

**INVISIBLE COLLEGE IN INTERDISCIPLINARY FIELDS: FOUCAULT IN ACCOUNTING RESEARCH**

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**Abstract:** Michel Foucault's works have been referenced in several fields of knowledge and such influence has also been noticed in accounting. The objective of this paper is to find at what point in time Foucault's work started to be used in accounting literature, how it was accepted or refused by researchers and identify invisible colleges. This study contributes to identify the development of a new area of research through the movements of theories between fields. It identifies how foucaultian researches have been utilized to explain power and disciplinary aspects in accounting. The first level of analysis is based on Bourdieu's theory and descriptive research. A total of 68 accounting journals were analyzed and 123 articles with reference to Foucault were identified. 40% are based in his theory and 60% are *incidental appropriation* according to Chartier's typology. The second level was a bibliometric analysis and revealed a significant presence of Foucault's ideas in Critical Accounting and a productivity behavior according to Lotka's Law. The third level of analysis is based on Social Network Theory. It aimed to identify invisible colleges dealing with this subject. Results showed a network of authors and journals in a more centralized position.

**Key words:** Foucault. Accounting Research. Bibliometry. Social Network. Bourdieu. Movements of Theories.

## **1 INTRODUCTION**

Several areas of social sciences are inter-disciplinarily in their very nature. Concepts and theories of different disciplines become integrated and create a new discipline. This is one of the characteristics that also apply to the Accounting field. Theories and ideas are transported and translated from one area to another, as well as economical, mathematical and organizational theories were transported to Accounting. Due to a number of factors, the members that make up the body of this field and consequently start being part of it accept those theories.

The understanding of the movements of theories in the different fields, such as the moment it is taken from the field where it was generated to be applied in another

field, is not always easy to perceive, and does not always happen in a short period of time. To identify this "translation of ideas", as denominated by Latour (1987), while it is still in its course and while the systemic vision brings to the light those movements, it is necessary to poses questions.

The purpose of this article is to explain Michel Foucault's introduction and positioning in accounting thinking, in the light of the relationships in the scientific field (Bourdieu, 1976). Michel Foucault published his works between 1954 and 1984. His ideas have been highly impacting in the humanities and in social sciences, and have been referenced in wide scale in the philosophical field, where they originated, as in the fields of the history, psychology, education, organizational studies and accounting, among others.

The objective of this article is to analyze at what point in time Foucault starts having his theories referenced in accounting area, which were their contribution, how they were perceived, or refused, by researchers, and the relationship between the field they were produced and the field they were received. A meta analysis and bibliometry was used to carry out descriptive research. It was considered as necessary to gain a wide vision of the systematic and structured presence of Foucault in Accounting.

Social network analysis was also used in this research. According to the literature, networks are also a way of addressing questions and needs faced by the academic communities through the analysis of the structure of the relationships. Such an important tool is used only for a limited group of researchers in some areas of knowledge. Very little research using this method has been conducted in Accounting Research. The main research question addresses which author or journal is most central in the network and how can we understand this network regarding an emerging of an invisible college in this area of critical accounting? Are the critical ties based solely on personal relationships or hierarchies, or have these ties become formalized so that they are sustainable over time?

The article discusses, in the first place, to what extent the issue is covered by this research contribute for science; additionally, resorting to literature, it identifies efforts being done in this same direction. Secondly, the theoretical and methodological framework is defined. Before results are presented; a brief introduction to the main works of Foucault and respective contributions is provided.

The results presented are followed by the conclusions and some answers to questions rose.

## 2 SOCIAL SCIENCES THEORETICAL ASSUMPTIONS

As in most of social sciences, accounting research is also based on assumptions on the nature of social sciences. Riahi-Balkaoui (1997: 17) analyzed the perspectives of accounting thinking according to Stephen Pepper's and Burrell & Morgan assumptions. Pepper defines four general assumptions to analyze knowledge: **Formism (realism)** - that includes analytical and dispersive theories; **Mechanism (naturalism/materialism)** - that includes analytical and integrative theories; **Contextualism (pragmatism)** - that includes synthetic and dispersive theories, and **Organicism (idealism)** - that includes synthetic and integrative theories. Subjective-objective dimensions and regulative-radical dimensions are analyzed by Burrell & Morgan in 1979 and consist of four different paradigms: different views of reality to be used in social theories analysis, accounting included, as follows: **(1) Radical humanism** - it explains social order based on nominalistic, **antipositivist, voluntarist and ideographic** assumptions, while emphasizing forms of radical change and reducing philosophical criticism to normative methodologies. **(2) Radical structuralism** - it looks for radical changes, emancipation and potentialities being used for analyses, with emphasis in contradictions, conflicts and dominance manners, **(3) Interpretive** - intends to understand individual subjective experience involved in the preparation, communication, verification and use of accounting information and **(4) Functionalist** - it focuses the explanation of social order in which accounting develops a role; it sees accounting phenomena as concrete, real world relationships that may be softened through explanation and scientific forecasts. (Riahi-Balkaoui, 1997: 31-35).

Accounting theories are predominantly based on the functionalist vision, with punctual attempts towards other visions. The functional paradigm in accounting focuses the definition of accounting functions necessary for efficient operation in the organization. Criticism to this paradigm is that, in accounting, theory is not understood to be historically relative. Most of the published articles are characterized by quantitative, hypothetical-deductive, and generalizations methods. Chua (1986)

affirms that a change in the group of assumptions potentializes new and different research. For the author, the two alternatives for world vision and its assumptions are: critic and the interpretive. However, accounting research follows a restricted group of faiths, values and techniques already accepted by peers, therefore, it ends up disabling some other types of theoretical discussions.

### **3 DEVELOPMENT OF ACCOUNTING RESEARCH**

From the definitions of social sciences' and society's possible world visions, accounting thinking can be seen as having strongly based its development on functionalistic assumptions (Riahi-Balkaoui, 1997). Research space under different perspectives is still limited if one consider the vision of Chua (1986). However, larger support in publications such as *Accounting, Auditing & Accountability Journal*, *Accounting, Organization and Society (AOS)*, *Critical Perspectives in Accounting* can be seen. To identify such perspectives for accounting studies was the task taken by Baxter & Chua (2003), who, based on the analysis of AOS publications, have identified the following research perspectives in managerial accounting: non-rational design school, naturalistic research, radical alternative, institutional theory, structuration theory, foucauldian approach and latourian approach. Studies of this nature make possible to understand the historical development of accounting thinking and their sources of influence. In this sense, Wells (1976) identified the transition from normative and aprioristic to empiric research throughout 1960's and 1970's. Watts & Zimmerman (1990) identified that research in the eighties was predominantly positivist.

The works with foucaultian perspectives were identified in accounting for Baxter & Chua (2003) and Gendron & Baker (2005). Both analyzed the articles published in the AOS. Baxter & Chua (2003) identified eight articles whose theoretical referential was foucaultian, while Gendron & Baker (2005) identified the references to Foucault in the AOS.

#### 4 MOVEMENTS OF THEORIES IN INTERDISCIPLINARY FIELDS

After accounting thinking perspectives are defined, as well as their characteristics and mainstreams, how an author, or rather, an author's ideas entry in a field can be understood. Or even, when an author turns to be the theoretical foundation for addressing certain subjects. Gendron & Baker (2005) analyzed this subject based on the theoretical assumptions by Latour in regard to the *sociology of translation* and *support nets*. They also questioned academics about their first contact with Michel Foucault's works

This article, on the other hand, intends to analyze this subject starting from Bourdieu's perspective of scientific field (Bourdieu, 1976). The field notion for Bourdieu means a social space of dominance and conflicts, where individuals act according to their social position in this space, and guided by an objectively oriented political strategy (Bourdieu, 1976: 127). Bourdieu's assumption (Bourdieu, 1976:124) includes the definition of scientific field: "all practices in the scientific field are channeled for the acquisition of scientific authority (prestige, recognition, celebrity, etc., which is called "interest" for a scientific activity (a discipline, a section of that discipline, a method, etc.) ". Field is the space where social relationships are distributed as capital, either cultural or symbolic. Actors in each field have the skills to carry out functions and to fight for survival. For Bourdieu, such relationships are defined irrespective of human conscience. In the structure of the field (hierarchy of positions, traditions, institutions and history) actors acquire a body of guidelines to act in agreement with existing possibilities in that objective structure, that he calls *habitus*. Bourdieu works on the field, capital and *habitus* concepts to explain interactions in society. In this article this use of the Bourdieu's notion of field as theoretical referential allows to begin and to base the investigation of researchers' interactions with structures, agents and symbols.

Based on that notion of field, to understand some work it is necessary to understand production, the field of production, the relationship between the field in which it was produced and the field in which the work is received, or more precisely, the relationship between the author's position as well as the reader's, in their respective fields (BOURDIEU, 1997, p.13).

This analysis of the publications is a key step to distinguish the types of reading that are being carried out by the reader / author and authors' and readers' positions in their respective fields (Bourdieu, 1997; Chartier, 1985), as well as understand reception conditions (Wacquant, 1990) of the work by Foucault for accounting thinking, and how Foucault's thinking has established itself in accounting area.

It is also necessary to understand what makes a researcher look for grounding in other fields, and which are the intentions implicit in this action, and which are the possible returns obtained by the additional effort in developing research when assumptions are not easily accepted by the peers.

## **5 THE WORKS OF FOUCAULT**

The French philosopher Michel Foucault (1926-1984) has been influencing several fields of knowledge: history, philosophy, sociology and psychology, among others. Foucault studied in France, at the influential École Normale Supérieure, and later graduated in Philosophy and Psychology. He was a student of Maurice Merleau-Ponty and Louis Althusser and a contemporary of Gilles Deleuze and Roland Barthes. The first book published by Foucault was *Folie et déraison* in 1961. In 1963 he published *Naissance de la clinique* and in 1966 *The Order of Speech* and *Les mots et les choses*, in 1969 *The Archeology of knowledge*, in 1975 *Discipline and Punish* and in 1984 *History of Sexuality*. Foucault was a staff member at College of France, teaching History of the System of Thought. His last works and biography were written in the United States, where he lived the last years of his life. His work is frequently associated to post- modernism, post-structuralism and structuralism, but he never labeled his own work. His theories link power and the relationship between power and knowledge.

## **6 RESEARCH METHODOLOGY**

This article analyzes the nature and impact of Foucault's insertion in accounting thinking by collecting and systematizing of articles published in scientific journals of accounting where Foucault is referenced. Qualitative and quantitative

methods were used. This article has three levels of analysis, 1) systematization and description, 2) bibliometric and 3) Social Network analysis.

The first level of analysis, in order to discuss at what point in time Foucault settled down in the accounting area, and to what extent the thinking of Foucault is indispensable for the discussion of certain subjects in accounting, a qualitative and descriptive research was used.

The journals were selected - object of the study (see Table 1) and the articles were analyzed. The whole process of data classification was accomplished by at least two of the researchers, aiming at a better adjustment of definitions and reduction of the uncertainties that are inherent to this classification type. The instrument used for the reading of the texts was based on the following items: title, author (s), institution(s), theme, and context, research questions, research methods, conclusion and reading of Foucault's.

Chartier typology (1985) was used to distinguish reading types, which defines authors' appropriation of another area in 3 categories:

- a. Incidental appropriation - where it is not possible to establish relationship between the argument undertaken in the text and referential. It keeps very close interface with the argument developed;
- b. Topical conceptual appropriation - characterized by the fact of envisaging the use, although non-systematically, of quotations and – here and there - author's concepts. The appropriations are mobilized to reinforce arguments or results obtained and developed in a terminological picture that is not necessarily that of the author's;
- c. Appropriation of work method - developing appropriation ways of systematic use of author's notions and concepts, showing central concern with theory *modus operandi*.

For the purpose of this research, the articles under the categories 2 and 3 were considered together.

The second level of analysis, as for the quantitative methods, meta-analysis and Bibliometry were used. After theoretical referential was defined, **meta-analysis** acted as a research strategy, which should consider: research domain, variables and inclusion criteria (Glass, McGaw, Smith, 1981). It is important logics to generating consensus and generalizations on a phenomenon. Collecting and analyzing studies

published with characteristics as proposed in the objective of this work carried out meta-analysis. Hek, Langton & Blunden (2000) define meta-analysis as the quantitative part of a wider-reaching view called meta-synthesis. This type of research strategy allows a general view of works published in a specific area when a significant body of published research is already available. In that sense, the need to complement strategy with another qualitative strategy was considered in order to meet the objectives as proposed.

In addition to descriptive statistics, the instrument used for the assessment of author's productivity was Lotka's Law, from bibliometry, (Verbeek et al., 2002). The bibliometric research carried out allows quantifying published articles; average number of articles per author; concentration, time points and per journal distribution of articles. Authors' productivity can be analyzed through the law of Lotka - 1926 which is an empiric verification of scientific productivity by relating the number of authors and the number of contributions by each author in a logarithmic scale. This law sets forth that the number of authors that produced 2 articles equals 1/4 of those that produced 1; the number of those that produced 3 equals 1/9; the number of those that produced 4 equals 1/16 and so on, which means to say:

$$a_n = \frac{a_1}{n^2} \text{ where:}$$

$a_1$  = Number of authors that publish only one article

$a_n$  = Number of authors that publish  $n$  articles

$n$  = Number of articles

This law was established empirically by Lotka in the 1920's for scientific productions in Chemistry and Physics, and later widespread to other fields of knowledge. What is observed in these generalizations is that it settles down a different exponent for  $n$  through linear regression, which Lotka's case is 2. Studies on accounting production have been done by several authors such as Shields (1997) and Otchere (2003). Bibliometry as instrument of analysis has been thoroughly used as in Mcmillan & Hicks (2000) for research in corporate strategy. In accounting research, Chung, Cox and Pak (1992) used the Lotka's Law and an exponent of 1, 872 was found, therefore smaller than 2. Values lower than 2 mean larger



productivity than that established by the Lotka's, usually adopted as pattern, while values higher than 2 mean lower productivity. For values lower than 2, asymmetry is larger and, therefore knowledge is more concentrated in fewer authors. For values higher than two, asymmetry is smaller and, therefore knowledge is less concentrated.

The third level of analysis is based on Social Network Theory. Network analysis is a method of analyzing interactions of data collected from multiple sources. It allows examining the total number of links in the network, between the members, the types of interaction, the level of the relationship and strength of each relationship. The unit of analysis is the relationship itself. This method allows examination and comparison of relationship between clusters, two elements or all elements comprised by the network.

This study aimed to identify through co-author analysis a community or invisible colleges about this particular subject. Co-author analysis attempts to identify the interaction of an invisible college of experts about a particular subject that produces a mapping of research publications to be interpreted as networks of interpersonal contacts. According Kirby et al (2005) this is used as a tool for identification of subgroups and the shared knowledge of this community. Invisible college refers to a virtual bond that exists among scholars of a particular topic who communicate regularly with each other even though those scholars are not collocated at the same academic university or institution (Crane, 1972). One approach is to describe the relationship between the members of a network as observed in representative published literature. Recent work in the sociology of knowledge demonstrates a direct linkage between social interaction patterns and the structure of ideas, suggesting that scientific collaboration networks affect scientific practice (Moody, 2004).

In Network analysis, data are collected from every different sources, members or documents, and are displayed and analyzed using a matrix. Data analysis can be conducted using software packages, such as UCINET (by Borgatti, Everett, and Freeman, 1999) which includes Net Draw (Net Draw: 2.21 Graph Visualization Software. Harvard: Analytic Technologies – by Borgatti 2002) that allows visual representation of network participants and the links among them.

Our main research question addresses which author or journal is most central in the network and how can we understand this network regarding an emerging of an

invisible college in this area of critical accounting? Are these journals willing to discuss these academic needs in this particular field? Nodes with the greatest number of links or ties are the most central in network. The simplest centrality measure is based on direct links. Are the critical ties based solely on personal relationships or hierarchies, or have these ties become formalized so that they are sustainable over time?

According to the Code of Ethics of SCIP (Society of Competitive Intelligence Professionals) regarding the “*fully respect all requests for confidentiality of information*” and “*avoidance of conflicts of interest in fulfilling one's duties*”, authors names are represented by codes.

## **SAMPLE**

For the purpose of this research it was chosen for the analysis the articles that have been published in internationally renowned journals in English, with peer review. This choice was made to reduce bias or theoretical framework not reviewed by a scientific committee, which happens in the works under development. The databases used were PROQUEST Global ABI/INFORM and SCIENCE DIRECT. For the selection of the articles the following key words were used - Key: Foucault, Foucauldian, Foucaultian, foucauldian or foucaultian. In PROQUEST the two available selection options were consulted: Citation and Abstract and Citation and Document Text. In SCIENCE DIRECT ACCESS database the only available selection option was consulted: Abstract, Titles, Keywords and Authors. Articles selected totaled 123, published in 68 newspapers. Therefore, the number of researched issues totaled 6,701.

In agreement with the period included by the databases for each journal, the included oldest date is October of 1968 - Management Accounting Research - followed by Accounting Review, whose issues are available as of 1971. Total available issues for access in the period are 1,707, as shown in table 1. For instance, in accounting and Business Research the research was accomplished from volume 4, 1973 to volume 4, number 3, 2004. In this period 174 copies were published, which 4 contained articles with references to Foucault. The total of articles was also 4, in other words, 1 per issue. In some cases there was more than 1 article per issue.

**Table 1 – Sample and total articles analyzed**

	Journal	Country	Initial Date	Final Date	Number of issues available for access (A)	Total of issues with articles (B)	Total of articles	B/A %
1	Accounting and Business Research	UK	1973	2004	174	4	4	2.30
2	Accounting, Auditing & Accountability Journal	UK	1992	2004	62	36	60	58.06
3	Accounting, Organizations and Society	UK	1976	2005	151	8	8	5.30
4	Canadian Accounting Perspectives	Canada	2001	2004	6	2	2	33.33
5	The CPA Journal	USA	1981	2004	597	1	1	0.18
6	Critical Perspectives on Accounting (Elsevier)	USA	1990	2005	69	19	22	27.54
7	Financial Accountability & Management	UK	1985	2004	107	1	1	0.93
8	The International Journal of Accounting	UK	1971	2004	66	1	1	1.52
9	The Irish Accounting Review	Ireland	2004	2004	1	1	1	100.0
10	Journal of Accounting Literature	USA	1982	2003	22	2	2	9.09
11	Journal of Business Finance & Accounting	UK	1974	2004	250	1	1	0.40
12	Journal of Management Accounting Research	USA	1994	2003	13	2	3	15.38
13	Management Accounting Research	UK	1992	2004	51	2	2	3.92
14	Managerial Auditing Journal	UK	1992	2004	103	4	5	3.88
15	Accounting History*	Australia	1998	2005	13	3	3	23.08
16	Accounting Historians Journal*	USA	1994	2005	22	7	7	31.82
	TOTAL				1.707	94	123	7.21

\* Two journals analyzed where available at Find Articles [www.findarticle.com](http://www.findarticle.com)

The 16 journals analyzed include the period from 1971 to 2005, according to the availability of those in PROQUEST: ABI / Global INFORM and SCIENCE DIRECT ACCESS, with a collection of approximately 1,800 Journals each one.

## **7 RESULTS OF THE RESEARCH - FOUCAULT'S CONTRIBUTION TO ACCOUNTING**

### **7.1 Quantitative Analysis**

Of the 68 scientific journals with 6,701 published articles, 123 were identified, in 16 journals with reference to Foucault done in the title or abstract. 135 authors published those 123 articles, what results in an average of 0.91 articles per author, meaning that several articles were written in co-authorship. Of these 16 journals, 1,707 issues were examined: 94 contain 123 articles that referenced Foucault, with an average of 1,309 articles per issue.

The first article found was published in 1986 in *Accounting, Organization and Society* - v.11, n.º 2 for Hoskin. K. W. and Macve, R. H. under the title *Accounting and the examination: The genealogy of Disciplinary Power*, and the last one in 2005 in *Critical Perspectives on Accounting* - v. 16, n.º 3 published for Birkin, F., Edwards, P. and Woodward, D. under the title *Accounting's Contribution to Conscious Cultural Evolution: an End to Sustainable Development*.

The analysis per journal reveals a larger presence of the articles published in *Accounting, Auditing & Accountability Journal* and in *Critical Perspectives on Accounting*, with 60 and 22 respectively of the total of 123 works, being the two journals together responsible for 66,66% of the production for the period.

In geographical terms, it is observed that of the 16 newspapers under investigation, 8 were published in UK; 5 in the US, 1 in Canada; 1 in Australia and 1 in Ireland. This reveals a publication concentration in the European journals.

As for temporary distribution, table 2 shows higher production as of 1992, with significant volumes in 1994, 1996, 2002 and 2003

**Table 2** – Temporal Distribution of articles

<b>Year</b>	<b>Number of articles</b>	<b>%</b>
1986	2	1,63
1987	2	1,63
1988	1	0,81
1989	1	0,81
1990	2	1,63
1991	0	-
1992	5	4,07
1993	9	7,32
1994	13	10,57
1995	9	7,32
1996	11	8,94
1997	6	4,88
1998	11	8,94
1999	7	5,69
2000	7	5,69
2001	2	1,63
2002	12	9,75
2003	15	12,19
2004	7	5,69
2005	1	0,81
Total	123	100.00

## 7.2 Qualitative Analysis

The total of 123 articles was analyzed according to the sample. Of the total, 5 were not considered in the analysis since they present book reviews. In the sample, the first two articles published with reference to Foucault date from 1986, one published in *Accounting, Organization and Society* (AOS), and the other in the *Journal of Management Accounting Research*. The acceptance for publication of an article is a form of accepting and of to certain point legitimating a new author's entrance in that area. That is confirmed by the continuity of articles based in Foucault published in *Accounting, Organization and Society* in the last 13 years.

It was possible to notice that only 5 articles were used to address the ideas of Foucault as opposition, refusing his theory for the analysis and the understanding of a certain subject, as in Townley, B. in *Managing by Numbers: Accounting Personnel Management and Creation of the Mathesis*, published in *Critical Perspectives on Accounting* - v. 6, 1995. The author considers Foucaultian analysis of accounting deficient for having engaged mainly in accounting for what it appears to be, and not

what it really is. However, practically all of the articles take up the ideas by Foucault, thus configuring the author's reception and acceptance in accounting thinking. Two articles belong to authors that refuse the ideas of Foucault when these are used as only a way of understanding reality; however, they accept them when joined to others.

As for the relationship between the field it was produced and the field it was received, it was noticed that Foucault is present in most of the theoretical articles. The need to look for answers that can no longer be answered fully through commonly used theories in the field of knowledge leads a researcher to a search in other areas. An attempt for insertion is carried out through the dialogue between author/researcher and author/theoretician. First, applied studies come into the scenario in the attempt of checking on the possibility of inserting Foucault's theory in the new field. Secondly, Foucault can be found in articles in history of accounting and organizational and social accounting; in other words, directly associated to the field it was produced. In smaller amounts, Foucault's ideas were found applied to the analysis of financial and budget accounting, in accountability, and in auditing, among others.

Some readings and superficial references do not necessarily mean that the ideas are the basis for the discussions. Following the typologies as defined by Chartier; a) incidental appropriation, b) topical conceptual appropriation, and c) appropriation of the *modus operandi*, it was decided to use typologies b and c together. A future research analyzing the articles under typologies b and c must be conducted. The results revealed that 40% of the articles refer the appropriation of the *modus operandi*, in other words, the authors incorporated Foucault's notions and concepts systematic in their works.

Based on this result, it was possible to verify that 40% of the articles are based on Foucault, and 52% address the disciplinary aspects of accounting. In other words, the subject of discipline, surveillance, and practices of behavior based in the work of *Surveiller et Punir* published in 1975. They are followed by the subject regarding discourse (22%). The aspects associated to the construction of accounting knowledge, based on *The Archaeology of Knowledge*, published in 1969, are found in smaller amount (9%). Finally 17% presents theoretical discussions and studies of

applied cases. The remaining 60% shows articles mention Foucault as incidental or topical appropriation.

## 8 COMPARATIVE ANALYSIS OF AUTHORS'S PRODUCTIVITY

### 8.1 The Generalization of the Law Of Lotka

Chung, Cox and Pak (1992), presented an estimate for coefficient  $c$  of the generic Law of Lotka expressed as

$$a_n = a_1 \cdot \frac{1}{n^c}$$

As already pointed out in Analysis of Authors' Productivity in the present work, this coefficient  $c$  can be estimated through linear regression. For the sample under analysis,  $c$  coefficient calculated was 2.40. The correlation coefficient between the variables in question was 0.9985, what means a 99% confidence interval. The determination coefficient  $R^2$  resulted in 0.9971, what represents a satisfactory explanatory power of the model. This way, it can be concluded that the number of authors with more than one publication per sample of journals under analysis can be estimated based on the equation below:

$$a_n = a_1 x \frac{1}{n^{2,02}}$$

It is noticeable that this coefficient  $c$  (2.40) is higher than the pattern for Lotka and that calculated by Chung, Cox and Pak (1992). A comparison between data in the present study and the patterns of Lotka and Chung, Cox and Park can be observed in Table 3:

**Table 3 – Coefficient  $c$**

Studies	Chung, Cox e Pak	Law of Lotka standard	Sample data
C	1.87	2.00	2.40
% Authors with one article published	57.7	60.8	74,81

If the sample under discussion - which totals 135 authors - followed the Law of Lotka, as described above, it would have 82 authors with one single publication

(60.8%, out of 135), rather than 101 (74.81%) as observed. This means lower productivity when compared to the international pattern verified by Lotka. Table 4 shows a comparison between data observed and international patterns verified by Lotka.

**Table 4** – Comparison of productivity between data in the sample and international standard

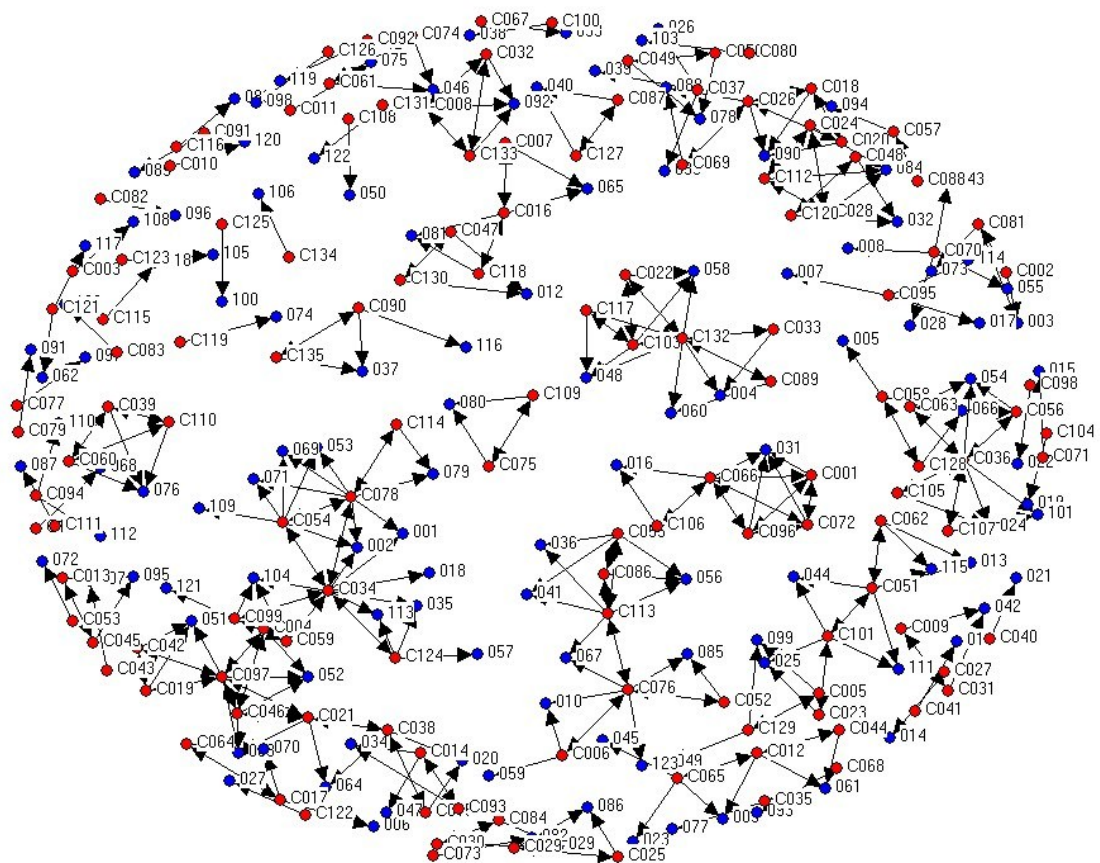
Number of articles per author	Number of authors			
	<b>Data Observed</b>	<b>%</b>	<b>International Standard</b>	<b>%</b>
1	101	74,81	82	60.80
2	19	14,07	21	15.20
3	8	5,93	9	6.80
4	4	2.96	5	3.80
5	2	1,48	3	2.43
6	-	-	2	1.69

In the case of the present work coefficient  $c$  calculated is a little higher when compared to that calculated by Lotka. This means that accounting research based in Foucault along the last 13 years, according to Bibliometric patterns, cannot be considered a trend but an approach established inside a vision denominated more generally as "Critical Accounting". The research also suggests that this more critical and social vision of accounting is more concentrated in Europe and has been expressed more often in some specific journals like Accounting, Auditing & Accountability Journal, Accounting, Organizations and Society and Critical Perspectives on Accounting (Elsevier). Together, they are responsible for 73% of the production of the period. This concentration of the production considered more critical finds parallel, for instance, in the literature where the new themes were always expressed through exclusive journals, sometimes created for such end.

## 8.2 Social Network Analysis

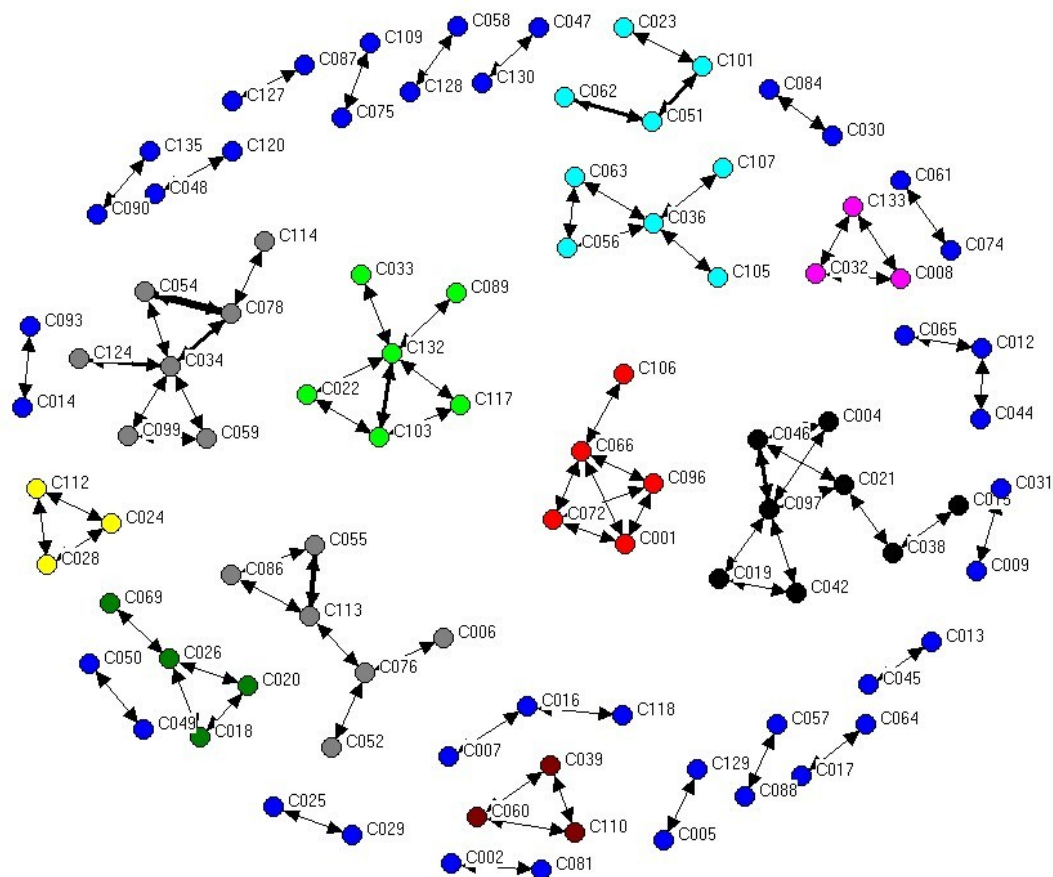
Diagram 1 shows the social network of authors and journals. The blue nodes represent the publications and the red nodes the authors. The ties represent the links of authorships.





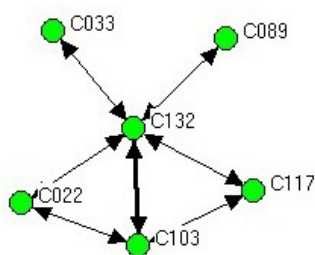
**Diagram 1 – Social network of authors and journals**

Diagram 2 shows the network of co-authorships. Isolated authors were excluded. The ties allow identifying invisible networks. For this analysis, the 4 main colleges were selected.



**Diagram 2 - Social network of co-authorships**

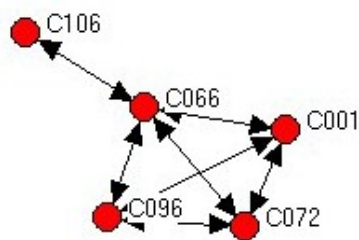
It is possible to note that 4 (four) authors are most central in the network. They have four or more ties. Author C034 according to Chartier [6] typology wrote articles either topical conceptual or using Foucault's work methods, while C132, C066 or C097 used incidental appropriation. To understand an emerging invisible college in this area, a closer analysis of those four groups is necessary.



**Diagram 3 – Invisible College 1**

Diagram 3, identifies an invisible college (1) formed by 6 authors of different countries and institutions, being 1 from Canada and 5 from UK.

The central author in the network is C132 (UK). C103 and C132 possess strength ties. The group is highly cohesive.



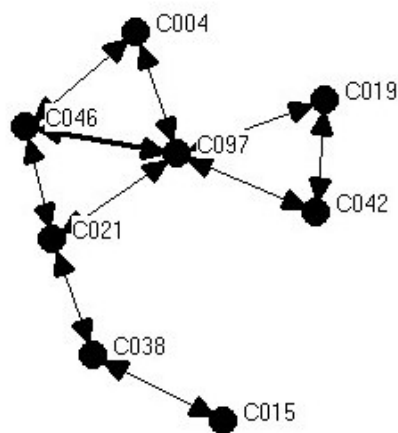
**Diagram 4 – Invisible College 2**

The diagram 4, identifies an invisible college (2) formed by 5 authors of different countries and institutions, being 1 from UK and 4 from NZ.

The central author is C066 (NZ).

All possess strength ties of same intensity.

The group is highly cohesive.



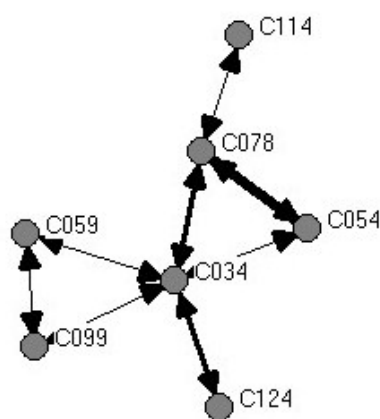
**Diagram 5 – Invisible College 3**

The diagram 5, identifies an invisible college (3) formed by 8 authors of different countries and institutions, being 1 from UK, 5 from US, 1 from AU and 1 from CA.

The central author is C097 (CA).

C097 and C046 possess strength ties.

The central author unites two different groups.



**Diagram 6 – Invisible College 4**

The diagram 6, identifies an invisible college (4) formed by 7 authors of different countries and institutions, being 2 from UK, 4 from US and 1 from AU.

The central author is C034 (USA).

C078 and C054 possess strength ties in larger intensity.

C034 and C124 possess strength ties on average intensity.

C034 and C078 possess strength ties on average intensity.

The central author unites two to three different groups.

The use of computerized social network methods allowed building co-authorship networks similar to friendship relationship. It lets identifying a research field. The countries with higher centrality are US, UK, CA and NZ. Diagram 6, Invisible College 4 refers to the network whose authors published articles using the theory of Foucault. Colleges 1, 2 and 3 used Foucault as "incidental appropriation."

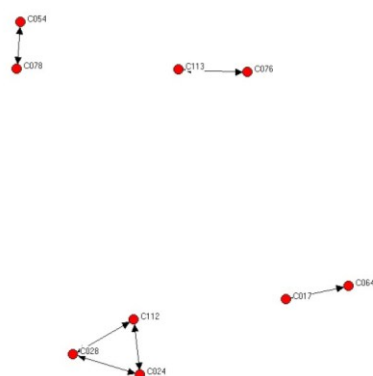
Are the critical ties based solely on personal relationships or hierarchies, or have these ties become formalized so that they are sustainable over time? With the analysis, the co-authorship links are formalized because they are building with formal information, such as published articles.

According to Moody (2004), co-authorship is becoming increasingly more common in the social sciences and in his research, the co-authorship pattern shows a steadily growing cohesive core, suggesting that while authors might specialize, their skills marry well with others creating an integrated collaboration network. In this research, table 5 reveals that from 135 authors, 65 (52,8%) of them are isolated authors while 58 (47,2%) worked collaboratively which allows the emerging of a network.

**Table 5 – Co-authorship**

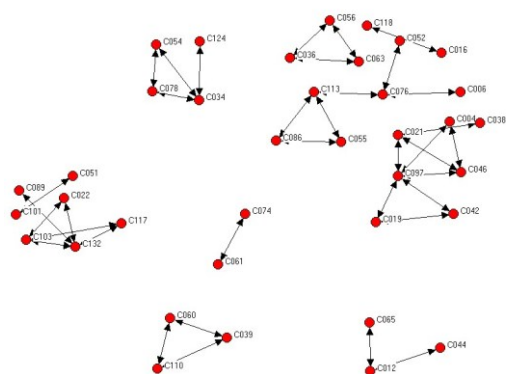
<i><b>Co-authors</b></i>	<i><b>Total of articles</b></i>	<i><b>%</b></i>
0	65	52,8
1	43	35,0
2	14	11,4
3	1	0,8
Total	123	100

## 9 CHRONOLOGY



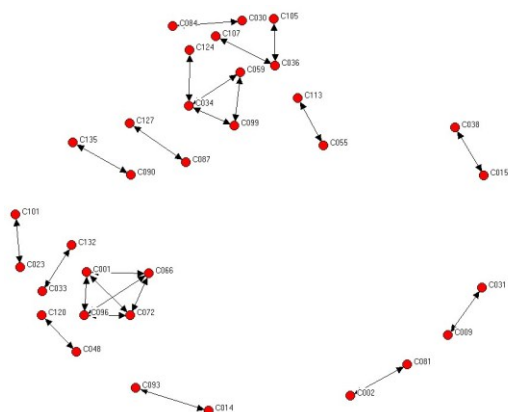
**Diagram 7 – 1986-1990**

Diagram 7 refers to the period from 1986 to 1990 when the ideas of Foucault began to be incorporated in Accounting Research. In this period it is also observed the beginning of the formation of the nucleus of the first invisible college (college 4 with C054 and C078)



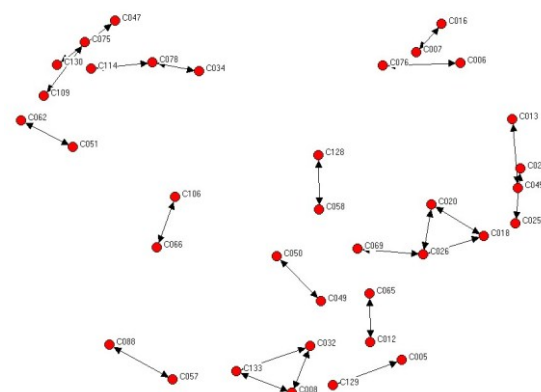
**Diagram 8 – 1991-1995**

From 1900 to 1995, the accounting research motivated in Foucault works became to increase as can be seen in Diagram 8



**Diagram 9 – 1996-2000**

Diagram 9 indicate a decrease in this kind of research from 1996 to 2000, and the formation of the invisible college 2 (C096)



**Diagram 10 – 2001-2005**

From 2001 to 2005, Diagram 10 denote the return to the production's level of 1991 to 1995

## 10 CONCLUSION

This article is based on the notion of scientific field to understand how an author enters a field of knowledge. The purpose is to verify how Foucault's insertion in accounting was carried out, and in what area.

Under the Bibliometric perspective, this study reveal a significant influence of the ideas of Foucault in accounting research, mainly in critical accounting. It is observed that this influence is concentrated in the European publications, mainly Accounting, Auditing & Accountability Journal and Critical Perspectives on Accounting, and could be seen in a more marked way as of 1992. In productivity terms, the authors that are devoted to the theme present a very close behavior as that inferred by the Law of Lotka, but inferior to the one found by Chung, Cox and Pak (1992) in their research in accounting in general.

The qualitative research based on the reading of articles reveals information as the proximity of the fields in that the theory was produced and the one that was received, as well as the great receptivity on the part of the authors and low refusal of the ideas of Foucault. It is noticed that only published articles in scientific journals were analyzed.

The results of the social network analysis reveals the journals and authors in a more centralized position and also a network with formalized relationships. Four main invisible colleges were identified and analyzed.

This study contributes to identifying the development of a new area of research through the movements of theories between fields in Critical Accounting. It also identifies how several researches using Foucault's works have been emerging from a need to explain power and disciplinary aspects in accounting.

Future research will detail the analysis with relationships and hierarchies as well as time series. Based on this analysis of the 123 articles hypotheses can be formulated. Some issues raised by Bourdieu (1976) could only be answered through direct contact with the authors of these articles, since, according to the authors, a new author's insertion in an area may take place for theoretical reasons or for personal reasons, as for instance the need for recognition as an authority, or to cause visibility and confrontation to the logic of the system.

## 10.1 Limitations and Recommendations

When does an author become indispensable to our reading routine? The contact with the works of Foucault was essential for his insertion in accounting thinking. Foucault can already be found in the contents of disciplines of accounting programs in the United States and Great Britain on the Internet.

This study is an approach to understand the process of building a research area rather than conclusive. It is necessary to identify the factors that promote collaboration network. Understanding the networks that constitute the field is a step to understand the ways in which ideas can be exchanged.

Other issues to be answered in future research, based on Gendron & Baker (2005), are: which the support the authors received from journals in addition to AOS.

A limitation of the study refers to the fact that other journals may not have been included in the database analyzed. Those included and available may not cover the full time period that one journal has been published.

## REFERENCES

BAXTER, J., CHUA, W. F. Alternative management accounting research – whence and whither. **Accounting, Organizations and Society**, v. 28, p. 97-126, 2003.

BOURDIEU, P. Que es hacer hablar a un autor? A propósito de Michel Foucault. In: BOURDIEU, P. **Capital cultural, escuela y espacio social**. México: Siglo Veinteuno, 1997.

BOURDIEU, P. Le champ scientifique. **Actes de la Recherche en Sciences Sociales**, n. 2/3, p.88-104, june, 1976.

CALHOUN et al. (Orgs.). **Bourdieu: critical perspectives**. Cambridge: Polity Press, p. 235-262, 1993.

CHARTIER, R. (Orgs.) **Pratiques de la lecture**. Paris: Éditions Rivages, 1985.

CHUA, W. F. Radical developments in accounting thought. **The Accounting Review**, v.61, n.4, p. 601-632, 1986.

CHUNG, K. H.; COX, R. A. K.; PAK, H. S. Patterns of research output in the accounting literature: a study of the bibliometric distributions. **Abacus**, v. 28, n. 2, p.168-185 1992.

CRANE, D. **Invisible colleges**: diffusion of knowledge in scientific communities. Chicago: University of Chicago Press, 1972.

GERGRON, Y., BAKER, C. Richard. On interdisciplinary movements: the development of a network of support around foucaultian perspectives in accounting research. **European Accounting Review**, v.14, n.3, p. 525-569, 2005.

GLASS, G.V., MCGAW, B., SMITH, M.L. **Meta-analysis in social research**. Beverly Hills, CA: Sage, 1981.

HEK G, LANGTON H & BLUNDEN G. Systematically searching and reviewing literature. *Nurse Researcher* 7 (3): 40-57 In. BOOTH, Andrew. **Cochrane or cock-eyed?**: hHow should we conduct systematic reviews of qualitative research? paper presented at the qualitative evidence-based practice conference, taking a critical stance. Coventry Universe, p.1416, may, 2001.  
<http://www.leeds.ac.uk/educol/documents/00001724.htm> accessed in 01-03-2005

KIRBY, Joshua A. Hoadley, Christopher M, CARR, Alison A. - Chellman instructional systems design and the learning sciences: a citation analysis. **Educational Technology, Research and Development**. Washington, v. 53, n. 1, p. 37, 2005.

LATOUR, B. **Science in action**, Cambridge: Harvard University Press, 1987.

MCMILLAN, G. S.; HICKS, D. Science and corporate strategy: a bibliometric update of hounshell and smith. **Technology Analysis & Strategic Management**, v.13, n.4, p. 497-505, 2001.

MCMILLAN, G. S.; HAMILTON, R. D. Using bibliometrics to measure firm knowledge: an analysis of the US pharmaceutical industry. **Technology Analysis & Strategic Management**, v. 12, n.4, p.465-475, 2000.

MOODY, James. The Structure of a social science collaboration network: disciplinary cohesion from 1963 to 1999. **American Sociological Review**. Albany, .v.69, n.2, p.213, apr. 2004.

OTCHERE, I. Accounting and finance at forty: a retrospective evaluation. **Accounting & Finance**, v.43, n. 2, p. 211-231, 2003.

RIAHI-BELKAOUI, A. **Research perspectives in accounting**. USA: Quorum Books, 1997.

SCIP. **Society of ompetitive intelligence professionals**. Disponível em: <<http://www.scip.org/about/index.asp>>. Acesso em: 01 set. 2005.

SHIELDS, M. Research in management accounting by north americans in the 1990s. **Journal of Management Accounting Research**, v.9, p.3-60, 1997.

VERBEEK, A. et al. Measuring progress and evolution in science and technology - I: the multiple uses of bibliometric indicators. **International Journal of Management Reviews**, Oxford, v.4, n.2, p. 179–211, 2002.



WACQUANT, Loïc. Bourdieu in America: notes on the transatlantic importation of social theory. In: WATTS, R.L.; ZIMMERMAN, J.L. Positive accounting theory: a ten year perspective. **The Accounting Review**, v. 65, n.1, p. 131-156, 1990.

WATTS, R.L. & ZIMMERMAN, J.L. Positive accounting theory: a ten-year perspective. **The Accounting Review**, v. 65, n.1, p. 131-156, 1990.

WELLS, M.C. A revolution in accounting thought? **The Accounting Review**, v.51, n.3, p. 471-482, 1976.

