

**PROF. RICHARD MATTESSICH AT 95.  
HIS RESEARCH METHODOLOGY<sup>1</sup>**

**EL PROFESOR RICHARD MATTESSICH A SUS 95 AÑOS.  
SU METODOLOGÍA DE INVESTIGACIÓN**

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**ABSTRACT:**

This paper is presented as a tribute to prof. Richard Mattessich. It is written “through the eyes” of a researcher who has worked closely with him over a period of 42 years, starting attending his courses of “*Income Determination Theory*” and “*Research Methodology*” at the *University of British Columbia* in 1975. Among his huge scientific research and publications, I intend to underline these three major contributions: (i) Accounting metrics and other mathematical instruments which anticipated computer spreadsheet by 30 years; (ii). The preparation of accountants for information economics by means of analytical methods; and (iii) The proposition of the “onion model of reality” to distinguish different Kind of reality.

**RESUMEN**

Este trabajo se presenta como un tributo al profesor Richard Mattessich. Está escrito “con los ojos” de un investigador que ha trabajado estrechamente con él durante un período de 42 años, comenzando a asistir a sus cursos de “*Income Determination Theory*” y “*Research Methodology*” en la *Universidad de British Columbia* en 1975. Entre su investigación y publicaciones, más importantes pretendo subrayar estas tres contribuciones principales: (i) *Accounting metrics and other mathematical instruments which anticipated computer spreadsheet by 30 years*; (ii) *The preparation of accountants for information economics by means of analytical methods*; y (iii) *The proposition of the “onion model of reality” to distinguish different Kind of reality*.

**KEY WORDS:**

*Prof. Richard Mattessich; 95 Years; Research Methodology.*

**PALABRAS CLAVE:**

*Profesor Richard Mattessich; 95 años; Metodología de Investigación*

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1. This paper is presented as a tribute to prof. Richard Mattessich; it is written through the eyes of a researcher who has worked closely with him over a period of 42 years, starting attending his courses of “Income Determination Theory” and “Research Methodology” at the University of British Columbia in 1975.

Among his huge scientific research and publications I intend to stress and underline three major contributions:

1. Accounting metrics and other mathematical instruments which anticipated computer spreadsheet by 30 years.
2. The preparation of accountants for information economics by means of analytical methods.
3. The proposition of the “onion model of reality” to distinguish different Kind of reality.

Over a career extending back to the beginning 1940s Professor Richard Mattessich has published books and articles in the field of accounting, management science, behavioural sciences, epistemology, philosophy and history, reflecting wide interdisciplinary scholarship. To celebrate his ninety–fifth birthday in 2017, this paper aims to highlight specifically his “research methodology”, in the particular historical context, starting from the so called “golden age of *a priori* research in accounting”.

The focus is not so much on the individual book and article but on the overview of researches which involve dynamic patterns and resulting contributions.<sup>2</sup>

2. The late fifties and early sixties regarded the conceptual clarification and, above all, the rigorous formulation of the very foundations on which accounting rests. For Mattessich it was mainly methodological and analytical research and he never claimed to be an empirical scholar. But this was the preparatory phase, through the attempts of formulating accounting theory by means of a general and axiomatic framework, for the empirical research of the seventies and eighties.

<sup>2</sup> The main publications of Prof. Mattessich up to 2016 are in the References. For a complete list of research and publications since 1943 up to 2015 see Mattessich (2015 : 145 – 167).

For a Summary of Academic Honours and Awards, he has received in a long distinguished career, see Appendix A.

The “professional oriented research” lacked the rigour needed to offer a foundation for scientific generalization and testing how far extensions might be affected beyond the realm of particular problems. The “*golden age of a priori research in accounting*” supplied this kind of rigour, but in a way that often seems remote from practice; the general and rigorous terms allow a kind of inter-science cross-fertilization. The potential application is driven by problems of actual practice with a solution that is also extended and stated with sufficient rigour and generality to be understood by other disciplines.

Accounting is a methodologically oriented discipline already in Pacioli’s book on mathematics and double – entry bookkeeping, known as the Italian method. The opportunities for methodologically oriented research are also far from exhausted; let us think (a) for instance at the quasi-axiomatic method by Mattessich (1964). Chambers (1966), Ijiri (1967), Moonitz (1961) – they shared a concern for identifying a basic theoretical structure for accounting – and (b) to the needs now becoming apparent for more rigorous treatment of topics like complexity, flexibility and so on, which are increasingly being encountered in dealing with accounting and management problems in high-tech. industries.

Richard Mattessich has offered a relevant contribution by considering a series of events to be a “flow” and with the help of some axioms, definitions and requirements, built an axiomatic structure for accounting. If Mattessich, Chambers, Ijiri, Moonitz, were successful in fitting the objectives of accounting into an axiomatic framework and employing the methods of logic and algebra, many implications not then suspected could be brought to light. For instance, if it can be established that accounting or any portion of it meets the definition of a mathematical “group”, all the previously developed or proved theorems that apply to “group theory” must be true also for the “interpretation in accounting”.

The real value of *Accounting and Analytical Method – Measurement and Projection of Income and Wealth in the Micro- and Macro-Economy* (AAM) is in examining which hypotheses must be accepted before any accounting system, micro or macro, can be outlined. It clearly states also that these basic assumptions require specific purpose-oriented interpretations (cf. Mattessich 1972)<sup>3</sup>. The increasing application for accounting tools, the variety of micro- and particularly macro-accounting systems, were the justification for investigating accounting in a more general perspective and from a developed analytical standpoint. This was possible by incorporating contributions of sister disciplines, specifically economics, management science, symbolic logic and electronic data processing. AAM says of a keen awareness of accounting as an applied discipline and of its epistemological and methodological problems in order to reach its instrumental purposes.

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<sup>3</sup> The set of eighteen assumptions, nineteen in the German version (1970), “form the key to a general theory of accounting: a meta-theory which provides a frame for alternative hypotheses tailor-made for individual objectives” (AAM:426). He distinguished in its set of basic assumptions (the majority of which are, contrary to common belief, of empirical nature) a separate category (surrogate assumptions) which are empirically empty but hold the place for specific pragmatic or instrumental hypotheses (formalized means-end relations).

Richard Mattessich with the 1957 article, *Towards a General and Axiomatic Foundation of Accountancy – with an Introduction to the Matrix Formulation of Accounting Systems* (pp. 339-30) introduced great generality which produced highly economic working in setting up of accounting models. This work liberates the structure from the façade, opening new perspectives. Features which have been hidden behind the technical language are revealed by the much more general and fundamental language of mathematics. It forces into the area of interpretation, semantics (the basic efficacy of reorienting accounting systems toward a more semantic base), and thereby banished most psychological ambiguities from logic, i.e., the syntactical area<sup>4</sup>.

He stressed formal postulates and the need for logical deduction, and in the same time he was concerned with traditional economics and the need for surrogates to represent the “values systems” that must guide activities. Together with Chambers, Ijiri and Moonitz he employed basic statements from which further theoretical structures are derived. The additional device for moving from these general (exogenous) propositions to his own specific guidelines is said to be one of deduction or, in Mattessich framework, interpretation.

In other words, one of his chief contribution to accounting theory is the separation of the formal theoretic model based on scientific aspects that deals with values and purposes. Thus his first step is the construction of a general model (uninterpreted or semi interpreted calculus) through basic assumptions that is value free; in the second step users may apply their own specific objectives and then the general theory points at the appropriate consequent procedures - interpretation through instrumental hypotheses (Mattessich 1972:484-85)<sup>5</sup>.

Although AAM offered some methodological insights, a systematic interpretation of the general accounting theory requires further analytical as well as empirical research. On the other hand Mattessich fully created such a base in his book on *Instrumental Reasoning and Systems Methodology* (IRSM, 1978a). The paper by Balzer and Mattessich (1991) is an attempt of a more rigorous structuralist reconstruction of accounting theory and its net. Such an interdisciplinary effort shows an appropriate axiomatization of accounting theory by revealing its logical structure as well as its empirical claims in a clearer and more acceptable way.

Mattessich approached deduction by separating positive elements from the elements calling for more value assessments. In his later years he pays more attention to values and objectives, but his framework was essentially that of Carnap and the logical empiricists. His belief in the construction of a general theory of accounting, in the relevance of an uninterpreted or a semi-interpreted calculus, is firmly rooted in the works of the Vienna Circle philosophers

<sup>4</sup> The concept of *facade*, is opposed in some way to the “substance”, a reality or essence behind the *facade*, qualified as meta-theory (Mattessich 1978:53-4).

<sup>5</sup> This is in the sense of Sneed (1971), Stegmüller (1973, 1975, 1979, 1986) and Lakatos (1978). The combination of their views confirms the scientific approach to accounting by Richard Mattessich and can explain the methodology of science in general on a more rational basis. Cf. Mattessich (1978a:265-72), Balzer, Moulines and Sneed (1987), Bunge (1967:402-403), Galassi (1978 : *passim*).

and others to developing their ideas, but he never considered himself to be a positivist. And today his philosophical as well as scientific orientation does not fit that pattern.

3. His first observing area was the field of economics interconnected with accounting, twins disciplines, with the same objective of cognition, parts of a more comprehensive body of “economic science” (Mattessich 1956). The field of national income accounting and measurement along with Vatter’s fund accounting theory offered a fertile investigation soil. The national income accounting, the input-output analysis of Leontieff not to be restricted to the macro-economy (Mattessich 1957), the primitive distribution framework of Quesnay and the usual scheme for handling international payments provided further grounds. No doubt his early training in engineering sharpened his interest in these mathematical models. In the early works his Viennese education seemed to drive him strongly to logical positivism and to the works of Rudolf Carnap and others of the *Vienna Circle*. His later work at Berkeley with that university well developed computer centre no doubt reinforced his interest in mathematical modeling and the need for tight structures that fit the new computer age. The broadening influence at Berkeley probably came from Churchman (1948, 1961), whose most relevant contribution may have been towards the need to assess values decision models and operating systems. In any case Mattessich’s work at the University of British Columbia indicate more interest in extending his early models into the area of values (Mattessich 1974a, 1978a, 1984). Yet he never lost his point that basing a general accounting framework on observed postulates from outside *milieu* is a necessary requirement for theorizing in any discipline. In spite of the influence at the beginning of the logical positivism he rejected later “positive accounting theory” in favour of an instrumental approach. Anyway his early philosophical base in logical positivism helps him avoid metaphysical issues<sup>6</sup> and keeps his searching prospective on entities that satisfy scientific and measurement criteria. These entities are found not only but primarily in the economic sector; actually Mattessich does “prove” various theorems that can be given interpretations in the field of traditional accounting.

In Mattessich’s earlier work, such as AAM, he was not concerned directly with ethics. There is fragmentary mention of ethics or value judgements except for a sharp analysis of the “values system” implied in the field of management science. His early ethical views must be inferred from his admiration of the sciences. His faith is in the traditional, hypothetico-deductive methodology of science and his general acceptance of the objectives of economic and accounting systems (cfr. Mattessich, IRSM, 1978a, particularly chapt. 4).

The logical and deductive side of his arguments undoubtedly developed from his interest in the Vienna circle. For this group, led by Carnap, proposition about ethics could be verified and discussed rationally in the tradition of metaethics; in fact it held generally that the propositions of

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<sup>6</sup> At that time “logical positivism”, which rejected metaphysics, was still the standard model in the philosophy of science.

ethics are nonsense statements devoid of any means for verification, empirical confirmation or refutation.

Also in one of his recent books (Mattessich 2014a) he is concerned primarily in ontological rather than ethical issues, limiting himself to a few relevant aspects (about “environmental ethics”, “evolutionary ethics” and related topics) of this vast subject matter; where he tries to indicate the relationships between ethics and ontology, casting a glance at the cultural and ethical mission of our disciplines (see also Mattessich 1995).

Mattessich’s *Accounting and Analytical Methods* (see chapt. 10 and *passim*) is devoted to assembling inductive evidence by examining existing systems. In this area he is similar to Moonitz in not questioning seriously the ethical values of those who practice. He is also an inductivist for he begins his inquiry by observing economists, management scientists, their behavior and their models. He then generalized these behaviors through a scientific approach to form a “pure” scientific structure.

Mattessich, Chambers, Churchman have suggested that the aims of an entity and the objectives of a profession are exogenous and determined largely, if not entirely, by the objectives of outsiders groups and their prevailing hierarchy of values; the needs of the “economic order” are given to the profession and the information requirements cannot be determined by accountants. Finally, Mattessich, Moonitz and Chambers came up with specific recommendations for the profession. Mattessich (1957,1964a, 1964b) presented the matrix notion as a convenient means for representing the duality aspects of accounting, that could be adopted to all sorts of social goals and objectives. The many applications of the matrix mode brought to the computerized spreadsheets, preparing the ground for the spreadsheets programs.

Through such best-selling spreadsheet computer programs as Visi-Calc, Super-Calc, various versions of Lotus 1-2-3 and Microsoft Excel (see also Falcon/Forecast time-sharing system and Plusplan by Deloitte, Haskins & Sells) the matrix approach combined with the simulation aspect (as first presented in Mattessich 1961, 1964a and 1964b) may have been the most successful contribution of modern accounting theory to actual practice<sup>7</sup>.

A scholar or a reader of Mattessich’s *Budget Models and System Simulation* or of *Accounting and Analytical Methods* and *Simulation of the Firm through a Budget Computer Program* could with difficulty have anticipated more than fifty years ago the many students and practitioners using nowadays computers and programs pioneered by himself --- for details see Mattessich and Galassi 2000; Galassi and Mattessich 2015.

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<sup>7</sup> The LANPAR electronic spreadsheet was presented by Pardo and Landaw at Random Corporation and was also used on main-frame computers for budgeting at Bell Canada, AT&T, Bell operating companies and General Motors. Bricklin and Frankston introduced Visi-Calc, the first commercialized spreadsheet program for personal desktop (Apple) computers.

4. The developments of information economics under Butterworth, Feltham, Demski and their followers were with mathematical model building with modifications to incorporate rationality, modern probability theory, conditional values and a set of similar concepts. In this way their output has been more in the tradition of early Mattessich with his emphasis on meta-models and abstraction from the particular application of accounting. This trend is towards a management science that emphasizes the construction of simulated models, which is the antithesis of deconstructionism. To equate the assumptions of information economics – based apparently on observations – to *a priori* research<sup>8</sup> is to use the term in its later Kantian sense. Mattessich denies the *a priori* Kind of his own foundations and asserts they were arrived at by observation of economic and accounting models. All research has an element of *a prioriness*, so a classification of *a priori* and *non a priori* research has serious defects. Nor is a distinction based on value accepted and value released a useful division (Mattessich 1980 a :160-65; Galassi 2003:488-94).

The information economics accountants of the late sixties and seventies are the direct descendants of the more rigorous among the postulational accountants of the fifties and early sixties, such as Richard Mattessich, Raymond Chambers, and Yuji Ijiri and Maurice Moonitz. The information economics approach and related attempts have grown on this soil (for further details see Mattessich 1974, 1975a, 1975b, 1978b).

Mattessich's approach was not empty formalism without empirical substance. He tried to induce the structures behind such empirical phenomena as economic transactions. That such endeavours were not in vain, proved itself best on the practical side, such as the simulation of budgeting and accounting matrix models that led ultimately to a series of best selling spreadsheet computer simulation models. There is further evidence from accounting practice that AAM has been seminal. It can be found in the long-standing search of the Financial Accounting Standard Board (FASB) for a conceptual framework of accounting, as well as in FASB's provisional "legislation" for supplementary income statements with price-level adjusted values, temporarily introduced in the UK and Canada; as a matter of fact such regulations expressed the need of multiple accounting models; it is one of the major but also most difficult tasks of academic accounting to find out which model fits which situation.

The conceptual Framework publications of the FASB (1974, 1976a, 1976b, 1978, 1980) may be regarded as the major practical consequence of all the earlier postulational and axiomatization attempts. The FASB conceptual framework has been criticized from lacking a formalized approach, for the exclusion of managerial as well as macro-accounting and other sub-areas, limiting this undertaking to financial accounting and for not expressing any awareness of the problems involved in means-end relations. Where no "general theory", the quintessence of the scientific approach, is available, all the endeavors, such as better conceptualization and

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<sup>8</sup> Carl Nelson (1973) characterized the pre-1960's research as *a priori* as opposed to the behavioral and market oriented investigations of later decades.

interpretation or rigorous employment of scientific methodology, lose a great deal of their ultimate power.

There are many present and future needs that may encourage the application of a conditional-normative accounting methodology such as those expressed by the FASB: “closing the gap between practice and theory, ethical considerations, greater emphasis of policy research, the endeavor to construct accounting and auditing expert systems,<sup>9</sup> the quest for the most realistic representations permitted under a cost-benefit criterion, the revelation of hidden value judgement in standard setting, and so on” (Mattessich 1995:209). And the objectives would range for beyond those presented by FASB and preceding studies, such as the “Trueblood report” of the American Institute of Certified Public Accountants (1973).

5. The faith in hierarchical models is expressed by management scientists, such as Richard Mattessich, who use many levels of interacting substructures to form hierarchies of many kinds. This approach is treated greatly in *Instrumental Reasoning and Systems Methodology. An Epistemology of the Applied and Social Sciences*. (Mattessich 1978a)<sup>10</sup>. Properties for admittance to each level, and instructions for relating the levels to one another and to the enclosing structure are to be defined (AAA 1971:5-12). In some ways a general system versus disjointed-incrementalism opposition is related to the general-purpose, specific purpose controversy. Due to the enormously increased potential of modern quantum computers, many new and extremely complex models can be implemented, with prompt adequate answer to the information requirements.

As to the relationships of needs, values, from a host system to guidelines, principals, in the accounting subsystem, Mattessich has suggested that value judgements may be excluded from any system by reformulating until they appear as exogenous factors. He calls instrumental hypotheses the statements which connect value judgements. It has to be emphasized his long-

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<sup>9</sup> The advent of *expert systems* in accounting may impart particular urgency to the search for the underlying norms and means-end relations.

<sup>10</sup> This book offers an integrated picture of the foundations on which the applied and social science research rests. It tries to outline a framework suitable for sketching means-and relationships in a more comprehensive or holistic point of view, the structure of instrumental hypotheses and their difference to positivistic-scientific hypotheses. From the very beginning Mattessich pleaded for analyzing these relationships. One of the main purposes of IRSM was an attempt to point out relations between logic and mathematics, deductive and inductive inferences, induction and probability, probability theory and modal logic, decision theory and information economics, Gestalt theory and structuralism, systems methodology and ontology and so on. It is a totally new work, a milestone in the development of applied sciences. A fundamental message is that the “analytical sciences” deal with statements irrefutable by experience, because most of them consist of nothing but tautologies (true by necessity), whereas “empirical sciences” deal with statements, in principle at least, refutable by experience; their “truth” is a provisional one and grounded on the strength of the relative evidence. The “assumption” of the truth is derived from a sufficient degree of corroboration, confirmation, non refutation.

held distinction between *instrumental* and *scientific* hypotheses as well as between *non-subjective* and *subjective* value judgements( Mattessich 1978a: 141;187 ).

Churchman's and Mattessich's commitment to total systems that insist everything is tightly interconnected has been a fruitful position for scientific inquiry. They stressed that interconnectivity *within* and sharp separation of the system from the environment constitute the significant defining properties of the systems approach, even if the latter moment is not generally accepted.

Mattessich believes that this limit of model building, atomism, can be overcome by embedding a group of similar models into a common super-model and by recombining similar super-models into a pattern of still higher order and soon, until a general theory, embracing all the ultimate and specific models, is formulated (Mattessich 1978a: chapt. 7; 2014a: chapt. 9).

It is likely that some value-choices are necessary in order to establish the structure. Mattessich (1974a, 1978a:17-52, 1995a:161,192) may object that choices are not value judgements with regard to instrumental hypotheses, which are concerned with the selection of the best means and are judged by their fitness to reach a definite purpose. A valuation of a theory predictability is similar to the valuation of efficiency of an instrumental hypothesis, that is a judgment as to the desirability of alternative means.

Mattessich emphasizes that accounting is, by its very nature, an applied or instrumental science as directly pursues practical ends, such as measuring aggregates and flows of income and wealth attributed to some micro- or macro-entity to help decision and choices<sup>11</sup>. Of course there are parallels with pure sciences; the boundary is fairly arbitrary and the distinction between both is a issue of semantics. Mattessich's (1978a:6-10) own conception is that we cannot escape the fact that value judgements, so obvious also in accounting and management science, are embedded in a "hierarchy of norms" penetrating right down to the applied sciences.<sup>12</sup> He asserts that

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<sup>11</sup> A discussion on accounting reality particularly with reference to standard setting activity of the Financial Accounting Standard Board (and possibly other international organizations, legislative and quasi-legislative bodies) can be found in Lee (2006a, 2006b, 2009), Macintosh (2006), Mattessich (2009), Williams (2006). This debate is a critique directed towards the FASB, which has been more concerned with "comparability and consistency" than with identifying improved ways of recognizing and presenting social reality. In the wake of Enron and other scandals, as well as the financial crisis of 2008 onwards it seems that this debate is trying to convince the FASB to adapt an ontological perspective in the present efforts to revise its "conceptual framework" for setting accounting and auditing standards.

This debate gave rise to a further analysis of Searle's (1995) social ontology and its application in accounting. Thus it seems that the methodology of the "onion model of reality" developed by Mattessich (1991a, 1991b, 1995a, 2003) offers several advantages over Searle's approach (Cfr. Mattessich, 2014, chapt. 6).

<sup>12</sup> Further consideration has been given to the present status of "conditional normative accounting methodology" and its relation to the search for a logic of norms, deontology or related attempts, in different disciplines such as jurisprudence and operations research. Normative or deontic logic includes the logic of actions, imperatives, commands and others normative statements such as means-end relations. Modal and deontic logic, which concerns itself with necessity, permissibility, possibility and so on, has relevant applications to ethical problems, to

accounting, with the recording and analysing of interections involved in the creation, distribution and destruction of *values*, deals with such phenomena from a normative prospect and under consideration of an economic or cost-benefit criterion. The reason is that *values* are part of the realm of mind, information and purpose and become meaningless without a teleologic frame of reference, i.e. a farly specific purpose in mind. The *degree of reality* and accuracy are here not decisive and are overruled by the degrees efficiency and effectiveness at which the information goals are accomplished.

6. Mattessich (1980b) pays great attention to the problems and prospects of management accounting. The most appropriate frame of analysis seems to be that of system theory and its underlying instrumental methodology; in management accounting definitions and measurements can be done correctly only when comprehending the norms and purposes of the larger social system in which management is embedded. He has adopted a philosophic framework that enables to reconcile the goals of a specific system with the goals of the super-systems in which the former is embedded. He presents a realistic solution of the fragments of management accounting distinguishing two major areas, the “object area” (efficiency control objectives, optimizing and satisficing aims, budgeting and budget simulation and so on, under a given set of environmental constraints) and the “meta-area” of management accounting. The “meta-area” deals with the normative as well as positive aspects of the environment in which the object models are incorporated. The two areas are *complementary* and this allows the derivation of management accounting models (basically atomistic object models) from the basic assumptions of a general flexible unifying theory of accounting, comprising all micro- and macro-areas, through specific interpretations of those basic assumptions.

Prof. Mattessich regards accounting a branch of management science, conceived as a superdiscipline that employs the quantitative methods of the economic sciences.<sup>13</sup>

AAM can be better understood in the light of the book *Critique of Accounting* (1995) and the later certainly can be comprehended better in the light of AAM. The *Critique* makes it possible to better explain and integrate the idea of conditional-normative accounting methodology, CONAM, with ideas developed in 1960s and 1970s. This methodology insists on revealing the goals pursued and their underlying value judgments and it recommends the search for empirical evidence supporting means-end relations.

Depending on the objective each value basis could be acceptable (historical values, current entry values, current exit values, present values, fair values and so on)<sup>14</sup> as shown in the

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accounting and management science work (cfr. Mattessich 1978a: 24-26, 121-28). For normative accounting theories, “ethical-normative”, “pragmatic-normative”, “conditional-normative” see the same Author (1995: chaps 10-11).

<sup>13</sup> This resembles the typical Italian research program of *Economia Aziendale*, entity economics, in which accounting theory is embedded (see Accademia Italiana di Economia Aziendale 1980, Amaduzzi 1967, Amodeo 1965, Azzini 1982, Ferrero 1968, Galassi 1984, Masini 1979, Onida 1965, Zappa 1937, 1956-57).

*Critique* for different capital maintenance objectives. In CONAM value judgments could be incorporated into the theory proper, which in turn is the prerequisite for any applied science.

The demand is for devising certain conditions or common traits for the concepts of income, wealth, value and so on, to create general uninterpreted concepts -- e.g. Felham and Olson's (1995) "clean surplus" notion -- and then rules of interpretations for specific needs. As to Mattessich (1995: 69-70) the above mentioned valuation basis are not interpretations of a general uninterpreted value concept because the distinction "between uninterpreted and interpreted concepts and theories lies in the specification of conditions characterizing every uninterpreted concept".

The *Critique* presents also some historical topics, reaching from the very beginning of token accounting, with the discoveries of Schmandt-Besserat (some eight-thousand years B.C.)<sup>15</sup> to contemporary history of research arguments, such as "reality issues" in accounting and the related representation, taking into account that such representation is always a pragmatic one, i.e., constrained by a series of value judgements -- considerations of cost-benefit, conservatism and others, such as the differences and connections between a "positive" representation of values and similar realities and a "pragmatic" one, the norms or value judgments introduced by the pragmatic process and its means-and relations. This leads to the insight that pragmatic representations in financial statements can offer only purpose-oriented values. The fundamental unresolved problems of this methodology is the empirical determination and testing of instrumental hypotheses, something that requires not simply the expertise of empirical accountants but a second empirical revolution. After all the first empirical revolution was but one of the "economics of accounting" something similar to what happened in Continental Europe in the last century.

The *Critique* constitutes a critical analysis, in Kantian sense of critically examining the extent to which a discipline can represent the pertinent *reality*, with the obvious need for putting greater emphasis on ethical and other value judgements such as moral ones. Its main aims are the comprehension of the foundations, structure and possibilities of accounting as an applied discipline and the search for the appropriate methodology. A conditional-normative framework could be applied equally well to ethical as well as to pragmatic goals, thus clarifying the means-end relations in both areas.

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<sup>14</sup> For certain purpose the correct value bases is the acquisition cost (Littleton, Kohler, Cooper and Ijiri), for others current entry value (Moonitz, Edwards and Bell) and exit value (Chambers and Sterling), for others the present value (Fisher, Canning, Nelson), and so on; the present value method, discounted net future income flows or cash flows, in other words *fair value*, is rational also for investments and management accounting decisions. For some purpose two or more values derived from different bases have to be supplemented.

<sup>15</sup> Her work on prehistoric writing, counting and record presented evidence that record for legal and commercial purposes preceded writing and even abstract counting. Mattessich tried new inferences from an accounting and philosophical point of view and demonstrated the particular way in which the duality principle manifested itself.

A conditional-normative approach is also the syntheses proposed by Mattessich between “positive accounting theory” and the “critical-interpretive approach”, a basis for combining the desirable features of both approaches and minimize their limits. The theory is “conditional” in so far as the norms, to be incorporated and clearly revealed, constitute the conditions under which such a theory is valid. There is no contradiction between the “conditional-normative” and the “scientific-empirical” approach; though the latter can be carried out without the former, the reverse is not true, because conditional value judgements are introduced only on this second level.

7. Starting from the issues that the major task of science is to represent reality, though in an approximate way -- and this can only be done in classifying “what represent” from “what is to be represented -- Mattessich (1991a,1991b) distinguishes between *physical reality* versus *social reality* and developed the “onion model of reality” based on the crucial notion of “emergent properties”, already present in *Instrumental Reasoning and Systems Methodology* (1978a, chapt.7); it regards reality as a hierarchy of many levels from ultimate reality (by way of physical, chemical, biological and mental reality) to social reality (including that of jurisprudence, economics and accounting) or beyond, within the context of a philosophy of (external) realism.<sup>16</sup> He pointed out that income, debt as well as ownership claims belong to social reality and are empirical, even observational variables; they are by no means empty concepts or mere names. Each layer and sublayer -- from ultimate to physical, chemical, biological, mental and social reality -- is characterized by its emergent properties, whereby a lower or more basic layer is enveloped by the next higher layer, as in an onion. A pertinent fundamental question in accounting concerns the extent to which accountants can and do represent segments of reality; accountants actually represent economic reality *pragmatically* this is possible with the intention to realize such accounting representation in terms of means-end relations and with the assurance that the chosen objectives are those of the public at large. Mattessich (2014:181-2) states “that reality has a complex structure and possesses aspects not yet sufficiently explored in the philosophical literature...What we need is a picture that reveals the intricacy of the notion of reality; a vision that discloses common roots as well as diverse aspect”. All this may be envisaged in an onion-like structure, from the most basic to the highest level of reality.

For accounting the distinction between the physical reality of commodities, plants, buildings and so on versus the social reality of debts and ownership claims seems to be relevant; it contributes also to solve the problem of values and valuation in accounting, as Mattessich point out:

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<sup>16</sup> This vision was inspired to Mattessich by Lorenz(1973), as well as by Hartmann’s (1940) “categories of being” and Bunge’s (1977,1979) “scientific ontology”. He suggested this model even before the publication of Searle (1995) and is not in fundamental disagreement with Lee (2009), Mouck (2004) and Williams (2006).

...because it interpretes subjective values as conceptual representations of personal preferences (belonging to psychic reality) and objective values as market manifestations, hence representing a social reality. The existence if those values is independent of the skill or refinement with which they are determined; hence the claim that the values contained in financial statements do not represent anything real is based in the confusion between the ontological issue of weather something is real (e.g. the price one paid or the preference one possesses) and the methodological issue concerning the accuracy with which those values can be determined (Mattessich 1995: 213).

Economic valuation is primarily an epistemological and, above all, methodological rather than an ontological problem. Value, both in economic and accounting sense, then becomes the monetary expression of either a personal preference, e.g. a “present value” or of an objectified interpersonal preference, e.g. a “current market value”. Therefore accounting can only be represented pragmatically, based on the cost-benefit criterion and other value judgments, but not in precise scientific terms. Some assertions that income and capital are purely abstract notions that have no reality behind them come from the confusion of taking the dichotomy of “physical versus social” for that of “real versus conceptual” (concepts themselves may assume a reality status, e.g. in mathematics); so the point is that the methodological problems of representation, interpretation, classification and measurement, must be separated from the ontological problem of existence. There are many definitions of income, none of them absolute. If we employ the non-inclusive or the all-inclusive income definition is a problem of partition this reality differently according to different needs.

Hence the model not only relates the ontological aspects, e.g. of income and wealth, to the epistemological ones, i.e. the concepts behind those entities, it also creates a bridge to the methodological aspects of measuring or estimating the values temporarily attributed to such concepts. All this implies a supplementary *purpose oriented model of representation*. Thus the determination of the values of income and capital is a separate methodological as well pragmatic issue. The identify of income does not depend on size or source, nor the fact it may be subject to a sudden decline in purchasing power, nor the fact that may be roughly measured, nor the allocation procedure by distributing if over several years; in other words, the reality of income and capital is unaffected by methodological issues.

According to Mattessich’s “onion model of reality”, each layer has a multidimensional perspective that includes time and other dimensions; although *reality is ever changing*, the core layer, whatever the ultimate form it may assume, can be regarded more permanent than the things, events, properties and other relations on the higher levels, e.g. the social, legal and economic level, which are more volatile. These surface realities seem to be increasingly transient the higher one climbs the hierarchy. The model imposes of clearly identifying on which level or levels something is considered to be real and on which it is not.

Mattessich (2014a:181) emphasizes that, beyond a “general anthology”, there is a need for many “domain ontologies”. The ultimate goal of a general, or domain-independent ontology,

is to provide a conceptual foundation valid for all possible domain ontologies, which “are more specifically oriented to wards major academic disciplines and even to more specific goals as manifested in the numerous ontologies for information and systems science”. He stresses also the logical, semantic and syntactic complexities to reach such a purpose.

All these efforts show that information science, as applied to any discipline, is confronted with the task of designing computers capable of providing information for a great variety of aims among which the representation of a presumed reality ranks foremost.

The question about the constituents of reality is an old one. The Greek philosopher Parmenides held that reality is the substance of unchanging being. Heraclitus on the other hand argued that there is nothing permanent and everything is in flux.<sup>17</sup> Perhaps there is a solution to the dilemma and it may even be an accounting solution proposed by Mattessich (2014a: chapt.9): the reference is not only to the double-entry accounting methodology but to a dualism more deeply rooted at the very core of how accounting analyses reality. We cannot concentrate simply on what exists, i.e. on the Balance Sheet items, we must also understand the changes in those items over time, represented by the Income Statement. Only both aspects of reality reveals a comprehensive picture of reality, specifically a concrete reality. The conclusion for Mattessich is that substance and process are two aspects of one and the same ontological phenomenon.

However Mattessich (2014b: 1-35) presents a relevant extension from substance and process to “energy”, without which neither substance nor process could exist; so the basis of reality is neither one “substance” or “process” nor two, but three inseparable elements: *substance*, *process* and *energy*. Furthermore with extension of basic elements other notions should be considered as basic to reality, e.g. time and space( see Mattessich and Galassi, 2015:1-17). The conclusion is that space and time are as tightly connected with substance, process and energy as the latter three are with each other; so there are not different levels of basic concepts but their equality and interdependence.

What is to be considered Reality, and Science as well, is seriously affected by exciting “theoretical” questions. It seems that scholars of such disciplines as quantum theory, cosmology, economics and finance increasingly rely on mathematical consistencies and dubious assumptions rather than factual confirmation and empirical evidence (cf. Mattessich and Galassi, 2016: 20, ff.).

Mattessich is universally recognized as an academic leader. He is one of the few intellectual giants of our discipline who offered tremendous contributions to accounting, business economics, management science and other disciplines, such as epistemology. His pioneering contributions have an enduring legacy with particular impact on business education and research. This celebration of his ninety-fifth birthday intends to be a special tribute for his many advances

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<sup>17</sup> It is continually amazing at how modern problems of knowledge representation return to the same philosophical questions that Greeks grappled with.

which has brought the realm of accounting to new levels, laying and clarifying the foundations for developing accounting analysis and its applications.

Some readers, who in good faith do not share the same outlook, will disagree with Prof. Mattessich's epistemology. The acceptance of a methodology is after all a personal fact, but they will do no more than recognize his high accomplishments and dedication to the advancement of accounting and management science.

## REFERENCES

- Accademia Italiana di Economia Aziendale, ed. (1980) *Gino Zappa founder of concern economics*, Bologna: AIDEA.
- Amaduzzi, A. (1967) *L'azienda nel suo sistema e nell'ordine delle sue rilevazioni*, Turin: Utet.
- American Accounting Association (1971) "Report of the Committee on Foundations of Accounting Measurement" (Ijiri, Mattessich, Rappaport, Summers, Thomas), *The Accounting Review* 46 (Supplement): 1-48.
- Amodeo, D. (1965) *Ragioneria generale delle imprese*, Napoli: Giannini (1<sup>st</sup> ed. 1964).
- Azzini, L. (1982) *Istituzioni di economia d'azienda*, Milan: Giuffrè (1<sup>st</sup> ed. 1980).
- Balzer, W., Moulines, C.U. and Sneed, J.D. (1987) *An architecture for science*, Boston: Reidel.
- Bunge, M. (1967) *Scientific research, I: the search for system*, New York: Springer Verlag.
- Bunge, M. (1977) *Treatise on basic philosophy*, vol. 3, *Ontology I: the furniture of the world*, Dordrecht: Reidel.
- Bunge, M. (1979) *Treatise on basic philosophy*, vol.4, *Ontology II: a world of systems*, Dordrecht: Reidel.
- Chambers, R.J. (1966) *Accounting, evaluation and economic behavior*, Englewood Cliffs: Prentice-Hall.
- Churchman, C.W. (1948) *Theory of experimental inference*, New York: Macmillan.
- Churchman, C.W. (1961) *Prediction and optimal decision. Philosophical issues of a science of values*, Englewood Cliffs: Prentice Hall.
- Cooper, W.W. and Ijiri Y., eds. (1983) *Kohler's dictionary for accountants*, Englewood Cliffs, N.J: Prentice-Hall.
- Ferrero, G. (1968) *Istituzioni di economia d'azienda*, Milan: Giuffrè.
- FASB (1974) *Conceptual framework for accounting and reporting. Considerations of the report of the study group on objectives of financial statements*, Stamford, CT: FASB.
- FASB (1976a) *Conceptual framework for financial accounting and reporting. Elements of financial statements and their measurements*, Stamford, CT: FASB.
- FASB (1976b) *Tentative conclusions on objectives of financial statements*, Stamford, CT: FASB.
- FASB (1978) *Objectives of financial reporting by business enterprises*, Stamford CT: FASB.
- FASB (1980) *Objectives of financial reporting by nonbusiness organizations*, Stamford, CT: FASB.
- Feltham, G.A. and Ohlson, J.A. (1995) "Valuation and clean surplus accounting for operating and financial activities", *Contemporary Accounting Research* 11: 689-731.
- Galassi, G. (1978) *Sistemi contabili assiomatici e sistemi teorici deduttivi*, Bologna: Patron.
- Galassi, G. (1984) "Accounting research in Italy: past, present and future", in A.G. Hopwood and H. Schreuder, eds., *European contributions to accounting research. The achievements of the last decade*, Amsterdam: VU, Uitgeverij / Free University Press: 163-168.
- Galassi, G. (2003) "The 'golden age of a-priori research in accounting' and the research of *Economia Aziendale*", *Rivista Italiana di Ragioneria e di Economia Aziendale* 11-12: 488-99.
- Galassi, G. and Mattessich, R. (2015) "Some clarification on the evolution of the electronic spreadsheet", *Journal of Emerging Technologies in Accounting*, AAA Digital Library, Published Online: vol.12: 1-6.
- Hartmann, N. (1940) *Der aufbau der realen welt*, Berlin: De Gruyter.
- Ijiri, Y. (1967) *The foundations of accounting measurement*, Englewood Cliffs: Prentice-Hall.
- LaKatos, I. (1978) "The methodology of scientific research programmes", in J. Worzal, and G. Currie, eds., *Collected philosophical papers*, vol. I, Cambridge: Cambridge University Press.
- Lee, T. (2006a) "The FASB and accounting for economic reality", *Accounting and the Public Interest*, 6: 1-21.

- Lee, T. (2006b) "Cunning plans, spinners, and ideologues: Blackadder and Baldrick try accounting for economic reality", *Accounting and the Public Interest* 6 : 45-50.
- Lee, T. (2009) "The ontology and epistemology of social reality in accounting according to Mattessich", *Accounting and the Public Interest*, vol.9: 65-72.
- Lorenz, K. (1973) *Die rückseite des spiegels-versuch einer naturgeschichte menschlicher Erkenntnis*, Munich: Piper.
- Macintosh, N.B. (2006) "Accounting-truth, lies, or 'bullshit' - a philosophical investigation", *Accounting and the public Interest* 6: 22-36.
- Masini, C. (1979) *Lavoro e risparmio. Economia aziendale*, Turin: Utet (1<sup>st</sup> ed.1970).
- Mattessich, R. (1956) "The constellation of accounting and economics", *The Accounting Review* 4: 551-564.
- Mattessich, R. (1957) "Towards a general and axiomatic foundation of accounting. With an introduction to the matrix formulation of accounting systems", *Accounting Research* 4 :328-355.
- Mattessich, R. (1961) "Budgeting Models and System simulation", *The Accounting Review* 36: 384-397.
- Mattessich, R. (1964a) *Accounting and analytical methods. Measurement and projection of income and wealth in the micro- and macro-economy*, Homewood, ill.: R.D. Irwin (also translations in Japanese, German and Spanish).
- Mattessich, R. (1964b) *Simulation of the firm through a budget computer program*, Homewood: R.D. Irwin.
- Mattessich, R. (1970) *Die wissenschaftlichen grundlagen des rechnungswesens*, Dusseldorf: Bertelsmann Universitätsverlag.
- Mattessich, R. (1972) "Methodological preconditions and problems of general theory of accounting", *The Accounting Review* 47: 469-487.
- Mattessich, R. (1974) "Informations und erkenntisoconomic: Treffpunkt von philosophie und wirtschaftswissenschaft", *Zeitschrift für Betriebswirtschaftliche Forschung* 26, Dec.: 777- 84.
- Mattessich, R. (1974a) "The incorporation and reduction of value judgements in systems", *Management Science* 1:1-9.
- Mattessich, R. (1975a) "Information economics and the notion of 'management information system', in E. Grochla and N.Szyperski, eds., *Information systems and organizational structure*, Berlin-NewYork: De Gruyter: 342- 64.
- Mattessich, R. (1975b) "Rechnungstheorie", in E.Grochla and W. Wittmann, eds., *Handwörterbuch der Betriebswirtschaft*, Stuttgart: Poeschel Verlag: 3.332-3.343.
- Mattessich, R. (1978a) *Instrumental Reasoning and systems methodology. An epistemology of the applied and social sciences*, Dordrecht-Holland / Boston, MA: Reidel.
- Mattessich, R. (1978b) "Instrumentelle bilanztheorie: voraussetzungen und erste ansätze", *Zeitschrift für Betriebswirtschaftliche Forschung* 30, oct.-nov.: 792-800.
- Mattessich, R. (1980a) "On the Evolution of Theory Construction in accounting: a personal account", *Accounting and Business Research*, Special Accounting History Issue: 158-173.
- Mattessich, R. (1980b) "Management accounting: Past, present and future", in P.Holzer, ed., *Management accounting 1980*, Champaign, University of Illinois: 209-240.
- Mattessich, R. (1982) "On the evolution of inflation accounting. With a comparison of seven models", *Economia Aziendale* 1 (3): 349 - 81.
- Mattessich, R. ed. (1984) *Modern Accounting Research: history, survey and guide*, Vancouver: Canadian Certified General Accountants Research Foundation.
- Mattessich, (1986) "Fritz Schmidt (1882-1950) and his pioneering work in current value accounting in comparison to Edwards and Bell's theory", *Contemporary Accounting Research* 2: 157-78.
- Mattessich, R. (1991a) "Social reality and the measurement of its phenomena", *Advances in Accounting* 9: 3-17.

- Mattessich, R. (1991b) "Social versus physical reality in accounting, and the measurement of its phenomena", in B.Banerjee, ed., *Contemporary issues of accounting research*, Calcutta: Indian Accounting Association Research Foundation: 1-30.
- Mattessich, R. (1995) *Critique of accounting. Examination of the foundations and normative structure of an applied discipline*, Westport, CT: Quorum Books.
- Mattessich, R. (2003) "Accounting representation and the Onion Model of Reality: A comparison with Baudrillard's Orders of Simulacra and his Hyperreality", *Accounting, Organizations and Society* 28(5): 443-70.
- Mattessich, R. (2008) *Two hundred years of accounting research. An international survey of personalities, ideas and publications (from the beginning of the nineteenth century to the beginning of the twenty-first century)*, London and New York: Routledge.
- Mattessich, R. (2009) "FASB and social reality- an alternative realist view", *Accounting and the Public Interest* 9: 39-64.
- Mattessich, R. (2014a) *Reality and Accounting. Ontological explorations in the economic and social sciences*, London and New York: Routledge.
- Mattessich, R. (2014b) "No substance without process, no process without substance, and neither without energy: some thoughts and extensions on Whitehead and the endurants (continuants) v. perdurants (occurents) controversy", *Process Studies, Supplements* 19:1-36.
- Mattessich, R. (2015) "Foundational research in accounting: professional memoirs and beyond", *De Computis* 22: I-XX;1-194 (2015 Revision and Extension of the *De Computis* Edition of 2006). First edition 1995, Tokyo: Chuo University Press.
- Mattessich, R. and Galassi, G. (2000) "History of the spreadsheet. From matrix accounting to budget simulation and computerization", in *Accounting and History. A selection of the papers presented at the 8<sup>th</sup> World Congress of Accounting Historians*, Madrid: Asociación Española de Contabilidad y Administración de Empresas: 203-32.
- Mattessich, R. and Galassi, G. (2015) "On the interdependence of basic concepts: substance and space, time and change, and consciousness", *Process Studies Supplement* 20: 1-17.
- Mattessich, R. and Galassi, G. (2016) "Speculative Science ("fairy tale science") in physics, cosmology, and economics", *De Computis. Spanish Journal of Accounting History* 25: 20-34.
- Moonitz, M. (1961) *The basic postulates of accounting*, Accounting Research study No.1, New York: American Institute of Certified Public Accountants.
- Mouck, T. (2004) "Institutional reality, financial reporting and the rules of the game", *Accounting, Organizations and Society* 13(5): 487-508.
- Nelson, C.L. (1973) "A priori research in accounting", in N. Dopuch and L. Revsine, eds., *Accounting research 1960-1970: a critical evaluation*, Urban: Center for International Education and Research in Accounting: 3-19.
- Onida, P. (1965) *Economia d'azienda*, Turin: Utet (1<sup>st</sup> ed.1960).
- Searle, J.R. (1995) *The construction of social reality*, New York: Free Press
- Sneed, J.D. (1971) *The logical structure of mathematical physics*, Dordrecht: Reidel.
- Stegmuller, W. (1973) *Theorie und erfahrung-zweiter halbband: theorien struktur und theorien dynamik*, Heidelberg: Springer Verlag.
- Stegmuller, W. (1975) *The structure and dynamics of theories*, New York: Springer Verlag
- Stegmuller, W. (1979) *The structuralist view of theories*, New York: Springer Verlag.
- Stegmuller, W. (1986) *Theorie und erfahrung*, vol.2, part 3-*Die entwicklung des neuen strukturalisms seit 1973*, Berlin: Springer-Verlag.
- Williams, P.F. (2006) "Accounting for economic reality: whose reality, which justice?", *Accounting and the Public Interest* 6: 37-44.
- Zappa, G. (1937) *Il reddito d'impresa*, 2nd ed., Milan: Giuffrè Editore.
- Zappa, G. (1956-57) *Le produzioni nell'economia delle imprese*, 3 voll., Milan: Giuffrè Editore.

## Appendix A

**HONORS AND AWARDS RECEIVED BY PROF. RICHARD V. MATTESSICH**

- 1945-47 Research Fellow of the Austrian Institute of Economic Research, Vienna.
- 1958 Visiting Professor, University of California, Berkeley, USA.
- 1959-67 Tenured Associate Professor of Business Administration, University of California, Berkeley (also teaching in the Dept. of Economics).
- 1959-67 Founding Member (together with C. West Churchman and others) and Faculty Council of the Center for Research in Management Science (UC-Berkeley).
- 1961/62 Ford Foundation Fellow (USA).
- 1964-65 Member of the "Committee for Courses in Electronic Data Processing" of the American Accounting Association.
- 1965 Visiting Professor, Free University Berlin.
- 1965/66 Visiting Professor, University St. Gallen, Switzerland.
- 1966-67 Professor with Chair in Economics, Ruhr University Bochum (West Germany; double-professorship with U.C.-Berkeley).
- 1970 Distinguished "Erskine Fellow" and Visiting Professor of the University of Canterbury, Christchurch (New Zealand).
- 1971-72 "Killam Senior Fellow" (UBC, Canada).
- 1971/73 Visiting Professor (Summer Sessions) at the Austrian Academy of Management, Graz.
- 1972/73 "Award for Notable Contribution to Accounting Literature" of the American Institute of Certified Public Accountants in collaboration with the American Accounting Association.
- 1976-78 Founder and Director of the Institute of Industrial Administration and Methodology (with Professorial Chair) of the University of Technology of Vienna (double-professorship with UBC).
- 1978 Member of the 1978 Research Convocation of the University of Alabama.

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- 1978-88 Member of the Board of Nominations of the "Accounting Hall of Fame" (Ohio State University).
- 1979-80 Member of the Consultative Group on Management and Administrative Studies of the Social Sciences and Humanities Research Council of Canada (Ottawa).
- 1980 Elected Fellow of the Accademia Italiana di Economia Aziendale (one of the national academies of Italy).
- 1980-87 Distinguished Arthur Andersen & Co. Alumni Professor at UBC.
- 1981- 95 Appointed to the Editorial Board of *Economia Aziendale*, Italy
- 1981-82 Member of the Board of Governors of the School of Chartered Accountancy of the Institute of Chartered Accountants of British Columbia, Vancouver.
- 1982 - On the International Editorial Board of "Philosophy and Methodology of the Social Sciences" of the Theory and Decision Library (Dordrecht-Holland and Boston, MA: Reidel Publ. Co).
- 1984 - Corresponding Member of the Austrian Academy of Sciences (Philosophic Section), Vienna .
- 1984-90 Member of the Board of Directors of the Canadian Certified General Accountants' Research Foundation, Vancouver.
- 1988- Professor Emeritus of UBC.
- 1988 "Award for Best 1988 Paper", Annual Meeting, Canadian Academic Accounting Association.
- 1989 Appointed to the International Advisory Committee of Praxiology (formerly published by the Polish Academy of Sciences).
- 1990-93 Member of the International Editorial Board of *Teuken -- Revista de Investigacion Contable* (Argentina).
- 1991 "Haim Falk Award for Distinguished Contribution to Accounting Thought" of the Canadian Academic Accounting Association (CAAA).
- 1992 - Honorary Life Membership in the Academy of Accounting Historians "in recognition of distinguished contributions to accounting history".
- 1992 - Honorary Membership in the Pacioli Society of Japan.

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- 1992-93 Publication of the Japanese version of "Foundational Research in Accounting: Professional Memoirs and Beyond" in *Chuo Hyoron*.
- 1994 Presentation of an invited paper at the 650th Anniversary of the University of Pisa, in honour of Leonardo da Pisa Fibonacci.
- 1994 Plenary presentation of a paper at the 17th Congress of the European Accounting Association, in Venice, in honour of the 500th Anniversary of the publication of Luca Pacioli's *Summa de Arithmetica, Geometria, Proportioni et Proportionalita* (Venice).
- 1997 Awarded an Honorary Professorship from the Centro Universitario Francisco de Vitoria, Madrid.
- 1997 Elected Honorary Member of the Italian Society of Accounting Historians.
- 1998 Awarded a Doctor honoris causa (economía y empresariales) from the University of Madrid (Complutense), Spain.
- 2000 Received honorary Insignia of the Asociación Española de Profesores Universitarios de Contabilidad (ASEPUC, May).
- 2000 Presentation of a joint paper (July 14) with Prof. Giuseppe Galassi -- see below) of "History of the Spreadsheet: From Matrix Accounting to Budget Simulation and Computerization") at the 8th World Congress of Accounting Historians in Madrid.
- 2000 Participation (Nov. 10) on the Plenary Panel "Perspectives on Accounting Research" (by J. Demski, N. Dopuch, R. Mattessich, J. Ohlson and S. Zeff) at the celebration of the 50th Anniversary of the Accounting Hall of Fame, published in Daniel L. Jensen, ed., *Challenges and Achievements of Accounting During The Twentieth Century* (Columbus, OH: Accounting Hall of Fame, Ohio State University Press, 2001), pp. 64-83.
- 2000 Founding member (and on the Editorial Board) of the *International Journal of Accounting Literature*, Rohtka, India).
- 2001 Founding member (and on the Editorial Board) of *Revista de Filosofía y Epistemología de las Ciencias Económicas* (Universidad de Buenos Aires, Argentina).
- 2003 "Hourglass Award Presented to Richard V. Mattessich" and "Dr. Mattessich's Response", *The Accounting Historians Notebook* 27 (1, April 2004): 22-23 -- the highest research award of the Academy of Accounting Historians.
- 2004 Visiting Professor at the University of Málaga, Spain (October/November).

- 2006 Received a Doctor honoris causa (économie) from the University of Montesquieu, Bordeaux IV (France) May 5, 2006 (presentation of a paper: "La diversité des courants de recherche en comptabilité, évaluation et représentation").
- 2006 Awarded a Doctor honoris causa (economía y empresariales) from the University of Málaga, Spain May 18, 2006 (presentation of a paper "¿Qué le ha sucedido a la Contabilidad?). The entire investiture (including the speeches by various persons) has been filmed professionally by the Technological Production Centre of the University of Málaga, and is available from it by specifying either PAL format for European or NTSC format for American DVD systems).
- 2008 Awarded a Dr.hon. causa (in absentia) from the University of Graz (Austria) with a paper of mine presented by Prof. G. Galassi (University of Parma).

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