use of an isolated estate in rural France are under way. Yvonne, a marriage counselor, will contribute her considerable peacekeeping skills. The prospect of at last putting people on a linguistic island, if not a real one, seems to fill Bickerton with energy. "It's going to be like sending up a space shuttle," he says. "We can do about eighty-five people's experiments, check out a lot of hypotheses at once."

As his volunteers and their children struggle with their artificial 200-word pidgin, he knows, all his hypotheses--but especially his original idea about kids and creoles--will either gain new strength or go down in flames. "Whether my hypotheses are supported or not, I don't much care," Bickerton says. "What I do care about are the things that we shall know for the first time. I want to discover things. And I think we're going to have some fun."

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