The Indus Script—Write or Wrong?

Academic prizes typically are designed to confer prestige. But the latest proposed award, a $10,000 check for finding a lengthy inscription from the ancient Indus civilization, is intended to goad rather than honor. The controversial scholar who announced the prize last month cheekily predicts that he will never have to pay up.

Searching for script. Richard Meadow excavates at Harappa.

For 130 years scholars have struggled to decipher the Indus script. Now, in a proposal with broad academic and political implications, a brash outsider claims that such efforts are doomed to failure because the Indus symbols are not writing which a system of religious-political signs provided cohesion.

Their thesis has bitterly divided the field of Indus studies, made up of a small and close-knit bunch dominated by Americans. Some respected archaeologists and linguists flatly reject it. “I categorically disagree that the script does not reflect a language,” says archaeologist J. Mark Kenoyer of the University of Wisconsin, Madison, who directs a dig at the key site of Harappa in Pakistan. “What the heck were they doing if not encoding language?” Asko Parpola, a linguist at Finland’s University of Helsinki who has worked for decades to decipher the signs, says. “There is no chance it is not a script; this is a fully formed system. It was a phonetic script.” Linguist Gregory Possehl of the University of Pennsylvania in Philadelphia says that it is not possible to “prove” the script cannot be deciphered. All three argue that Farmer’s thesis is a pessimistic and defeatist approach to a challenging problem. Meanwhile, the very idea that the Indus civilization was not literate is deeply offensive to many Indian nationalists.

Yet since a 2002 meeting at Harvard University at which Farmer laid out a detailed theory—and was greeted with shouts of derision—he has attracted important converts, including his co-authors. A growing cadre of scholars back the authors’ approach as a fresh way to look at a vexing problem and an opportunity to shed new light on many of the mysteries that haunt Indus research. Harvard anthropologist Richard Meadow, who with Kenoyer directs the Harappa project, calls the paper “an extremely valuable contribution” that could cut the Gordian knot bedeviling the field. Sanskrit and South Asian linguist Witzel says he was shocked when he first heard Farmer’s contention in 2001. “I thought I could read a few of the signs,”

The Indus civilization has intrigued and puzzled researchers for more than 130 years, with their sophisticated sewers, huge numbers of wells, and a notable lack of monumental architecture or other signs of an elite class (see sidebar on p. 2027). Most intriguing of all is the mysterious system of symbols, left on small tablets, pots, and stamp seals. But without translations into a known script—the “Rosetta stones” that led to the decipherment of Egyptian hieroglyphics and Sumerian cuneiform in the 19th century—hundreds of attempts to understand the symbols have so far failed. And what language the system might have expressed—such as a Dravidian language similar to tongues of today’s southern India, or a Vedic language of northern India—is also a hot topic. This is no dry discussion: Powerful Indian nationalists of the Hindutva movement see the Indus civilization as the direct ancestor to Hindu tradition and Vedic culture.

Now academic outsider Steve Farmer (see sidebar on p. 2028) and two established Indus scholars argue that the signs are not writing at all but rather a collection of religious-political symbols that held together a diverse and multilingual society. The brevity of most inscriptions, the relative frequencies of symbols, and the lack of archaeological evidence of a manuscript tradition add up to a sign system that does not encode language, argue historian Farmer and his co-authors, Harvard University linguist Michael Witzel and computational theorist Richard Sproat of the University of Illinois, Urbana-Champaign. Instead, they say the signs may have more in common with European medieval heraldry, the Christian cross, or a bevy of magical symbols used by prehistoric peoples.

This idea has profound implications for how the Indus civilization lived and died. Instead of the monolithic, peaceful, and centralized empire envisioned by some scholars, the authors say that the new view points to a giant multilingual society in academic prizes typically are designed to confer prestige. But the latest proposed award, a $10,000 check for finding a lengthy inscription from the ancient Indus civilization, is intended to goad rather than honor. The controversial scholar who announced the prize last month cheekily predicts that he will never have to pay up. Going against a century of scholarship, he and a growing number of linguists and archaeologists assert that the Indus people—unlike their Egyptian and Mesopotamian contemporaries 4000 years ago—could not write.

That claim is part of a bitter clash among academics, as well as between Western scientists and Indian nationalists, over the nature of the Indus society, a clash that has led to shouting matches and death threats. But the provocative proposal, summed up in a paper published online last week, is winning adherents within the small community of Indus scholars who say it is time to rethink an enigmatic society that spanned a vast area in today’s Pakistan, India, and Afghanistan—the largest civilization of its day.

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Yet since a 2002 meeting at Harvard University at which Farmer laid out a detailed theory—and was greeted with shouts of derision—he has attracted important converts, including his co-authors. A growing cadre of scholars back the authors’ approach as a fresh way to look at a vexing problem and an opportunity to shed new light on many of the mysteries that haunt Indus research. Harvard anthropologist Richard Meadow, who with Kenoyer directs the Harappa project, calls the paper “an extremely valuable contribution” that could cut the Gordian knot bedeviling the field. Sanskrit and South Asian linguist Witzel says he was shocked when he first heard Farmer’s contention in 2001. “I thought I could read a few of the signs,”
Witzel recalls. “So I was very skeptical.” Now he is throwing his scholarly weight behind the new thesis, as a co-author of the paper and also editor of the Electronic Journal of Vedic Studies, an online journal aimed at rapid publication, which published the paper. Adds archaeologist Steven Weber of Washington State University in Vancouver: “Sometimes it takes someone from the outside to ask the really basic questions.” Weber, who is now collaborating with Farmer, adds that “the burden of proof now has to be on the people who say it is writing.”

Seeking the Write Stuff
Since the 1870s, archaeologists have uncovered more than 4000 Indus inscriptions on a variety of media. Rudimentary signs appear around 3200 B.C.E.—the same era in which hieroglyphics and cuneiform began to appear in Egypt and Iraq. By 2800 B.C.E., the signs become more durable, continuing in use in later periods; the greatest diversity starts to appear around 2400 B.C.E. Some signs are highly abstract, whereas others seem to have obvious pictographic qualities, such as one that looks like a fish and another that resembles a jar. Both are used frequently; the jar sign accounts for one in 10 symbols, says Possehl. As in Mesopotamia, the signs typically appear on small tablets made of clay as well as on stamp seals. The seals often are accompanied by images of animals and plants, both real and mythical.

The signs start to diminish around 1900 B.C.E. and vanish entirely by 1700 B.C.E., when the Indus culture disappears. Oddly, the inscriptions are almost all found in trash dumps rather than in graves or in primary contexts such as the floor of a home. “They were thrown away like expired credit cards,” says Meadow.

No one had ever seriously questioned whether the signs are a form of writing. But scholars hotly debate whether the system is phonetic like English or Greek or logossyllabic—using a combination of symbols that encode both sound and concepts—like cuneiform or hieroglyphics. Even the number of signs is controversial. Archaeologist and linguist S. R. Rao of India’s University of Goa has proposed a sign list of only 20, but Harvard graduate student Bryan Wells is compiling a revised list now numbering 700; most estimates hover in the 400 range.

Farmer and colleagues reanalyzed the signs, drawing on published data from many sites and unpublished data from the Harappa project provided by Meadow. They found that the average Indus inscription, out of a neighborhood suggesting clannish rivalries or outside threats, jewelry of different quality suggesting social distinctions, and civic structures. New digs within India have uncovered evidence of a more vibrant system of trading over long distances. Those finds hint at a society not so radically different from its contemporaries, says Wright. In that light, a thesis highlighting the oddity of the Indus symbols (see main text) feels like a backward step, she adds.

Unraveling the contradictions of the Indus civilization will require more data—data that are buried in the mostly unpublished notes of the Harappa team and their Indian colleagues, at sites along the tense India-Pakistan border, and in tribal areas closed now to scientists. The Indus seems destined to confound archaeologists for decades to come.

—A.L.
Outsider Revels in Breaking Academic Taboos

Steve Farmer describes himself as “the ultimate collaborationist,” but he has a way of making enemies. When he showed up at a 2002 Harvard University gathering to propose that the Indus script is no script at all, participants recall that his ideas were greeted with shouts of derision. And his positions on the role of the Indus civilization in Indian history have earned him a place in the demonology of Indian nationalists.

Yet despite what many call an abrasive personality, this former street kid from Chicago, who lacks a high school diploma, has shaken up the closed field of Indus studies (see main text). “It is healthy the way this is turning things upside down,” says archaeologist Steven Weber of Washington State University in Vancouver.

Farmer’s linguistic ability got him off the streets when he joined the Army in the 1960s. After learning Russian at the military’s language school in Monterey, California, he worked for the National Security Agency listening in on the conversations of Soviet pilots. Then, radicalized by the Vietnam War, he left the military for academia. After winning a high school equivalency diploma, he studied history at the University of Maryland, College Park, and earned a Ph.D. in comparative cultural history at Stanford University in California. He taught history of science and European history at George Mason University outside Washington, D.C., and then moved to Louisiana State University in Baton Rouge as a tenure-track professor. But he says he rejected full-time academic life to avoid teaching courses he found boring and moved back to California, where he was on the adjunct faculty at Ohlone College in Fremont until 1997. To support his scholarly pursuits, Farmer has edited a journal on narcolepsy, worked on a PGA golf tournament training program, and helped develop a device to aid people with brain disorders.

In 1999, after putting together a model of cross-cultural frameworks for premodern history using ancient China as an example, he turned his attention to India. “I didn’t know anything about this stuff,” he says. “I was the naive outsider too dumb not to recognize the field’s taboos.” But he was struck by the brevity of Indus inscriptions and unconvinced by the many efforts to decipher the symbols. He didn’t hesitate to poke fun at Indian nationalists who attempted their own decipherments and who promulgated theories connecting the Indus to Hindu culture. “I still get death threats daily,” he says. “And I’m careful about opening packages from India.” He also was irritated by what he calls archaeologists’ proclivity to “hoard data.”

“He can be abrasive and aggressive, and many in the field find him presumptuous,” says linguist George Thompson of Montserrat College of Art in Beverly, Massachusetts. At the 2002 Harvard meeting, a few of the academics present hooted Farmer off the stage. “People were literally screaming,” Farmer recalls. Nonetheless, his arguments ultimately impressed Harvard anthropologist Richard Meadow, who granted him access to unpublished Harappa data. “Steve stepped in and did an enormous amount of work” on the Harappa data, says Thompson.

His arrogance makes him hard for some scholars to get along with. “I’ve remodel the field,” he recently boasted. Others resent his methods. “He uses verbose arguments,” says archaeologist J. Mark Kenoyer of the University of Wisconsin, Madison, co-director of the Harappa dig. “And he’s not basing it on science.” Adds linguist Gregory Possehl of the University of Pennsylvania in Philadelphia, “I don’t think his ideas are interesting or viable, and I’m surprised they have raised interest.” At this point, however, that interest is undeniable, so Indus specialists are making room, albeit reluctantly, for a new member of their small family. But the intellectually peripatetic Farmer insists he will not make himself at home: “This is just a chapter in my book.”

—A.L.
Farmer says he won’t reveal—where his mouth is, promoting his money—or, rather, that of a donor listserve devoted to the Indus. And he is puttering around with 50 symbols on it, in repeating pattern with 50 symbols on it, in repeating patterns, as on the script, a tendency that has less to do with science than with the strong emotions swirling around the old troubles with decipherment.

As to the brevity of inscriptions, Wells says averages can be misleading. The longer Indus inscriptions, he says, can’t be explained as magical symbols. Vinča symbols, for example, rarely are grouped in numbers greater than five. “And you don’t get repetitive ordering” as with Indus signs, he adds. “The Indus script is a highly patterned, highly ordered system with a syntax—it just looks too much like writing.” Wells also says that a mere 30 signs are used only once, rather than the 1000 Farmer postulates, because many of the “singletons” transform into compound signs used repeatedly.

Parpola agrees that the pattern of symbols argues for an organized script. “There are a limited number of standardized signs, some repeated hundreds of times—with the same shape, recurring combinations, and regular lines,” he says. But Wells and Parpola, like most linguists in the field, agree on little beyond their opposition to Farmer. Wells rejects Parpola’s method of deciphering the signs, and Parpola dismisses Wells’s contention that there are significant differences between the signs of upper and lower Indus.

Wells and some other scholars believe that the attraction of Farmer’s idea has less to do with science than with the long history of decipherment failures. “Some have turned to this idea that it is not writing out of frustration,” he says. But many others are convinced that Farmer, Witzel, and Sproat have found a way to move away from sterile discussions of decipherment, and they find few flaws in their arguments. “They have settled the issue for me,” says George Thompson, a Sanskrit scholar at Montserrat College of Art in Beverly, Massachusetts. “We have the work of a comparative historian, a computational linguist, and a Vedist,” he adds. “Together they have changed the landscape regarding the whole question.” In a forthcoming book on South Asian linguistic archaeology, Frank Southworth of the University of Pennsylvania calls the paper an “unexpected solution” to the old troubles with decipherment.

Meanwhile, Farmer is injecting a bit of fun into the melee. “Find us just one inscription with 50 symbols on it, in repeating symbols in the kinds of quasi-random patterns associated with true scripts, and we’ll consider our model falsified,” he wrote on a listserve devoted to the Indus. And he is putting his money—or, rather, that of a donor he won’t reveal—where his mouth is, promising the winner $10,000. The orthodox dismiss the prize as grandstanding, whereas Farmer boasts that “no one is ever going to collect that money.”

Retrenching
Each side clearly has far to go to convince its opponents. “I’m not sure the case is strong enough on either side,” says linguist Hans Hock of the University of Illinois, Urbana-Champaign. “Let each side of the controversy make their case.”

Yet there already is a retreat from earlier claims that the Indus symbols represent a full-blown writing system and that they encoded speech. Many scholars such as Possehl now acknowledge that the signs likely are dominated by names of places, people, clans, plants, and gods rather than by the narratives found in ancient Sumer or Egypt. They say the script may be more similar to the first stages of writing in those lands. Harvard archaeologist Carl Lamberg-Karlovsky says the meanings of the Indus signs likely are “impenetrable and imponderable” and adds that whether or not the signs are considered writing, they clearly are a form of communication—and that is what really counts. Recent research in Central and South America has highlighted how complex societies prospered without traditional writing, such as the knotted strings or khipu of the vast Incan empire (Science, 2 July, p. 30).

Farmer adds that a society does not need to be literate to be complex. “A big, urban civilization can be held together without writing,” he says. He and his co-authors suggest that the Indus likely had many tongues and was a rich mix of ethnicities like India today. Wells has found marked differences between signs in the upper and lower Indus River regions, backing up the theory of a more diverse society. But some, such as D. P. Agrawal, an independent archaeologist based in Almora, India, doubt that a civilization spread over more than 1 million square kilometers, and with uniform weights, measures, and developed trade, could manage its affairs without a script.

This debate over Indus literacy has political as well as academic consequences. “This will be seen as an attack on the greatness of Indian civilization—which would be unfortunate,” says Shereen Ratnagar, a retired archaeologist who taught at Delhi’s Nehru University. Tension is already high between some Western and Indian scholars and Indian nationalists. “Indologists are at war with the Hindutva polemicists,” says statistical linguist Lars Martin Fosse of the University of Oslo, and the issue of the script “is extremely sensitive.” Farmer says he regularly receives e-mail viruses and death threats from Indian nationalists who oppose his views.

For decades, Indus researchers have tended to stick with their established positions, as on the script, a tendency that has kept the field from moving forward, says one archaeologist who compares the small cadre of Indus scholars to a “dysfunctional family” with a proclivity for secrecy, ideological positions, and intolerance. Meadow is among those who argue that it is time to set aside old ideas, no matter how much time and effort has been invested in them, in order to push the field forward. “We’re here to do science, and it is always valuable to have new models,” he says. Adds Ratnagar: “We must get back to an open mind.” Given the strong emotions swirling around the Indus symbols, discovering the key to that open mind may prove the hardest code to break.

—Andrew Lawler