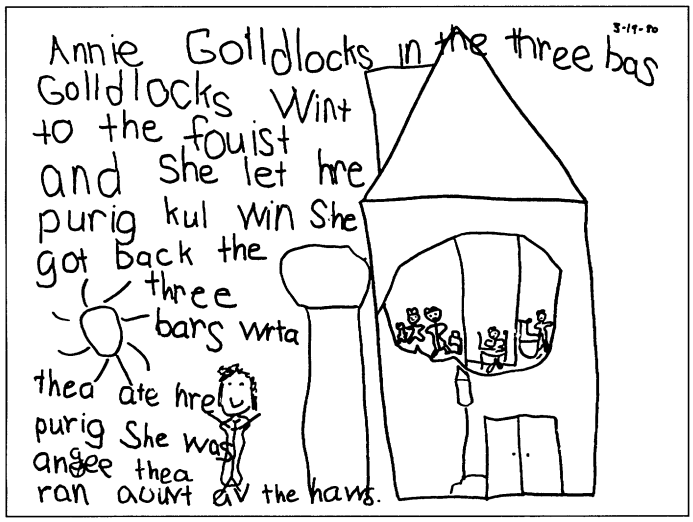
BOOK REVIEWS

Creative Misrenderings

Beginning to Spell. A Study of First-Grade Children. REBECCA TREIMAN. Oxford University Press, New York, 1993. xiv, 365 pp., illus. $49.95.

This is a book about how young children come to use the alphabet to write stories they have created. We have the ancient Greeks to thank for the development of the alphabetic principle: In our writing system, the symbols we use are meant to stand for the individual sounds of the spoken words represented. Each significant sound, or phoneme, in English is represented by one or more letters of the alphabet. In other kinds of writing systems, individual symbols may stand for ideas, for whole words, or for syllables. In an ideal alphabetic system, there is a one-to-one correspondence between a significant sound and the letter used to represent it, and there are just enough letters for all these phonemes; spelling is predictable and consistent. In this respect, English orthography is anything but ideal, since basically the same sound can appear in many different orthographic cloaks: *do*, *food*, *group*, *blue*, *knew*, *super*, and *fruit*, for instance, contain only some of the ways the same vowel sound can be spelled. Not only does English writing have multiple ways of spelling some individual sounds, it also obscures some important distinctions: The beginning sounds of *thin* and *this* are different phonemes, even though they are spelled the same way (consider the words *thigh* and *thy*, which differ only in the pronunciation of their initial sound), and the letter *x* typically stands for a consonant cluster containing both a *k* and an *s* sound. Finally, English compromises its alphabetic principle in the interests of historical and morphological continuity: We leave the unpronounced *g* in words like *sign*, perhaps to maintain its relationship to words like *signature*, and we spell the past tense of *jump* with an *-ed* (even though we pronounce the word as *jumpt*), perhaps to indicate that it is a past tense. It is no wonder that young children often find spelling a particularly difficult hurdle on the road to literacy. Psychologists and linguists, meanwhile, have found that children's spelling, or misspelling, of words provides some interesting insights into the ways they analyze and represent their language.

Treiman's book points out that in traditional research children's spelling errors are considered memory problems: It is simply assumed that children must learn to spell by memorizing the standard orthography required for words and that spelling errors are failures to recall the correct form: A child who spells the word *bent* as *bet* is thought to have "omitted the *n*" through some sort of faulty recollection. This view was challenged in the early 1970s when researchers proposed that children spell words as they do at least in part because that is the way they hear them; children commonly, for instance, write *cedl* for *candle* and *bet* for *bent*, presumably because they hear these words as having nasalized vowels, rather than nasal consonants, a not unreasonable phonological analysis. The first major study of this nature was conducted at Harvard by Charles Read, who found remarkable "creative" spelling similarities among a group of precocious self-taught preschoolers.



A story by Annie. In the teacher's version, "Goldilocks and the three bears, Goldilocks went to the forest and she let her porridge cool. When she got back, the three bears were there. They ate her porridge. She was angry. They ran out over the house." [From *Beginning To Spell*]

The present work by Rebecca Treiman is based on a study conducted with 43 first-grade children in Indianapolis. The children were encouraged by their teacher to write and illustrate stories; once they had written them, they dictated what they had written to the teacher or other adult, who wrote the story down on the same sheet in standard orthography. Thus, the author had both the children's spellings and the targets to work with. This in itself is a simple but telling methodological advance over previous work of this nature, since interpreting something like *the three bars wrta* (p. 8) could be simple guesswork, unless one had the dictated gloss, *the three bears were there*, provided by the child.

How can children's errors in spelling be characterized? One way, according to the author, has been to code them for whether or not the errors are "phonologically legal": Did the child represent the sound with a letter or combination of letters that is sometimes used for that sound in standard orthography? For instance, if the child spelled the word *tape* as *taip*, this is considered a legal spelling, since the vowel is indeed spelled that way in some words, such as *maid* or *tail*; it is assumed that the child heard the word accurately and attempted to spell it with symbols that are sometimes used for its sounds. By contrast, spelling *tape* as *toop* is an illegal error, since nowhere in English is the vowel heard in *tape* represented by *oo* (p. 278). Although this kind of error coding can capture something about what children's generalizations about standard spelling may be, according to Treiman it misses much of what is interesting about children's attempts to write what they actually hear: For instance, the child who writes *sky* as *sgy* may be committing an "illegal" error, but she may actually hear the second consonant as a *g* and be attempting to represent it.

The author analyzes children's correct spellings as well as their atypical renditions of English words and offers some conclusions and some suggestions for educators. She confirms, for instance, the previous finding that children who know the alphabet when they begin school have a head start on literacy. But she also found that children's attempts to use alphabet letters as if their names were also their sounds can lead them astray: For instance, children may use the letter *b* to stand for the whole word *bee*. Philosophically, the book is neither at the laissez-faire "whole language" end of the spectrum nor partisan to back-to-basics views that would have children spend much time with spelling

drills. Rather, it is proposed that children need training in recognizing the sounds of spoken language and in learning to make those distinctions in spelling that they find difficult. Teachers, too, need to cultivate their phonemic awareness. Armed with a knowledge of the sounds of English and working directly with young writers, they can deduce what words children are attempting and why they spell them as they do. Once this is accomplished, the route to better spelling becomes clear.

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The Origins of Script

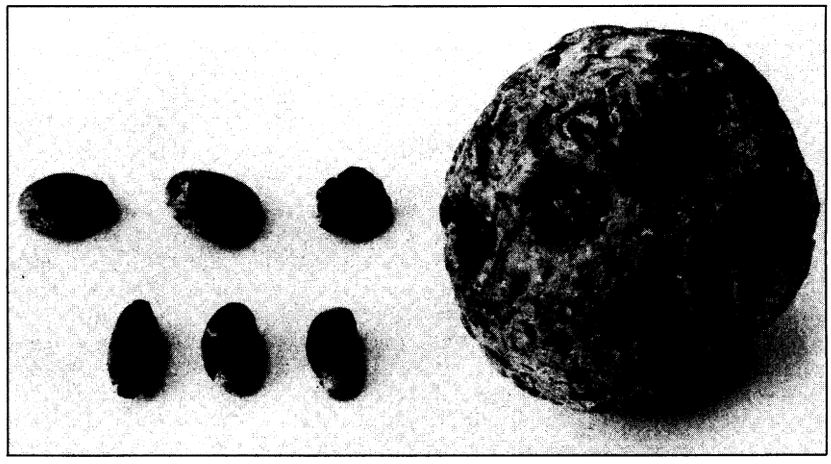
Before Writing. DENISE SCHMANDT-BESSERAT. In two volumes. Vol. 1, From Counting to Cuneiform. xviii, 269 pp., illus. $60. Vol. 2, A Catalog of Near Eastern Tokens. xxxvi, 416 pp., illus. $85. University of Texas Press, Austin, 1992.

From its pictographic beginnings toward the end of the fourth millennium B.C. in the southern Mesopotamian settlement of Warka, the cuneiform script moved through various phases of increasing multivalence—the use of pictographs as syllabic signs—until in the first centuries of the second millennium scribes of the Old Assyrian period in the north of Mesopotamia and of the Old Babylonian of Hammurabi in the south commanded an almost entirely syllabic cuneiform. A further reduction of syllabaries used in the Middle East of the first millennium B.C. to an exceedingly efficient alphabet was a logical consequence in this "democratization" of writing. Such has been the overwhelmingly accepted scheme of script development, in particular since the publication in 1952 of the fundamental *Study of Writing* by I. J. Gelb of the Oriental Institute of the University of Chicago.

Unassuming clay finds from Near Eastern excavations of prehistoric settlements have recently entered the continuing discussion of early writing with all the force of a bilingual inscription. Many of these small, geometrically shaped objects—spheres, disks, cones, and so on, both plain and decorated with various incisions—found seemingly scattered in tells had both figuratively and literally been cast aside by archeologists as objects of dubious importance, interpreted as perhaps gaming pieces or objects used in cultic practices; others found encased within sealed clay balls aroused only moderate interest. Since her first work on such envelopes from the Iranian city of Susa, Denise Schmandt-Besserat has with great effort gathered all available archeological evidence bearing on the possible early use of these objects, which she calls "tokens." She published her first account of the objects in the mid-1970s and has since presented in numerous articles data on the material finds as well as her own interpretation of the objects. In her two-volume *Before Writing* she offers a theory of script development in the Near East that deviates radically from that of Gelb. According to Schmandt-Besserat, cuneiform did not arise suddenly during the late Uruk period as a purely pictographic script, but rather developed in a measured, linear fashion from an already widely conventionalized accounting system employing such tokens.

Much of Schmandt-Besserat's argument is cogent and appealing. These artifacts of an assumed ancient accounting system range from undecorated geometric objects present in stratigraphic levels dating to 8000 B.C. to a mix of plain and decorated ("complex") tokens in the centuries immediately before the appearance around 3200 B.C. of true script in Warka. Many of the complex tokens bear a striking resemblance to signs found on the earliest tablets. The chronological development of these objects suggests that they were indeed the necessary precursors of the fully developed Uruk script. Indeed, these small objects virtually disappeared with the emergence of writing. Moreover, the use of "tokens" as bookkeeping aids in the context of rapid urbanization and social hierarchization mirrors the primary function of early cuneiform tablets: to control the flow of goods and services to and from central authorities. But it is above all the presence of plain and possibly some complex tokens within sealed clay balls, in rare cases with impressions on their surfaces corresponding to the shape and number of the objects inside and found in levels dating to a time immediately before the first tablets, that unmistakably points to a forerunner role of such objects in archaic writing. These tokens formed discrete and meaningful assemblages. In this scheme, the plain tokens represented quantities and were thus precursors of "numerical" signs impressed with the blunt end of a stylus, whereas the complex tokens represented goods and could be considered three-dimensional "ideograms."

There are nonetheless painful cracks in this wall. Though the role of the tokens found within or at least in conjunction with clay balls as forerunners of the highly developed and conventionalized numerical signs of the earliest Near Eastern tablets (the script of which is better called "proto-cuneiform," since its connection to the Sumerian language, presented by the author as fact, remains unproven) is now universally accepted, the many outwardly similar objects from settlements reaching from Palestine up through Anatolia and across Iraq to eastern Iran dating from 8000 to 3000 B.C. can only with great faith be considered members of a systematic and interregionally accepted method of accounting. The author invests much effort in making this system seem to have been in ubiquitous use, to the point of identifying even very dubious small finds as tokens. Thus, pellets found in caves of eighth- and seventh-millennium hunter-gatherers and herders in Persia are for Schmandt-Besserat evidence for prehistoric accounting. Such objects found in rubbish heaps are said to reflect the later practice of discarding accounting tablets in Babylonia upon completion of a transaction; but is an explicit and restricted document comparable to a collection of impersonal calculi? The author believes that small clay objects found in graves of adults underscore the high status of archaic bookkeepers and small stone objects represent quantities of grain offered deceased children. Such assertions cannot be rejected out of hand, since



"Envelope bearing impressed markings corresponding to the tokens held inside, Susa (Sb 1940), Iran." The notation seems to represent measures of grain. [From *Before Writing*; courtesy Musée du Louvre, Département des Antiquités Orientales]