Natural path to the understanding and use of accounting: Barter bookkeeping and the double entry system, the case of Benjamin Barns Sayle

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ABSTRACT
Barter bookkeeping was employed well into the 20th Century in some rural communities of the U.S. Those who used it often did so because it was adequate for their needs, not because they were unfamiliar with the double entry system. One such individual, Benjamin Barns Sayle, employed both systems simultaneously, to address the needs of his different enterprises. His story and records illustrate an almost natural progression in the understanding and use of accounting records from the limited, simple but effective barter bookkeeping system to the more expansive double entry system by individuals. Sayle's experiences suggest that by emphasizing familiar barter transactions, students, even at the elementary school level might easily grasp some fundamentals of making journal entries. This paper suggests that simple barter bookkeeping exercises may be useful in engaging elementary school children in the AICPA 360 Degrees of Financial Literacy Program and in developing a stronger appreciation for accounting. The simplicity of the system makes it easy enough for teachers with little background in accounting to grasp and employ as an enhancement to their existing curriculum.

INTRODUCTION
Barter is often one of the first forms of business negotiations that children participate in. Many children negotiate with their parents over what activities the child must perform in order to gain an allowance, some object, or participation in some activity. While leverage on the part of the child compared to that of the adult may be minor, the understanding that some exchange is being made is clear and easy for most children to grasp.

The immediate concern in a barter arrangement is the equitable exchange between parties. If that exchange includes a credit arrangement, some understanding of accounts receivables and payables is required and some written record is advised. Even for the novice that need should foster some appreciation keeping records.

Developed centuries ago, barter bookkeeping continues to satisfy the rudimentary needs of simple barter activities for individuals who earn so little.
overall that tax filings are not required, such as most children. Barter book-keeping is a partial system in which memorandum entries are made, combined accounts receivable and accounts payable ledgers are kept, but other assets and liabilities and owners’ equity are not recorded and no attempt is made to accumulate revenues and expenses [Flesher 1979]. The story and records of Dr. Benjamin Barns Sayle in the late 19th and early 20th Century illustrate an almost natural progression in the understanding and use of accounting records from the limited, simple but effective barter bookkeeping system to the more expansive double entry system by individuals. The entries used by Sayle as medical practitioner and to a lesser extent, dry goods salesman, and finally as banker demonstrate a person’s mastery, choice, and use of accounting practices to suit a variety of needs. Sayle’s experiences suggest that by emphasizing familiar barter transactions, students, even at the elementary school level might easily grasp some fundamentals of making journal entries. This paper suggests that simple barter bookkeeping exercises may be useful in engaging elementary school children in the AICPA 360 Degrees of Financial Literacy Program and in developing a stronger appreciation for accounting. The simplicity and immediate usefulness of the barter bookkeeping system could ease
apprehension about and build appreciation for accounting as students progress and consider career choices. Confidence in understanding simple entries should also help students to better understand more advanced concepts in accounting and finance, hopefully improving their money management skills as they mature.

**DR. BENJAMIN BARNES SAYLE**

Benjamin Barnes Sayle was born in the small town of Oakland in northwest Mississippi on June 30, 1858 only a few years after the Choctaw Indians had ceded the region to the US Government. According to a telephone interview with namesake grandson, Ben Barns Sayle, CPA, of Greenville Mississippi, who referenced family genealogy records, the Sayle family has long prized education. Sayle along with three other of his eleven siblings earned medical or dentistry degrees from the University of Louisville in Kentucky. One of Sayle’s sons, Ben’s father, also became a medical doctor and practiced in the same Mississippi community as his father.

Sayle would have only recently turned twenty-years old when an extremely serious yellow fever epidemic struck the hot, swampy, densely forested region in the late summer of 1878. Loss of life affecting Northern Mississippi families from the recent Civil War was minor in comparison to the thousands of lives lost from “Yellow Jack” in the few weeks between August and late October. Gravestones in the Yalobusha County towns of Oakland and Coffeeville verify that dozens of community members succumbed to the plague including several Sayle family members. The experience may have been a deciding factor in Sayle’s choice of professions. When Northern Mississippi was plagued again by malaria in the 1890s, Sayle would still have been only one of a handful of physicians in the immediate area.

Small town doctors such as Dr. Sayle usually did not have the luxury of having a partner so days were often long and office hours were inconsistent. Without a local hospital and faced with sometimes treacherous travel conditions, most medical procedures were performed at patient’s homes. Throughout almost all of Dr. Sayle’s career, he traveled on horseback or in a horse-drawn buggy to get to his patients’ homes. Even his physician son traveled on horseback or by buggy until after WWI.

Woodward’s [1951] general blueprint for survival or success as a planter described the experience of many prominent late nineteenth-century Mississippi planters whose interests and holdings actually made them some combination of planter and merchant, banker, or lawyer. Woodward observed that those who “hung onto or inherited land and prospered are known to have moved to town, opened stores, run gins, compresses, and banks, invested in railroads and mills, and played the speculative markets.” Surviving evidence substantiates that Sayle fit neatly into the description of a combination businessman. When the Bank of Coffeeville was incorporated in 1901 with an initial capital investment of $30,000, Sayle was cited as president [New Corporations, 1901].

A set of four-hybrid daybook (combined accounts receivable and payable subsidiary ledgers) now located in the archives library at the Uni-

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The Accounting Historians Notebook, October 2007
versity of Mississippi chronicle the daily business records of Sayle's medical practice, veterinary services, as well as a small part of his banking ventures from 1903 through 1918. The volumes, ranging in time from two years to seven, indicate that Sayle was a busy person, dealing with from 698 individuals, families, and responsible paying parties shortly after the turn of the century and only down to just over 600 different client/creditors seven years before his death on December 10, 1925 at the age of 67.

Deciphering Sayle's shorthand revealed that little difference in fees was made for the inconvenience of making house calls over office visits, except when the doctor had to stay overnight to tend to a patient. For that major inconvenience he twice charged $5 in addition to the regular fees. Typical fees for visits were $2 to $5. Throughout the years 1903 through 1918, fees remained fairly consistent, only taking a slight rise near the end of the period. Some of the services and charges noted in the accounts were: extract tooth $1, extract 4 teeth $2, circumcising baby $5, lancing boil $1, ear operation $5, urinalysis $1, attend horse $1, castrate horse $5, amputate arm $5, dress foot $1, voxinate (This spelling was noted in several entries. It might refer to vaccinate.) children $1, and remove cinder from eye $0.50.

Two types of entries were made throughout the 1903-04 book for services where no fee was noted. The first type of entry was for certificates of health that were probably forwarded to life insurance companies. Three memos are embedded among the pages of the daybooks either requesting information regarding a person's health from Sayle or requesting more information on a reported death. The second type of entry without a noted corresponding charge was for services that were all to be charged to the Illinois Central Railroad. Working for a railroad was obviously a dangerous occupation because entries made by Sayle in this category in the 1903-1904 book include: dressing foot for Joe Mc, amputation of Walter Dancy's arm and amputating leg, Wallace's.

The "General Index to Land Deeds, Direct and Reverse Transactions of Yalobusha County" on reserve at the Coffeeville Court House provides much useful and interesting information regarding the activities of Sayle the banker. Even prior to the formal incorporation of the bank, Sayle negotiated and signed for many loans to assist farmers to operate and purchase property by financing throughout planting seasons. A loan transacted between Sayle and Wm. C. Usrey and wife filed on April 16th, 1898 for $147 and signed by Usrey with an "X" illuminates the common terms of the day. It stated that should Usrey fail to complete payment by the 1st of November, 1898, or appear to be attempting to sell off assets to avoid payment and/or leave or appear to leave the community prior to payment, Sayle could immediately require the sale of the land, along with other property: livestock, cotton, corn, and seed. Property named in the deed included: 40 acres of land, one bey horse thirteen years old more or less named Printer, one black moorly cow with white face ten years old more or less, one dun colored cow seven years old more or
less, one red and white spotted cow three years old more or less, one white cow three years old more or less, one red brindle cow three years old more or less, one heifer two years old more or less, black with white on back; three calves of the above described cows; one yoke of oxen each four years old more or less, one red, one red with white face; and all crops: cotton, corn, cottonseed and other produced in the year 1898.

For any year between 1898 and 1910, Sayle, personally on behalf of the bank, signed for no less than ten such outstanding deeds. Amounts owed to the bank ranged from $102 to $600. In all cases, collateral was no less than 40 acres and listed all livestock in the debtor's possession at the time of filing. Ages, sex, markings, and names of livestock were always carefully recorded. Horses, mules, and ponies always had a name, cows sometimes did. Deeds always recognized the creditor's right to seize any and all property listed at any time prior to the due date, should the creditor have any indication that the debtor was planning to renege on the loan.

Original promissory notes were usually signed only a few days prior to filing. In 1906, Sayle even acquired a promissory note on New Years Day. Deeds were filed anytime between the end of October and the middle of June each year. Most were filed before April. Since all deeds were payable in full by a named date in early November of the same year, it is evident that the intent of most loans was to extend credit for one planting season and that crops were usually harvested and sold by November.

Because of the high illiteracy rate in rural Mississippi in the early part of this century, there remains some question whether debtors were aware of the true extent of the documents they were signing. After the county clerk would inscribe and witness the terms and names of the related parties in the General Index the related parties would indicate their participation by signature or X. Not one debtor over the years 1898 through 1920 did more than scribble in a small "X". The overwhelming advantage given to the creditor in the deeds was substantiated by the 1906 "false pretense law" which remained on the books until 1930. The law provided for criminal punishment for tenants who abandoned a contract after accepting even the smallest of advances. Describing the false pretense law, McMillen [1989] wrote: "Together with the state's other restrictive labor statutes, it served as a legal framework for involuntary servitude." Even if the debtors had been aware of the full extent of their situation, their alternatives may have been extremely limited.

The Bank of Coffeeville under the leadership of Sayle appears to have been a reasonable community neighbor for the times. No deeds recorded and on file in Coffeeville indicate that a "foreclosure" ever occurred. Several deeds include paragraphs recognizing the extension of an existing debt in addition to loans for current plantation supplies. When a debtor was able to pay his debt in full and on time, which was not uncommon, it is clearly acknowledged in the official court house records by a memo to that effect, written, dated and signed by Sayle in the left margin.

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All loans negotiated by Sayle and filed at the Coffeeville courthouse between 1898 and 1910 included implicit interest rates with the exception of one. In that document recorded March 25, 1899, R.L. and H.R.H. Simpson agreed to pay the original balance of the loan ($600) and interest at 10% per annum due January 1st, 1900. That is also the only deed to recognize the exception of a piece of property, a specific ten-acre plot, belonging to the debtors from attachment by the creditor. According to the land description included in the deed, the Simpsons had 400 acres under their control. Making the assumption that the Simpsons enjoyed the benefit of more education and/or savvy than some of the other debtors in order to come into possession of such a large property in the first place, they probably had a better understanding of the agreement and the possible advantages of early repayment.

While banker Sayle negotiated loans, merchant Sayle supplied needed dry goods to the loan parties. The daybooks show that Sayle supplied clients with items such as pairs of shoes, shirting, calico, sugar, coffee, meal, and thread. Daybook records note several purchases of goods from local merchants by Sayle and sales of the same items to other individuals within a couple days. Calculation of the difference between the price paid for merchandise by Sayle and the price charged to clients suggest that Sayle would mark up the price, sometimes as much as 55% but usually in the range of ten to twenty percent.

Accounting Practices: Comparison of Sayle’s daybooks and deeds reveals that Sayle’s medical, bank, and retail customers were often the same people. Entries for Sayle’s different enterprises were freely intermingled in the books carried on his calls. Sayle often took care of a patient’s medical needs, negotiated the sale of some small dry good item carried along in his buggy, then conducted transactions on behalf of the bank. The more cramped style and the occasional rough lines jutting out from letters in the daybooks belie busy person, probably recording his transactions as his horse cart traveled along.

Sayle’s daybooks weren’t elegant but they were extremely practical. Each of the daybooks begins with a customer/creditor chart of accounts followed by intermixed cash, accounts receivable and accounts payable listings for each account. Superior to a simple journal, the use of a modified ledger format in the daybooks allowed for a handy traveling reference for each account. Most entries referred to specific medical services or sales of listed items to customers. The negotiated value of items taken in barter was always carefully noted and provided a handy reference to Sayle for future transactions.

The daybooks probably served as Sayle’s sole source of records when he first started out as a medical practitioner. Referencing the chart of accounts, Sayle would have been able to quickly locate the client’s page, peruse the client’s balance, and make additional entries. The simple bookkeeping required no further transcriptions, was quick and easy to maintain and understand and adequate for Sayle’s needs. The simple volumes would have been small enough to fit in his medical bags.
without displacing precious space for medical supplies.

Without a need to account for income for tax purposes or provide a balance sheet for creditor purposes, Sayle’s use of barter bookkeeping for his medical practical was an economical and efficient choice. His use of a chart of accounts and journal entries demonstrate an appreciation of the necessity of maintaining good records and also mastery of doing so as his needs required. Recognizing the need for additional and more formal records in the banking enterprise, Sayle’s familiarity with making entries and interpreting records under his personalized barter bookkeeping system probably made the transition to double-entry accounting less of an introduction to a new system and more of an extension of a familiar one.

Posting checkmarks do not support this assertion but it is likely that banking entries were transferred from the daybooks to bank ledgers on a regular basis. Nothing as sophisticated as numbered receipts is indicated in the daybooks. Receipts may not have been used for the medical practice. Loan payment receipts may have only been available at the bank site and would have been noted in the ledgers. Sayle made stabs at trying to alphabetize accounts in the daybooks but generally abandoned those efforts in deference to necessity. The need to simply add new accounts as they were generated or to carry over an account when no space for it remained in a previous volume quickly won out over tidiness. Sayle would find a client record by referring to the most recent volume, looking for the name in the chart of accounts and working backwards through previous uncompleted volumes until it was found. More active accounts might have records in several locations in a volume, a continuing page being generated as the previous one was filled. Balances were noted infrequently and not automatically when an account was moved to a continuing location.

No indication of controlling accounts exists in Sayle’s daybooks. Record tallying did not adhere to any strict fiscal timing but seemed more driven by when the last account in a book was forwarded. The only tallies in the daybooks were accounts receivable and cash collections for medical services. There is no indication that Sayle summed the value of small bartered items received in payment for medical services. Those items were probably taken home or used in barter at a later stop or at a local store. The value of larger items, usually bales of cotton, was traced back to loans after weights and values were established at local gins. In December 1904, Sayle did, over several sittings using several different pens, tally cash collected for medical services: $1,990.60.

Forms of Payment: Sayle’s 1903-04 daybook reveals that payment for medical services at that time was nearly evenly divided between cash and barter. In addition, produce sales or barter was directly related to almost all loan payments. Appropriately, Sayle made careful notations regarding produce volume and market prices. The entries bear a practical similarity to deposit slip entries today where types, characteristics, and amounts of transacted instruments are listed. For example, a January 22,
1903 entry debiting the account of Col. E.S. Carpenter shows a bale of cotton being accepted in partial payment of an outstanding loan. The bale weighed 379 lbs. and since the negotiated rate for the cotton was noted at (8 5/8), Carpenter’s note was reduced by $32.69. A few weeks later, on March 5, 1903, Sayle wrote down (9 1/2) in an entry of another cotton sale regarding Col. Carpenter. The account, which is typical of entries noted by Sayle, appears in Figure 1.

Chickens were among the items Sayle commonly accepted as payment. In 1903, two credits to different patients in the same month reveal: four chickens $.75, and six chickens $1.20. No mention was made in the customer accounts as to whether the chickens were alive, to be delivered to Sayle, or were plucked and dressed.

Sayle’s collection records demonstrate restraint and flexibility. Medical bills were sometimes allowed to build up to a period of months. A.S. Riddick finally was able to finish paying off his seven and one-half month old account pertaining to the treatment of his wife and baby, both ill since March 5, 1903 in October of the same year by performing five days of labor for Sayle and trading 22 bushels of corn. The credit given for the total five-days work was ten dollars, the corn eleven dollars. Payment by plantation owners often was received in the form of cash or cotton. Some of the other forms of payment from patients or their responsible parties in Sayle’s 1903-04 daybook reveal a check for $33.00 and fish for $1.00. By 1916 Sayle was receiving most of his fees in cash or by check. Barter was still accepted in cotton and corn but the number of those transactions had greatly declined.

**Perspective and practical implications for today:** The records of Dr. Benjamin Barns Sayle provide a window into life in Mississippi in the late 19th and early 20th centuries. Alone, Sayle’s records and deeds on file do not tell a reader whether Sayle was a competent physician or had a good bedside manner. They do indicate that as a banker he was fair in his practices, offering competitive and reasonable terms for the times.

Sayle’s records are a testament to a well-educated man who chose to employ forms of accounting that best suited the needs of his business enterprises. By the late 19th century, knowledge and use of double entry bookkeeping was widespread but use of barter bookkeeping persisted because for many enterprises, the partial system was adequate. Sayle’s daybooks suggest a strong appreciation for ease, brevity, and functionality in record keeping. Sayle’s use of barter bookkeeping for his medical practice in a time prior to individual income tax accommodated his need to record outstanding bills and subsequent payments by clients. The records were simple, practical, easy to understand, and adequate for his needs.

Although limited in scope, the barter bookkeeping system used by Sayle for his medical practice provided a foundation for the use of debits and credits, ledger accounts, and a sense of familiarity as Sayle added banking to his activities. The transition from barter bookkeeping to the more comprehensive double entry system may have almost seemed like simply adding
extensions, i.e., income statement, balance sheet; to meet the needs of the larger enterprise shared with other principles. Recognizing this ease of transition, simple exercises could be encouraged in elementary classrooms today to help students appreciate accounting records and to put them at ease in making simple and limited entries. For example, students could be asked to record the exchange of some simple chores at home for some remuneration from their parents. Keeping track of the exchanges over time would help the students to understanding the idea of credit, would put them at ease in the basics of debits and credits, and would give them some simple practice in addition and subtraction as they tally the debits versus credits to determine when exchanges are complete. Students might also be asked to make simple journal entries regarding how they spend or invest their allowance. Encouraged to write their entries on the blackboard and describe their entries to the class could strengthen understanding and could be entertaining for the students as they related their chores exchanged for some reward and perhaps some pending obligation. Along the same lines as Dr. Sayle, students would probably find that after becoming accustomed to keeping simple barter bookkeeping type records, accounting records in general would not seem fearsome but instead very practical and useful.

An added benefit of this approach is that it is simple enough that elementary school teachers who may themselves not be well versed in all aspects of the double entry system, given a little instruction supported perhaps by a guest session on the topic in class led by a local accountant, might feel comfortable enough to incorporate simple accounting entries as part of their existing class activities. The activities of writing simple journal entries on paper, on the board, and the discussion by the children of their entries could enhance several existing requirements of elementary school curriculum: arithmetic, reading, spelling, writing, and oral presentations. The activity of figuring out the correct journal entry posed by the teacher or another classmate, and writing on the board could even be used as a team game.

With student interest peaked, some class members might be inclined to ask questions about summing the entries under different categories: accounts receivable, accounts payable, cash, etc. This interest in accounting as a practical user-friendly tool should encourage students, and their teachers, to learn more about accounting practices and the double entry system. With a sense of comfort in at least some basic entries and an interest in knowing more, more students might be inclined to pursue accounting as a profession in later life.

REFERENCES