Chambers on Accounting

Logic, Law and Ethics

Edited by
R. J. Chambers and **G. W. Dean**

Routledge New Works in Accounting History

New Works in Accounting History

Richard P. Brief, *Series Editor*

Leonard N. Stern School of Business
New York University

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Volume 6
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R. J. Chambers
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G. W. Dean

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Raymond John Chambers, b. 1917, Newcastle, d. 1999, Sydney, Australia
AO., B.Ec., D.Sc.Econ.(Syd.), Hon.D.Sc.(Newcastle),
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PREFACE

All deliberate choices, decisions and actions stem from what is known, as demonstrable fact, about the past and the present. To get at those facts in financial matters is the function of accounting. But that function has been, to a large extent, eclipsed by rules of convenience, habits and traditions that seriously distort the representation of past and present facts, and hence, the course of informed administration and investment.

The papers reproduced in Chambers on Accounting Vols I-VI aimed to clarify and rectify that situation. They and other work led to a system of continuously up-to-date, money-equivalent accounting of incontestable relevance to the management of solvency, profitability and financial flexibility. Of other schemes proposed before and during those years, no such claim could be justified. The number and variety of times and places of delivery and publication signify a wish to give wide exposure for criticism, correction or rejection.

The first part of this volume contains the texts of some 26 papers and addresses presented since 1986, the date of publication of Volumes I-V. They deal with varied aspects of accounting - logical, ethical, psychological, mathematical, economic, regulatory - which are disregarded or noticed only cursorily in the professional and theoretical literature.

The second part, "Aide Memoire", gives in chronological order the places and circumstances which gave rise to the contents of Volumes I-VI and to other publications and unpublished material over some 60 of the most turbulent years in the history of accounting. The contents of Volumes I-V were grouped by material content. The references to volume-location given in this volume ease access to any item reproduced. Where detected errors in the original sources have been corrected.

As this manuscript was being completed Ray Chambers died from the effects of a fall. Fortunately for this project, he had maintained immaculate correspondence records throughout his professional life since 1947. The final edits, to the Aide Memoire in particular, were made possible because of those immaculate correspondence files. The files and other valuable archival materials are presently being restored by The University of Sydney and they should provide an invaluable source of reference material for accounting historians.

THANKS

Thanks to the careful craftsmanship of Angelika Dean in editing the original unpublished manuscripts and aide memoire and for the meticulous care in seeking out and eliminating errors in the published works.

Thanks also to the typesetting and formatting skills of Ron Ringer.

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OBITUARIES

Vale - Raymond Chambers, an editorial by Graeme Dean and photograph reproduced from *Abacus*, February 2000, i-iv

Eulogy delivered at the funeral of Raymond John Chambers by Peter Wolnizer, reproduced from *Abacus*, February 2000, 1-3

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ABACUS, Vol. 36, No. 1, 2000

EDITORIAL

It is with much sadness that this issue of *Abacus* contains the eulogy delivered by Peter Wolnizer at the funeral of one of the world's accounting giants, Raymond John Chambers, the founding editor of this journal. Born in Newcastle in 1917, the son of a Yorkshire coalminer, Chambers died in Sydney aged eighty-one. He matriculated in 1934 and entered the University of Sydney to study economics part-time, graduating a Bachelor of Economics in 1939. After a stint in business and government at the Prices Commission during the war, Chambers moved to the management education field. This was the forerunner to his appointment in 1953 as the first full-time lecturer in accounting at the University of Sydney, associate professorship in 1955, and appointment as the university's foundation Professor of Accounting in 1960.

An inspiration to students, staff and those who read or heard him, the profession is the poorer for Chambers' passing but immeasurably richer for the contribution he made to the discipline of accounting. From the outset his research output was extensive, but it increased dramatically in the 1960s and his fame spread widely. By the end of that decade he was regarded as one of the leading international accounting academics. In all, Chambers published more than two dozen books and monographs, and over 200 articles. His interests ranged across various cognate disciplines—sociology, psychology, history, the philosophy of science, law, economics, accounting and mathematics. Chambers was truly, as leading Italian accounting academic Giuseppe Galassi recalled in a moment of reflection upon hearing of his death, 'a man of science, a Renaissance man'. This captures the essence of his contribution. Quantification underpinned the Renaissance. And matters of accounting valuation concerned Chambers throughout his academic life. He perceived accounting as an art that was more than simply the product of current commercial exigencies. He sought to raise the profile of accounting, stressing the need for it to possess scientific underpinnings to be worthy as a university discipline. Beautifully crafted prose added to the empirically and analytically based scholarship of his works. Some have claimed he could have been a successful literary writer.

This issue of *Abacus* contains a biography of another accounting great, John B. Canning. Written by Steve Zeff, that piece highlights Canning's vision to make accounting an effective measuring device, grounded in economics, and essential in assisting the ordering of commercial affairs. Here there is much similarity between the ideas of Canning and Chambers. Up to the time of his death Chambers was convinced of the need to radically reform accounting. He sought with missionary zeal to rid the professional accounting standards of the many infelicities that he had exposed in his treasury of writings over the years (see the Garland anthology of his works, *Chambers on Accounting*, vols I–V, 1986, and vol. VI, forthcoming, 2000; his autobiographical article, 'An Accounting Apprenticeship', *Accounting History*, 1991; and Frank Clarke, 'A Treasury of Accounting Thought . . .', *Abacus*, March 1996 and a festschrift *Abacus* issue, December 1982, to honour Chambers upon his retirement). Seeking ways to eliminate observed defects in extant accounting, he devised and coined CoCoA, based on recording assets and liabilities using up-to-date monetary equivalents (market selling prices). His system entailed recording changes in the selling prices of a firm's net assets as income as well as adjusting overall income for the effect of changes in the general level of prices on a firm's opening net assets (his capital maintenance adjustment). His last paper, aptly published in the October 1999 issue of *Abacus* and titled, 'The Poverty of Accounting Discourse', captures his life-long crusade to rid the practice and teaching of accounting of its infelicities.

Chambers leaves many legacies, including an international accounting journal, *Abacus*, that after thirty-six years continues to be highly respected. The October 1999 issue of *Abacus* noted that, as the foundation editor, Chambers had continuously guided the journal's development, and he remained an active editorial consultant until he died. When *Abacus* was launched in 1965 there were only three other international academic accounting journals, *The Accounting Review, Journal of Accounting Research* and *The International Journal of Accounting and Education.* Initially Chambers alone administered this new international journal. Closely aligned to the university, it was published and distributed by Sydney University Press. It proved an immediate success, with an impressive overseas circulation at its peak spanning nearly fifty countries.

The ongoing success of the journal is a major achievement, attributable in large part to Chambers' vision and expertise in perceiving the need to push the boundaries of accounting research by dedicating the journal to publishing 'exploratory, constructive and critical articles on all aspects of accounting and on the phases of the theory and administration of organizations and of economic behaviour generally which are related to accounting, finance and business studies'.

Another major legacy stemming from Chambers' lifelong crusade is that teachers of accounting should seek to: educate rather than train; inculcate in students a sense of inquiry in their discipline; eradicate dogma and stress the need for accounting to be recognized as means to an end; stress that, as a metrical information system, accounting should adhere to the principles of measurement and provide information useful to the purposes for which accounting data were intended—namely as indicators of profitability, solvency and liquidity.

A better appreciation of all of Chambers' legacies, however, must be left to historians to piece together those factors influencing Chambers' works. Facilitating this are the extensive Chambers archives (including fifty years of personal correspondence) presently being created at the University of Sydney. This material covers the most turbulent years in the history of accounting.

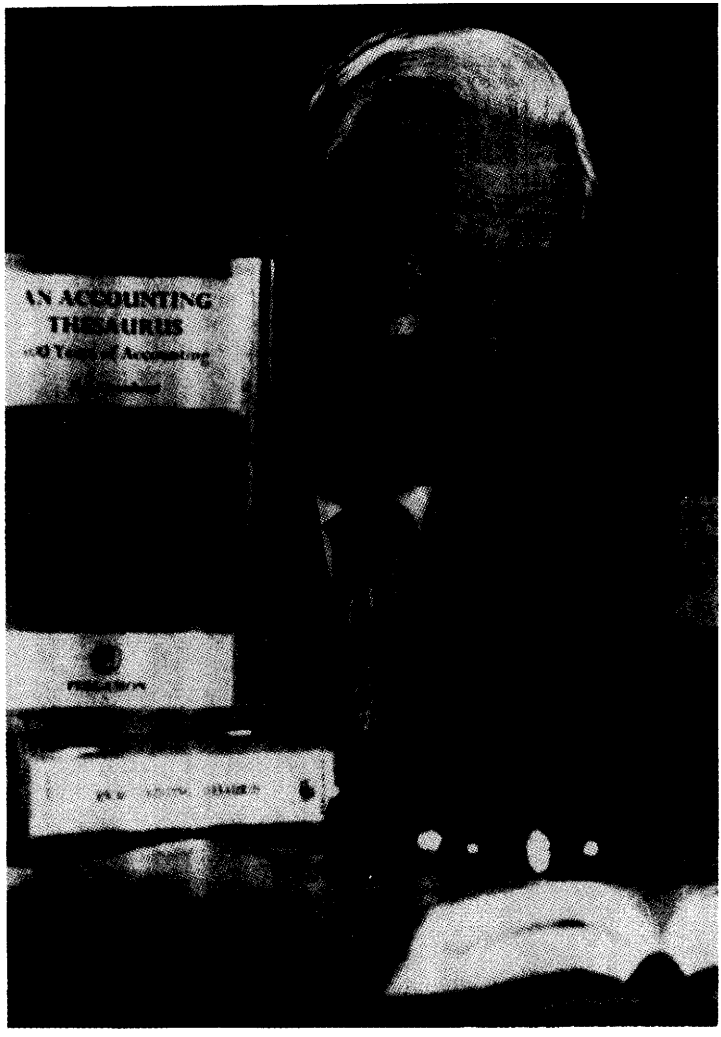
Since 1941, Chambers had an unbroken association with the Australian Society of Certified Practising Accountants (formerly the Commonwealth Institute of Accountants, and more recently the Australian Society of Accountants). He gained life membership in 1979. He served on numerous committees over this period, including the Commonwealth Institute/ASA Research Committee (1949–53), the ASA National Disciplinary Appeals Committee (1984–90); N.S.W. Divisional Councillor (1965–79) and State President (1975–6); National Councillor (1972–9) and National President (1977–8). He was appointed over that time to significant governmental positions, including: member of the 1971–3 New South Wales government's Corporate Affairs Advisory Committee; chairman of the New South Wales government Accounting Standards Review Committee (1977–8); committee member of the Australian government's Committee on Overseas Professional Qualifications (Accountancy) from 1979 to 1982. Peter Wolnizer's eulogy refers to numerous other professional achievements and awards.

Chambers' passing is a tragedy for those involved in maintaining the editorial rigour for which the journal is known. Chambers possessed many attributes, amongst which were the abilities to relate the seemingly unrelatable, and to appreciate how an article could be significantly improved by explaining how the specifics might be used to highlight more general issues pertinent to improving the accounting discipline. As editor I shall miss especially his inquiring, insightful mind and invaluable editorial advice.

Personally, I shall miss him dearly. More than a mentor, he was a colleague whom I admired for over twenty-five years.

Ray Chambers was regarded by all as one of nature's gentlemen. A privately religious, devoted family man, he is survived by his wife Margaret, daughters Margaret and Rosemary, son Kevin and several grandchildren.

Graeme Dean
University of Sydney
September 1999



Raymond J. Chambers
1917–1999

ABACUS, Vol. 36, No. 1, 2000

P. W. WOLNIZER

Raymond John Chambers

Born on 16 November 1917 in Newcastle, Australia, and educated at Newcastle Boys High School and the University of Sydney, Raymond John Chambers will be remembered with great respect and affection as an eminent and engaging accounting educator and scholar. A university scholarship enabled him to enrol as a part-time student in economics; he graduated in 1939. After ten years of experience in government, commerce and industry, he joined the staff of the School of Management of the Sydney Technical College and devised what was possibly Australia's first program of management studies.

In 1953 he became the first full-time lecturer in accounting in the University of Sydney and was appointed to the university's first Chair of Accounting in 1960—a position he occupied with great distinction for twenty-three years until his official retirement in 1983. He continued to serve his university as an emeritus professor with dedication and, as adjunct professor, contributed mightily to the academic work and professional development of colleagues in Deakin University over a decade from 1989. During his career, he was invited to be a visiting professor in twelve leading universities.

Professor Chambers wrote a dozen books and well over 200 articles, monographs and reports on accounting, financial management and the law which have been published in Australia, New Zealand, Canada, Europe, Japan, the United Kingdom and the United States of America. As an internationally renowned expert on accounting and financial management, he has for more than fifty years challenged the conventional thinking about accounting matters. Importantly, those contributions were not made in isolation from the problems of the workaday commercial world, for throughout his illustrious career he was in demand as a consultant to business firms, government agencies, professional organizations and educational institutions.

In the hope of eliminating observed defects in accounting practice, he set out to devise an accounting based on up-to-date money equivalents of assets and liabilities and income calculated in dated real terms: he called the system 'continuously contemporary accounting', known internationally by the acronym CoCoA. For that rigorous, scholarly work, Ray Chambers earned the degree of Doctor of Science in Economics of the University of Sydney, was awarded a gold medal by the American Institute of Certified Public Accountants, received three citations from the Australian Society of Certified Practising Accountants, and was elected

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Eulogy delivered at the funeral of Raymond John Chambers, 17 September 1999.

as a Fellow of the Academy of the Social Sciences in Australia. While its general thrust remains controversial, many elements of CoCoA have been, and continue to be, absorbed into accounting doctrine and practice, and taxation and other laws requiring the determination of wealth and income.

In 1976, Professor Chambers became the first person from outside North America to be appointed as the Distinguished International Lecturer in the United States by the American Accounting Association; and, in 1991, to be awarded the most prestigious award of that association—the Outstanding Accounting Educator Award. In the same year, he was inducted into the Accounting Hall of Fame in the Ohio State University. For his service to commerce and education, particularly in accounting and business management, he was made an Officer of the Order of Australia in 1978.

Internationally honoured and respected by academic and practising accounting communities alike, Professor Chambers was one of the very few academics to head a major professional accounting body. He served as an officer of his professional association, the Australian Society of Certified Practising Accountants, for some fifteen years, was its national president in 1978, and was honoured as a life member in 1979. The motto of the Society is 'Integrity'—a quality personified with dignity and grace by Ray Chambers in his intellectual, professional and personal pursuits and conduct.

One of the early academic accountants in Australia, Professor Chambers was elected as the Foundation President of the Accounting Association of Australia

and New Zealand in 1960, made a life member in 1983, and in 1996 received that association's inaugural award for outstanding contributions to the accounting research literature. Always seeking to enrich the dialogue between academic and practising accountants, he established the Sydney University Pacioli Society in 1962. In 1965 he became the founding editor of *Abacus*—Australia's leading international academic journal of accounting—and led the development of that journal as editor until 1975, and supported it as consulting editor since then.

Several of Professor Chambers' students now hold professorial chairs in Australian and overseas universities. Three of those universities have conferred upon him an honorary doctorate—of Science (by the Universities of Newcastle and Wollongong) and of Laws (by Deakin University). Over twenty-six years, it has been my much treasured honour, great privilege and pleasure to be Ray's student and colleague—but most of all his friend. For Ray Chambers was far more than a great Australian, inspiring teacher, internationally eminent scholar, and highly esteemed colleague. He was a visionary whose ideas and ideals will yet beget the renaissance of accounting; whose personal strength of character and integrity will be the guiding spirit for many of his students and colleagues; and whose human love, passion and loyalty will abide forever in the hearts of his wife, family, and those of us who loved and respected him.

To his wife Margaret, daughters Margaret and Rosemary, son Kevin, grandchildren and all family members, I wish to convey to you the heartfelt sympathy and understanding of all here gathered—and, indeed, of the dozens of colleagues

and friends of Ray who have expressed that wish this week from all around the world. In the words of St Paul to those who mourn, 'May the God of all comfort give you His peace which passeth all understanding'.

Ray, we thank you and we thank God for you.

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PART 1: SELECTED PAPERS

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ABACUS, Vol. 34, No. 1, 1998

Wanted: Foundations of Accounting Measurement

Key words: Accounting; Foundations; Measurement

INTRODUCTION: **1997**

From time to time for over 150 years pervasive flaws in accounting thought and practice have been brought to notice. The principal focus of attention has been the almost limitless array of valuation (or quantification) rules that have emerged under the widely fostered view that each mercantile firm may choose (and vary, as it pleases) the combination of rules that its accounts will follow. For the past seventy years professional and regulatory bodies have affirmed the desirability of 'reducing the variety' of those rules. But time after time the task has been shirked—to the point where one of the latest major exercises simply averred that five different valuation bases (called 'attributes') are used in present practice, and their use was expected to continue (FASB, 1994/5, p. 151).

But to return to the immediate antecedents of 'Wanted: Foundations of Accounting Measurement'. In 1966 was published *A Statement of Basic Accounting Theory* (ASOBAT), prepared by the Committee on Foundations of Accounting Measurement of the American Accounting Association (AAA, 1966). This, surely, was a proper place to deal with the logical conditions of aggregation and relation —and measurement generally. But, like most other products of committees and boards in the U.S. and elsewhere, ASOBAT had little to say about accounting as measurement. Perhaps the 'Foundations' committee was set up to make good that oversight; for, if accounting could be shown, by argument and illustration, to be an exercise in measurement, nonsensical, superfluous, mutually contradictory rules could be eliminated.

The Report of the Committee (AAA, 1971), however, promised none of these things. The critique here reproduced verbatim was submitted to *The Accounting Review* in August 1972. Publication was declined. One copy of the manuscript was returned to the author with copious notations by way of objections by the referee, who, by use of the authorial 'we', appeared to have been a member of the Committee. Among the notations were the following:

> ungentlemanly, inferential and flagrantly misleading . . . rediculous and michevious [*sic*] prattle . . . The writer is either a quixotic dreamer or a heavy handed collectivist . . . Raving

> of a literate and ignorant word-jockey... the writer has distorted wholly out of context the spirit and conclusions of the report to suit his own purpose of mounting a glib, attention-getting attack on a major committee report... I'm tempted to recommend publication of this student's paper despite its many misrepresentations, flaws of exposition, emotional hostility to the Committee, and minor goofs. Someone should come along behind it, though, to clean up the mud it will sling around.

Whatever flaws the critique may have had could not match this for venom. But, that apart, rejection of the critique forestalled open debate; reinforced the use of guesswork magnitudes (e.g., discounted net cash flows) in accounts of the past; fostered the erroneous addition of past, present and future magnitudes; set a pattern of disregard for the far more disciplined examination of measurement to be found in other fields; and did nothing by way of reducing the diversity of valuation rules tolerated in present thought and practice.

Now, over twenty-five years on from the Report, similar exercises have been initiated in the United States, Canada, Britain and Australia, all on the same pattern and all exhibiting the same disregard for the mathematical and practical constraints respected in every other field of disciplined endeavour.

The rules of the game have been laid out at length in my 'Metrical and Empirical Laws in Accounting' (1991). But will they be noticed in any resulting professional discourse on measurement in Australia or elsewhere? Or will it still be possible to say: 'Wanted: Foundations of Accounting Measurement'?

2 CRITIQUE: **1972**

It might have been hoped that the Committee on Foundations of Accounting Measurement of the American Accounting Association (AAA, 1971) would have produced some conclusions in the nature of foundations; something of an elementary kind which might provide the groundwork for more elaborate or more sophisticated exercises. Its report is disappointing. It ranges over an almost limitless territory. But it finishes almost exactly where it started: 'New guidelines are desperately needed... The lack of new guidelines for accounting is the most serious problem to be faced' (p. 48). But worse than the failure of the Report to give direction is its potential for misdirection.

The Report begins with an 'adopted' definition: 'accounting measurement is an assignment of numerals to an entity's past, present and future economic phenomena, on the basis of observation and according to rules' (p. 3). This, as we shall show, is complicated and vague enough. But it is made even more vague by the following sentence: 'Under this definition, it should be pointed out, the rules employed need not be good ones and observations made need not be correct to qualify as accounting measurement'. Freed from the need to employ 'good' rules for assigning numerals and from the need to make 'correct' observations, apparently any numbers that masquerade as (look like) measured magnitudes will qualify as accounting measurement. That, of course, is the standard recipe for the success of fraudulent misrepresentation, as any reader of the history of commercial fraud will know.

But return to the definition. It allows that accounting measurement includes the assignment of numerals to an entity's past, present and future labour turnover, market share, unfilled orders, total labour force and many similar things; for, as well as I can judge, these are all economic phenomena of an entity. Yet none of them falls within the only two types of accounting system, 'equity accounting' and 'operational accounting' (as they are commonly understood), contemplated by the Committee. The definition allows also that accounting measurement includes the assignment of any kinds of numerals. But the knotty problems which confront accountants concern themselves with the assignment of numbers of dollars, not numerals at all. As I understand it, the object of a definition is to limit the scope of usage of a term so that one can come to close grips with it and make good use of it, as of a fine tool, for the purpose in hand. But the Committee's definition is so open, it provides so many things to talk about, that we should not be surprised if it comes to close grips with none of them.

Properties, Scales and Units

It would have been instructive if the Committee had begun with a discussion of measurement *simpliciter*. It is true that most of the discussions of measurement occur in the context of particular branches of science. But they have sufficient elements in common to justify some general specifications of the object and process of measuring.

In the first place, every particular measurement scheme requires the specification of the property of a class of objects which it is of use and interest to measure. 3
The Committee, almost as an aside, alludes to what might have provided such a specification: 'accounting is indispensable in measuring and reporting organizational wealth and its changes' (p. 7). But the point is not developed. What wealth is, how it is measured and how changes in it are measured are not discussed.

In the second place, every measurement scheme requires the specification of a scale of some kind which makes it possible to distinguish the extent to which every object in the class possesses the specified property. At least some important contributions to the literature of measurement distinguish ordinal scales, interval scales and ratio scales. These scales (or rather measurements taken in them) have different mathematical characteristics. As the addition of measures is so common in accounting processes, it is necessary to consider the conditions under which addition (and other forms of relation) are mathematically permissible—and in fact to stipulate the kind of scale which is appropriate to accounting. Nowhere in the whole Report is there any discussion of scales of measurement.

In the third place, every measurement scheme requires the specification of a unit in the scale, and the conditions under which unit measurements shall be deemed to be of equal significance. In brief, this requires specification of the meaning of the 'standard' unit. This is necessary since measurements may be taken in a variety of non-standard situations, such that the raw or crude measurements are not comparable or addable. Nowhere in the Committee report is there any discussion of the unit of measurement, either in general terms or in the terms appropriate to accounting measurement.

Kinds of Measures

One of the great advantages of measurement schemes is that they make possible the development and use of notions other than the simple ostensible properties of particular objects or collections of objects. Sums, averages, proportions and such notions as area, density and velocity are examples. The Committee Report touches the fringe of this 'extended' field of measurement. It distinguishes between primary measures (direct measures of properties directly measurable) and secondary measures (derived by 'algebraic transformation of a set of numbers which are direct measures of some objects or their attributes', p. 20). But the discussion is both inconsistent and incomplete.

Consider first a significant inconsistency. Among the examples of primary measures are *counts* of physical quantities, and *prices* of non-monetary goods. In respect of prices, it is said that they may be past, present or future prices (p. 20). No such stipulation is made in respect of physical counts. Either, therefore, counts and prices are not members of the same class of measures (i.e., primary measures), or both should be treated in the same way (i.e., it should be allowed that physical counts may be past, present or future counts). Did the Committee shy away from speaking of a 'future count' as a measure at any present time? If it did, it followed the course of common usage and commonsense. It is just not possible to count any future physical quantity, in the sense in which 'count' is customarily used. Recall that the definition of accounting measurement referred to 'the assignment of numerals . . . on the basis of observation and according to rules'. There can be no observation
4 of a future quantity of things. And for exactly the same reason there can be no observation of a future price.

In defence of the Committee it might be said that the phrase 'according to rules' may be construed so as to include the derivation of future prices on the basis of observed past and present prices. But, on the one hand, there are no rules by which a certain future price may be derived from observed past and present prices. And, on the other hand, if there were any such rules they could as easily (or more easily) be applied to future physical quantities. Hence the inconsistency in the exposition of the Committee would remain. But in any case, the Committee gives no treatment to the meaning to be ascribed to the phrase 'according to rules'; nor is any independent writer on measurement cited as authority or support for the idea that 'rules' includes rules for prognosticating any future quantities. Indeed, if future quantities and prices were as firm and reliable as past or present (measured) quantities and prices, the whole problem of uncertainty would have been swept away!

The inconsistent, lopsided or asymmetrical treatment (with respect to time) of physical quantities and prices appears to be an attempt to force unlike operations and results into one class of things on the ground that the elements of that class have 'numerals' in common. It is not unlike the fallacy of concluding that $2 = 4$ on the ground that $2 \times 0 = 4 \times 0$. But the incompleteness of the discussion of primary and secondary measures is even more serious.

Secondary measures are distinguished from primary measures on the ground that the former are derived by algebraic transformations of direct (primary) measures. Now, in the first place, algebraic transformations are only permissible (or

mathematically legitimate) under certain conditions. Measurements taken on scales calibrated in different units may not be added without first converting them to measurements in a common scale. Pounds sterling may not be directly added to pounds Israeli; nor dollars U.S. to dollars Hong Kong. Measurements of different properties of a set of objects may not be added. A measure of height may not be added to a measure of weight, obviously. But neither may the selling prices of some objects be added to the purchase prices of other objects, if it is expected to obtain some aggregate pertinent to any financial calculation or negotiation. It is not necessary to go more fully into the mathematical conditions under which aggregation and relation are permissible. These two examples will suffice to indicate the incompleteness of the exposition. For, at one point we are told that a 'summation of numbers in different units' is a (secondary) measure (p. 21); though what such a summation can be 'a measure of' is inconceivable. And at no point is any question raised about the legitimacy of many traditional accounting operations, such as adding market prices and cost prices in balance sheets. And nowhere at all is there any hint of a discussion of the universally known fact that monetary units, in which all things presently considered as accounting measurements are expressed, do not have the same significance from year to year. A report on the foundations of accounting measurement can scarcely be expected to get far when it disregards the most elementary rules governing addition and relation.

In the second place, the Report makes no mention of an important class of measures which the Committee might describe as secondary measures, but which others have described as derived measures. Examples are the current ratio, the debt to equity ratio and the rate of return. These are widely accepted as measures of liquidity, leverage and efficiency, respectively. Perhaps the Committee did not consider these to be secondary measurements. But it did aver that 'the significance of numerals reported in accounting is solely their significance in reaching economic decisions' (p. 23). There can surely be no doubt that the above-mentioned ratios are used in making economic decisions. It is therefore quite pertinent to inquire into the conditions under which, say, a measure of current assets may be related to a measure of current liabilities if an indication of solvency is sought. As current liabilities are amounts to be paid, the measure of current assets should surely represent what is available, in money or approximate money's worth, to pay off those liabilities. Now, observe this: no valuation of inventory at cost, or at the lower of cost and market, or at LIFO, can give any indication of the money or money's worth available to pay off any debt; and no valuation of marketable securities at cost can give any such indication in respect of those securities. Here is a quandary. To make decisions (at least some decisions) a measure of solvency is sought; but the numbers commonly reported do not enable a properly informative measure of solvency to be derived. Is something wrong with the numbers, then? Yes, indeed. They are not numbers which have 'significance in reaching economic decisions'. In fact, a number (of dollars) representing 'lower of cost and market' or 'LIFO' is *not a measure* of any describable property of an inventory.

This kind of analysis could be extended to the other ratios mentioned, or to other aggregates and differences such as net income—with exactly the same conclusion.

But the Committee makes no such analysis and reaches no such conclusion. Why? For no apparent reason, other than perhaps a determination to consider as a measure or a measurement any number which does or could now turn up in an accounting statement or calculation. It might have been expected that a discussion of such an exacting exercise as measurement would itself be exacting, would discriminate between what are measures and what are half-breed or mongrel numbers *posing* as measures. But the Report gives no satisfaction in this respect.

Measuring and Quantifying

The Committee plays fast and loose with the term 'measure' when it comes to deal with 'retrospective, contemporary and prospective measures'. It is conceivable that one may seek to *quantify* a particular property of some former but now non-existent object, and to *quantify* a particular property of some (expected) future but not yet existent object. The question is, whether such quantifications can properly be described as measurements. This may seem to be an arid question, a matter of splitting hairs. But its importance lies in the freedom or constraint with which numbers purporting to be measures may be added and otherwise related.

The operation of measuring, in the simplest of cases, entails the establishment, by observation, of correspondence between the magnitude of a property of an object and a particular point on a calibrated scale which is designed to represent various magnitudes of that property. Length and weight (or mass) are so measured. Typically the measurer does not invent the scale or the instrument of which the scale is
6 a part. He makes use of the conventionally accepted scale and the appropriate instrument or process by which correspondences between the observable and the scale are established. He must, of course, use the measuring instrument in the way in which it is used by 'competent' measurers, that is to say, by persons familiar with the instrument and familiar with the manner in which measurements so made can profitably be used.

Even in these very simple cases of measuring it is possible that 'readings' may be taken which are not measurements, but mistakes. If the zero point on a measuring rod is not at the very end of the rod, to apply the end of the rod to one end of an object whose length is to be measured will result in a mistake, not a measurement. If a physical balance is not properly adjusted before setting about to find the mass of an object (or if the butcher puts his thumb on the object pan) the result will be a mistake (or a fraud), not a measurement. If one learns that the volume of an object may be found by immersing it in a calibrated tank containing a liquid, and then goes through all the necessary steps except seeing that the object is fully submerged, the result will be a mistake, not a measurement. These may seem trivial examples. But each of them illustrates the necessity of following strictly the rules for measuring properties by specified instruments. Each of the improper operations described enables the observer to assign numbers, or numerals—but it would be fatuous to describe these numbers as measures or measurements.

For exactly the same reason, it would be fatuous to describe as a measurement of the aggregate length of a set of objects the sum of the separate lengths of the objects, if some of those lengths were measured according to the proper rules for

measuring length and some were not. Now, apply the same test to one aspect of accounting. The Committee notes that 'accounting repeatedly has been regarded as the theory and practice of measurement of income and wealth' (p. 47); and apparently it endorses this view. It does not say how wealth is measured, so we must construct some notion of this. If a man has $10,000 in cash only and has no debts outstanding, we would say his wealth is $10,000. But if he has $5,000 in cash, some bonds for which he paid $5,000 but which now stand at a 40 per cent discount in the market, and if he has no debts outstanding, we would not say his wealth is $10,000. We would say it is $8,000; for wealth, in terms of money means how much a man can now spend if he wishes. It would be foolish to say his wealth is $10,000 in the latter case, because that figure is the sum of two figures representing quite different 'properties' of the cash and the bonds. Long ago Canning (1929, p. 319) pointed out that 'the balance sheet valuations of accountants are of mongrel origin' and that diverse valuations of diverse things are added to find an asset total that, dollar for dollar, cannot have a common significance. In effect, Canning asserted that scarcely any two amounts representing asset classes in a balance sheet can be added, legitimately, to obtain a measure of the wealth of an entity in respect of those classes; and *a fortiori* a balance sheet total for assets cannot be taken as a measure of aggregate wealth. And he backed up his case with a clear identification of the diverse valuations of which he spoke. Curiously, one may read the whole of the Committee's report without getting a hint of the problem to which Canning and Sweeney and others have so sharply drawn attention. Curiously, we say, because the problem is an elementary or fundamental measurement problem.

It follows that, although accounting may be regarded as 'the theory and practice of measurement of income and wealth', accounting as it is done is not in fact an exercise in the measurement of wealth and income at all. For just as mistakes may be made in the simplest acts of measuring, mistakes may be made in the measurement of income and wealth. It is a mistake to consider the cost of an asset as a representation of or measure of the wealth (or part of the wealth) of its owner. And if mistaken representations of wealth are made at successive dates, the increment in wealth (income) during the interval will not be properly represented. The Committee apparently does not see these things as mistakes. Yet they are just the kind of mistakes which have led to the bankruptcy of many and to the costly litigation and settlements which have fallen on many professional accountants in the recent past.

Now, to quantify the elements of a future state is an exercise far more complex than the measuring of a property of a single object or the measuring of the property aggregate of a collection of objects. First, at least some of the elements of a future state are not yet existent. No number can be assigned to any property of those elements on the basis of observation. And, second, the elements of a present state which are expected to be elements of the future state will undergo changes in the interval. No number can be assigned to the magnitude of these changes on the basis of observation.

The Committee may protest that these objections overlook the phrase 'according to rules' in the definition of measurement. We have already hinted that the

reference to 'rules' relates to the rules for measuring observable objects. But the Committee would have us believe that 'there exists an extensive and well-founded body of theory concerning how to make prospective measurements' (p. 29). This is hard to believe. For, if the body of theory (whatever it is) is well-founded, one would suppose that those who know it would be perennially successful; they would never err, since they would know the future as well as they know the present. Needless to say, the Committee gives no example of such omniscient paragons. Furthermore, if there were such a body of rules for making prospective measurements, it would be expected that all competent 'measurers' would reach the same conclusion approximately about the size of some prospective magnitude; for they would only have to apply the rules to the already given past and present measures to obtain the result. But it is notorious that those who attempt to quantify future magnitudes may obtain vastly different results, as well as results which differ materially from what the magnitude turns out in due course to be.

The Committee, however, seems to have been so anxious to thrust 'future measurement' upon us that either it devised some mistaken argument to support its case or failed to see that its arguments contain *non sequiturs*. Thus: 'by the time the estimator has reacted to a present thermometer reading, that reading already is slightly in the past; yet one uses it to estimate present temperature. Therefore even when one measures present temperature, there is a slight element of futurity in the measure' (p. 29). Note the 'therefore', signifying a conclusion or inference from the previous sentence. But the previous sentence says nothing about the future.
8 The conclusion or inference is a *non sequitur*. Some pages later the Committee felt it necessary to reinforce the point; for 'some may feel uneasy about speaking of forecasts as measurements' (p. 46). The Report cites five authorities (two of them members of the Committee), none of which, in the passages quoted, gives any ground for regarding future magnitudes as measurements. It then asserts that every measurement is 'a process of estimation', 'that the difference between measurement and estimation as used in common parlance is, from a scientific point of view, merely a matter of degree' and that '"estimation" usually refers to measurement with a comparatively high range of error'. The (subtle) transition from measurement to 'estimation with a high degree of error' opens the way to including magnitudes of anticipated events in 'estimates with a high range of error'—at least so it seems. For, hey presto!, 'accordingly' the Committee's definition of accounting measurement could include reference to future magnitudes (p. 47). But the whole of this rests on the treatment of an estimate of a present magnitude and an estimate of a future magnitude as if they were the same in kind. They are not. Epistemologically, that is, in terms of what we are entitled to assert that we *know*, the two types of estimation are very different in kind. Again, the Committee's conclusion rests on a *non sequitur*.

Equity Accounting and Operational Accounting

Early in the Report the Committee distinguishes between 'equity accounting' and 'operational accounting'. Even at the outset it is not clear in what the difference subsists. It is said that equity accounting is 'aimed at reconciling the equities of

shareholders and other interested parties' while operational accounting is 'aimed at providing useful information for management and investor decisions' (p. 3). Since the class of persons who are investors includes the class of persons who are shareholders, and since shareholders as investors make decisions with the object of protecting or advancing their interests or equities, there seems to be little substance in the distinction, as far as the principles of measurement are concerned. There may, of course, be differences in the amount of detail which will be serviceable to managers and shareholders. But this does not entail any difference in the rules of measurement appropriate to the two kinds of accounting—if there are two kinds.

The Committee thinks otherwise. 'Although the objects of measurement in operational accounting are in many cases the same as those in equity accounting, the orientation and the methodology of measurement are quite different' (p. 11). Just what does this mean? If a manufacturer of tables makes thirty inch by fifty inch tables, is the 'orientation and the methodology of measurement' different for him and for the buyer of tables? One would suppose that the measurements, as measurements, mean exactly the same to both parties and would be taken by exactly the same processes or methods by both parties.

The Report later reopens the discussion of the matter with the 'balls gambit' (p. 33). This is a very curious exercise, unlike anything which businessmen, investors and accountants do. Players A and B draw balls, in turn, from two urns; the drawer of the heavier ball in each round gets the greater part of the fixed payoff for each round. There is an Equity Accountant, who seems to be a referee or judge. He weighs the balls drawn by A and B, 'using a somewhat imperfect scale' for the purpose. 'Due to the inaccuracy of the scale, Equity Accountant is allowed to adjust his reading of the scale as he thinks it necessary'. His announced result determines the payoff to A and B. A engages Operational Accountant who, using another imperfect scale, weighs the balls A draws with the object of discovering whether or not the balls in one urn are, on average, heavier than the balls in the other urn; for it would be 'more profitable' to A to draw balls from the urn containing the heavier balls. But why would it be more profitable? Equity Accountant may, in fact, adjust his readings in any way at all 'if he thinks it necessary'. Because the two 'accountants' use different scales, both imperfect (and as far as we know imperfect in different ways or in different degrees), A has no way of telling whether Equity Accountant is biased, or whether his 'adjustments' are random, or how great or small the 'adjustments' are; for A has no access to B's balls. A would be foolish to base his decision on what his Operational Accountant could tell him.

Now, notwithstanding the facts that both accountants use imperfect scales and that Equity Accountant may adjust his readings if he thinks it necessary (no grounds specified), the Committee says that both accountants 'provide information on the weights of the balls'. Surely they do not. All the so-called information is misinformation; and the payoff is based on 'fiddled information'—'the number which Equity Accountant decided to choose' (p. 34). There may be such crazy games and crazy players. But where there is no standard measuring equipment, anything can happen. That's not a game, but a gamble. And the exercise throws no special light on problems of measuring.

But it is necessary to the conclusions which the Committee expects us to accept. For, first, we are told that a shareholder can 'enjoy the benefit of the company's financial accounting system [equity accounting]' even without reading a single word of its financial reports (p. 34). This alludes to the payoff in the form of dividends. But it completely disregards the financial reports as a source of information leading to investment in a given company and to disposal of an investment when other and better opportunities present themselves. The Committee's investor is completely passive—the stock exchange is out of business!

And second, we are told, in respect of equity accounting, that

> a measurement process which is completely arbitrary and useless for any decision can be very useful if the parties agree to base the determination of their equities upon it . . . apples can be added to oranges, pound for pound, if all interested parties agree to distribute the payoff. Theoretically meaningless allocations of costs and revenues can also be done and in some cases must be done in order to distribute the payoff. (pp. 34–5)

There is confusion and misdirection in abundance here.

To suggest that a completely arbitrary process is a measurement process is offensive both to commonsense and to the Committee's own definition, which says 'according to rules'. We cannot have it both ways. Either measuring is non-arbitrary, and all arbitrary quantities are not measurements; or any old thing can be a measurement, and you, reader, could be fifty-seven feet tall. Next, to suppose that parties who divide the payoff would *agree* to accept a completely arbitrary method of determining the payoff is beyond reasonable belief. If they must put up with such a process and the result, they do so in ignorance of any way of improving their lot—not because they voluntarily and knowingly agree with the process. Next, to speak of the distribution of apples and oranges, 'pound for pound', misconstrues the problem to which the Committee alludes. A dividend when paid does not consist of a mixture of anything—every shareholder receives homogeneous dollars from any given distribution of dividends. What, in fact, is done in conventional accounting is calculate a net income in which, to use the Committee's analogy, a pound of apples is not the same pound weight as a pound of oranges. The problem of mixing different dollars is thus evaded by misstating what occurs. Next, there is no reason whatever for saying that 'meaningless allocations . . . must be done' in order to distribute the payoff. One of the reasons for looking at accounting as an exercise in measurement surely is to produce some refinement in its processes, to substitute something exact, or more exact, for arbitrary allocations which are not measurements. There can be no 'musts' about 'meaningless allocations'; what is meaningless should be weeded out of any set of practices which purports to represent what has occurred. Indeed, the Committee itself seems to acknowledge this in the next paragraph of its Report, where it says 'arbitrary allocations are to be discouraged for any economic decisions, including investment decisions by stockholders and potential stockholders' (p. 35). Now, as equity accounting yields the reports which are made available to stockholders, this remark is in direct contradiction of the spirit of the earlier remark that meaningless allocations are permissible, if not mandatory, in equity accounting.

There are indeed grounds for believing that the quality of the factual (measured) information which managers use must be the same as the quality of the factual information which investors and others use. A company is not completely independent of its stockholders and other financial supporters. It must maintain its solvency and a rate of return which, by comparison with other companies, justifies the continued belief of investors in its economic viability. If its principal financial features deteriorate, its management must take steps to restore them. By this we mean substantive steps; not the kind of steps which some seem to take—such as changing the accounting rules used (i.e., resorting to arbitrary devices and figures) to bolster the reported results and position. It should be clear that no conclusions can be drawn from 'internal' (operational?) information which will lead to an improvement in the externally reported (equity accounting) information unless the two classes of information are the same in kind, of the same quality, mutually consistent. The Committee apparently has never tried to convince a traffic officer that the speed limit was not being exceeded on the ground that the driver's 'operational information' is all that should be used in deciding the matter. Let them not try: it won't work.

In Sum

We have by no means exhausted the points at which issue may be taken with the Committee's report. But sufficient of such points have been noticed to put in serious doubt its nature and the Committee's intention. Let's recapitulate.

- There is no clear stipulation of the financial 'properties' of objects and events which decision makers (managers or investors) can properly use to make judgments about particular companies or to make legitimate comparisons between companies.
- There is no discussion of the kind of scale in which the extent of the possession of any such property by any object may or should be assessed.
- There is no discussion of the unit in which measures of financial properties are or can be expressed; and there is no discussion of the mode of measuring when the unit used at any particular time is different in significance from the unit used at a different time.
- There is inadequate discussion of the variety of measures of financial characteristics used in practice—the subaggregates, aggregates, ratios, and percentages so commonly derived and so obviously relevant to decisions or choices. The inadequacy is crucial, since there are quite definite conditions under which aggregation and relation are legitimate and their results informative. The report is perhaps more in the nature of a polemic than a survey, or an exploration.
- The whole problem of the monetary unit is evaded. On the one hand, the definition and other parts of the discussion refer to 'numerals', when in fact numerals of themselves mean nothing. And, on the other hand, in the whole Report there are only one or two places where 'dollar' and dollar signs occur, and then never in proximity to 'measure' or 'measurement'.

- By recourse to the notion that an arbitrary numeral can be a measure or measurement, it is implied that the quantities of dollars which are assigned to things in balance sheets are necessarily measures. Apparently we must not ask whether any quantitative statement is a measure (or a measurement); it is, *ipso facto*—or so the Committee would have us believe.
- The Report tries hard to make stick the idea that we can *measure* a future (non-existent) thing. A little juggling with 'estimate', in the sense of approximate quantification of an observable, turns it into estimate in the sense of prognostication. There is, of course, evidence aplenty of mistaken, loose and metaphorical uses of 'measure'. But, if we value logical rigour, as the Committee says we should (pp. 5, 37), we should take care to distinguish these usages, rather than lump them all together as if they were the same. A future quantity may be a useful figment of our disciplined imaginations. But it is not an observable—and hence, according to all writers who associate measurement with observation, it is not a measurable.
- The Committee works hard to justify the notion that equity accounting and operational accounting yield 'measures' which are different in quality and necessarily different. But the argument cannot be sustained; if even a few examples had been used involving money figures (instead of the balls gambit), it would have been apparent that the postulated differences would lead to gaps in the chain of inferences by which optimal courses of action are chosen.

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With one observation of the Committee we can certainly agree: 'New guidelines are desperately needed . . .' (p. 48). Still.

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Accounting Education for the Twenty-first Century

The task of accounting is to provide reliable knowledge. The standard textbooks and curricula give no analytical attention to what this means. They perpetuate processes that had their origins in the desire to conceal rather than to disclose. Recurrent criticism of the products of practice may only be averted if the educational establishment gives greater attention to the nature of money and prices, the conditions of valid measurement, the logic of choice, the regulation of complex processes, and the consequences of misdirected thought and misleading practices.

Key words: Accounting; Education; Vocational education.

Effective knowledge is professionalized knowledge, supported by a restricted acquaintance with useful subjects subservient to it.

A. N. WHITEHEAD (1926)

THE SEARCH FOR RELIABLE KNOWLEDGE

The last 100 years have seen accounting education advance from on-the-job instruction in technicalities to undergraduate and graduate studies in institutions of higher learning. All skilled technologies have passed through similar stages. For centuries, agricultural, medical, and engineering arts were influenced by the precepts of influential practitioners. But they were practised in a context in which direct observation could serve as a corrective or antidote to mistaken doctrine. Better knowledge and improved practices often emerged from the observations and experiences of practitioners themselves; more recently, appraisals of established knowledge and technique and innovations in both have emerged increasingly from the scientific and research establishments that serve those professions. What was regarded as reliable knowledge was not a body of 'generally accepted principles' of the kind that so strongly influence accounting practice. It was knowledge of the underlying nature of the physical and biological and social context of practice. The whole scientific adventure of the last half-millennium has had as its ideal the principle of self-correction by disciplined observation and rigorous and repeatable experiments. It is summed up in the motto of the Royal Society (1662), *Nullius in verba*, which, says Boorstin (1984), 'has been best translated, "Take nobody's word for it; see for yourself"' (p. 394).

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Of course there is no need to see everything for oneself. For many of the ideas we constantly put to use we rely on the findings of our forerunners and of experts in a variety of specialisms. From appropriate clusters of non-contradictory ideas found to be serviceable in analogous or similar settings, there may be designed and constructed simple or complex devices—machines, instruments, business firms, theories. We need only to see for ourselves, to research, when those devices lead to anomalies or absurdities. Accounting is a more or less complex device, used in settings that have legal, economic, psychological, and social elements. It employs mathematical processes and yields signals expected to be serviceable in specific ways in the conduct of financial affairs. Accounting systems might be expected, then, to be based on pertinent and non-contradictory ideas drawn from those specialisms, enriched in some sense by them all but violating none.

THE CULT OF PRIVACY

The modern accounting textbook and curriculum and the precepts they perpetuate have not been derived by these processes. The early handbooks gave extensive examples of bookkeeping, but very little by way of text explaining why the procedures advocated should be followed. They dealt almost exclusively with the mechanics of recording transactions. As the accounts of merchants were kept for their own benefit, they could keep transactions records in as much or as little detail as they wished. Accounts of
14 their investment and wealth could be kept separately, and privately. If they wished to know the extent of their wealth and their debts at any time, they could put together information from transactions records and private records and direct observation; and from direct observation the contents of the records could be corrected or supplemented.

The arts of trade and commerce have always been learned in the marketplace. A merchant appraises the opportunities the markets offer in the light of his own capacity to trade and his expectations of the outcomes of trade. Financial capacity rests on his available or accessible funds; outcomes rest on buying and selling prices. In bargaining with others 'at arm's length', what he is able to pay or what he is willing to accept are matters that he keeps to himself. They are private or personal appraisals or judgements. What he is able to pay, however, depends in part on the buying power at his disposal. That, too, he would wish to keep from others, for the advantages secrecy gives him in the cunning or crafty business of negotiation. From the direct experience of market operations and of the processes of appraisal merchants employed, their bookkeepers were insulated. The mechanics of their craft were learned in the counting house; and what they processed they obtained from transaction documents or the instructions of merchants or their managers. Perforce they accepted the words of others for what they processed; the dominance and secretiveness of their masters interfered with any possibility that they might 'see for themselves'.

The growth of industry, commerce and corporate business in the nineteenth century introduced two elements which marked the beginning of the emergence of accounting from bookkeeping. In large firms, managers could no longer see for themselves the