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THE "ROOTS" OF ACCOUNTING

Abstract: This paper presents some evidence that rudimentary accounting (economic recordkeeping) may have predated both counting and writing.

In the past ten years numerous articles, books and other productions have exposed the "roots" of various segments of society. Such fascination with the discovery of one's past might excuse accountants for momentarily glancing away from proforma statements of the future to catch a glimpse of their own "roots." Just how deep into history, or prehistory, do the "roots" of accounting reach? There is some evidence that accounting (economic record-keeping) may have predated both counting and writing.

Primitive Recording—Real System Space Ordering— A Precursor of Mathematics?

Perhaps the simplest function of what is currently called accounting is the arranging of the elements of a given system to provide a particular required piece of information. For example, all of the goods "owned" by an individual are placed in a space designated as "his/hers." Such "real system space ordering" may be the initial expression of the recording function. If this is the case, accounting has "roots" that reach very deeply into history.

There is evidence that the concept of ordinal (directly space/time related) numbering may have preceded that of cardinal (quantitative) numbering.¹ The ceremonial rites of very ancient peoples enacting creation myths required the specific time ordering of the actors. A similar rudimentary sense of numbering has been shown to exist also in certain higher animals.² Ball describes the spatial ordering required by the counting efforts of primitive people as follows:

Up to ten it is comparatively easy to count, but primitive people find great difficulty in counting higher numbers; ap-

parently at first this difficulty was overcome by the method (still in use in South Africa) of getting two men, one to count the units up to ten on his fingers, and the other to count the number of tens so formed.³

This method of counting uses spatial arranging (ordering) of real system elements to achieve a quantitative solution. It shows how cardinal numbering may have emerged from real system space ordering in a particular setting. Ball indicates the possible instrument of general transition from ordinal to cardinal numbering when he points out that

the almost universal use of the abacus or swanpan rendered it easy for the ancients to add and subtract without any knowledge of theoretical arithmetic . . . they afford a concrete way of representing a number in the decimal scale, and enable the results of addition and subtraction to be obtained by a merely mechanical process.⁴

The statement that the most primitive forms of both accounting and counting may be expressions of real system space ordering does not in itself suggest that one predated the other. However, it does link accounting and counting to a common functional development. In human societies, functions tend to develop over time initially from the simple to the complex. Consequently, a common linkage to a functional development would have dating implications, however imprecise they may be.

The proposition that accounting may have emerged prior to, or at least concurrent with, counting is based on the following two ideas:

1. Developments in both rudimentary accounting and counting appear to be driven by economic need.
2. The incipient accounting space ordering seems to be of a more primitive expression than the space ordering associated with the emergence of counting.

Boyer supports both ideas in his statement,

It is clear that originally mathematics arose as a part of the everyday life of man, and if there is validity in the biological principle of the "survival of the fittest," the persistence of the human race probably is not unrelated to the development in man of mathematical concepts. At first the primitive notions of number, magnitude and form may

have related to contrasts rather than likenesses—the differences between one wolf and many.⁵

His identification of “notions of number, magnitude and form . . . related to contrasts” as precursors of counting indicates that these ideas predate counting. It appears that the most primitive expression of accounting would include these ideas. Consequently, accounting would predate counting. The scenario may be that economic need first drives space ordering by contrasts (the separation from the kill of one deer to one’s own space) followed by space ordering by likenesses as economic interaction (trade) develops.

Scott strongly supports such a scenario. Discussing the Sumerians, he declares:

[T]here is unmistakable evidence that a rudimentary form of mathematics played no small part in their lives. Barter leads at once to the fundamental operations of counting and adding, of weighing and measuring, and an appreciation of simple geometric forms. . . . Moreover, people depending upon the fruits of the earth for their existence had need of some form of calendar to indicate the recurrence of the seasons.⁶

Because it may be identified with precursors of counting, rudimentary accounting may predate counting and thus mathematics. However, it is possible that the two developed in such a close relationship that concurrent development would be a better description of their emergence. Perhaps counting was a conceptual system that developed in parallel with the real accounting system. Research related to this possibility may contribute to a better understanding of the current development of accounting.

Prehistoric Abstract Recordkeeping?

Real system space ordering could be quite restrictive as a recording device. By abstracting the order (or information) from the real system, one might allow the real system to be manipulated without destroying the record. Even this more advanced form of the recording process appears to have emerged very early in man’s existence.

The prehistoric emergence of abstract recordkeeping is documented by the work of Schmandt-Besserat. Tokens, which are clay models of various shapes representing specific commodities began to appear in the Middle East about 8500 B.C.⁷ With the emergence of cities, about 3500 B.C., the token system underwent evolutionary

changes and clay envelopes containing tokens began to appear.⁸ Schmandt-Besserat describes her work:

My own contribution since 1974 has been to document that tokens, such as those found in the envelopes, were found loose in most sites of the ancient Middle East. I proposed that they were part of a recording system commonly used prior to writing. By tracing the earliest tokens in the incipient farming communities of the ninth millennium B.C., I provided a link between the need for and invention of recording and the beginning of agriculture. I was able to draw parallels between the shapes of the tokens and those of the first signs of writing and to point out the relationship and continuity between the two recording systems.⁹

Schmandt-Besserat observed that, except for rare occasions, the tokens found at large were made with great care and fired and enclosed in clay or metal vessels. From this evidence she suggests that "tokens of specific accounts were kept in special containers."¹⁰ On the other hand, the tokens found in envelopes, while identical in shapes, were smaller and cursorily manufactured. This suggests that the tokens and envelopes may have been manufactured in the presence of involved parties and that the purpose of the invention of the envelopes seems to have been the need to confer an official character on certain transactions through the use of a seal.

While the envelopes form the direct impetus for the invention of writing, it is particularly important to observe that the tokens themselves formed a widespread abstract recording system over a period of some 5,000 years and over a wide spatial area. "The homogeneity of the group of artifacts strongly suggests that they all served an identical function and that the messages contained in the form of tokens were intelligible from Elam to Palestine."¹¹ It should further be observed that all of this happened in prehistory, before the invention of writing.

Schmandt-Besserat concludes:

About 200 spherical clay envelopes (including fragments) have been recovered in an area extending from Palestine to Iran, including Saudi Arabia. The seals impressed upon their surface indicate their formal character, and it seems clear that the tokens they contained stood for goods and stated liabilities. The envelopes would have remained of esoteric interest but for the discovery of their relationship to the invention of writing. Indeed, their evolution illus-

trates no less than the transition between an archaic abacus and writing according to the following sequence: (1) the invention of envelopes to hold tokens of specific transactions; (2) the impression of markings on the surface of the envelopes to indicate the shape and number of tokens included inside; (3) the collapse of the envelopes into clay balls or tablets bearing impressed signs; and (4) the elaboration of the impressed signs into incised pictographs.¹²

Braidwood and Bell indicate that the development of writing can be traced step by step from the pictographs to the cuneiform writing.¹³ Modern language is traceable back to the cuneiform.

Conclusion

This account of the evidence that the "roots" of accounting can be traced to prehistory raises some very interesting questions for accounting theorists. Can such deep roots exist without accounting being quite fundamental to the advancement of the human race? Have accountants generally viewed their function too narrowly?

FOOTNOTES

¹Boyer, p. 5; Seidenberg.

²Conant; Kalmus; Bell.

³Ball, p. 223.

⁴Ball, p. 3.

⁵Boyer, pp. 1-2.

⁶Scott, p. 1.

⁷Schmandt-Besserat (1977a), (1977b), (1974), (1979a).

⁸Schmandt-Besserat (1980), pp. 360-361.

⁹Schmandt-Besserat (1980), pp. 360, 361.

¹⁰Schmandt-Besserat (1980), pp. 365, 368.

¹¹Schmandt-Besserat (1980), p. 371.

¹²Schmandt-Besserat (1980), p. 385.

¹³Braidwood, p. 151; Bell, pp. 27-28.

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