

Cognition As A Research Object In The Scientific Literature On Small Business And Entrepreneurship

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Abstract

The aim of this study is to highlight the characteristics of research on cognitive objects in the scientific literature on small business and entrepreneurship. The study covered the period January 1987 to August 1994, and involved identifying and analyzing records from the ABI/INFORM database, together with the papers to which the records referred. The conceptual framework used to classify cognitive studies emphasized four categories of cognitive objects: processes, products, predispositions and props. The aspects analyzed were the journals in which the papers appeared, the specific cognitive objects studied, the samples used, the data collection and analysis techniques employed and the disciplines involved. In all, 156 papers published in 28 different scientific journals were analyzed.

Introduction

In recent years, interest in research on small business and entrepreneurship has grown considerably. The types of papers published in the traditional administrative science journals provide ample proof of this. Moreover, the number of journals devoted exclusively to these areas is increasing, and the journals themselves are gaining recognition within the scientific community (e.g. *JBV*, *ETP* and, in French, the *Revue internationale PME*). The same comments apply to scientific conferences and conventions. Some of these scientific gatherings have engendered major publications on small business and entrepreneurship (e.g. *Frontiers of Entrepreneurship Research*). In view of the special features of small businesses - which are not "small" large firms (Dandridge, 1979; Welsh & White, 1981) - most people would agree on the need to develop specific small business theories (d'Amboise & Muldowney, 1988).

As a result of all this intense activity, a number of leading researchers have proposed ideas and directions related to theory building in the field of small business and entrepreneurship. They include Churchill & Lewis (1986), Wortman (1986, 1987), Ireland & Van Auken (1987), Bygrave (1989, 1993), Stevenson & Harmeling (1990), Herron *et al.* (1991, 1992), Bygrave & Hofer (1991), Hofer & Bygrave (1992) and MacMillan & Katz (1992). Most of them, with the notable exception of Bull & Willard (1993), do not use *cognition*, i.e. the actors' thinking, as a key concept. Yet, the cognitive aspect is considered by a growing body within the scientific community as essential in explaining or understanding how organizations function. It has been the subject of some widely disseminated

research publications, such as *Mapping Strategic Thought* (Huff, 1990) and *The Thinking Organization* (Sims & Gioia, 1986). Some leading scientific journals have also published special issues on cognition in administrative science - for example, the August 1994 special issue of *Organization Science*, and the special issues of the *Journal of Management Studies* in May 1992 and July 1989. In organization studies, cognition is attracting a steady and apparently growing interest. And there is nothing to suggest that its relevance is limited to the corporate sector.

In the field of small business and entrepreneurship, the place occupied by cognition in knowledge production is much less obvious. In fact, we know very little about the importance and characteristics of cognitive studies in that field. This research aims to fill the gap. More specifically, it aims to highlight the characteristics of research on cognitive objects in the scientific literature on small business and entrepreneurship. The intended contribution is essentially to stimulate reflection and debate among academics in our field. The description and analysis of cognitive studies will raise questions and issues relevant for the development of small business and entrepreneurship theory. In this paper, we will begin by briefly examining the notion of cognition, before presenting the conceptual framework used here to organize cognitive studies in the scientific literature on small business and entrepreneurship. We will then describe the main elements of the operational framework, showing that the study is based on an analysis of documents drawn from the ABI/INFORM databank, i.e. data records and the papers to which they referred. Finally, the results will be presented and discussed.

The Notion of Cognition

The notion of cognition is difficult to handle. To begin with, no nomenclature of cognitive terms has been created, and no consensus seems to exist as to what is "cognitive" and what is not (Meindl *et al.*, 1994). A brief look at the main terms associated with cognition by different authors in the publication directed by Andler (1992) following a major convention on cognitive science at the International Cultural Centre in Cerisy-la-Salle (France) clearly illustrates the ambiguity of the notion. The terms used include language, reason, perception, planning, information processing, assimilation, storage, and accommodation of new information, directed action, conceptual organization, learning, communication, aptitudes, propensities and abilities of the human brain, mental entities such as mental processes and states (intentions, beliefs, desires, etc.), mental representations (e.g. beliefs, intentions, preferences) and public representations (e.g. signals, statements, speech, texts). Cognitive-type research objects seem to be numerous, varied and unclassified, although cognition always appears to be strongly related to the study of *thinking*.

To capture different dimensions of that notion in organization studies, some conceptual frameworks have been proposed. Meindl *et al.* (1994) suggested that organizational research centred on cognition could be classified into two broad categories, depending on whether it was concerned with the processes or structures of thought: "Emphasizing processes meant studying how information and beliefs are combined and used in forming judgments and making decisions. Emphasizing structure meant describing knowledge and its inherent organization" (p.291). They noted that very little research had so far done both. Moreover, they mentioned work on the "cognitive aids" used or established to shape or represent the thoughts of organizational actors, including decision support systems and information systems. In another study, Schneider & Angelmar (1993) noted that "regardless of which paradigm is applied in management research, there seems to be convergence on the core properties of cognition" (p. 349) and, accordingly, proposed a framework composed of three elements to organize

research on cognition in management/organizational literature: cognitive structures (schema, beliefs, scripts, etc.), i.e. knowledge acquisition models or epistemological structures; cognitive processes, or the specific way in which knowledge is selected, organized, transformed, stored and used; and lastly, cognitive styles, which refer to the individual, collective and organizational differences in how information is processed. Such classification schemes suggest that the study of cognition in an organizational context can be said to include *processes*, *products*, *predispositions* and *props*. This conceptual framework will be discussed in more detail in the next section.

Cognitive Processes, Products, Predispositions and Props

Research on cognition in organizations may fall into one or more of four categories, depending on the object under study: cognitive processes, cognitive products, cognitive predispositions or cognitive props. The first two categories were present in the frameworks described above; however, some precisions are needed on the concept of "process", and cognitive "products" will not be limited here to cognitive "structures". The third category is close to Schneider & Angelmar's cognitive style category, although it is broader in scope. Cognitive props seem to resemble what Meindl *et al.* called "cognitive aids".

Cognitive process research looks at the operations, mechanisms, tasks and activities that reveal the *mind's functioning*, and having to do with the acquisition, processing, storage, recovery, transformation and use of information or knowledge. They are basically aimed at showing *how* the objects of thought (individual, collective or organizational) are formed, maintained and changed. It is important that this be made very clear: the study of a process is the study of the *passage* from one cognitive state (or product) to another. The focus is therefore on what happens between a cognitive state at time *a* and a cognitive state (of the same type or not) at time *b*. A cognitive process is basically dynamic or progressive in nature.

Research on cognitive products is concerned with the content of the mind rather than its functioning. It may, for example, consider the characteristics of thought, seen as the result of a prior process, but a relationally unstable result existing at a given time. Cognitive products may be mental structures, such as implicit theories, scripts or schemes; that is, the referential systems that guide individuals in their interventions, forecasts and interpretation of events. However, such products will not necessarily be general knowledge acquisition models. They may be cognitive entities such as significations, perceptions, interpretations, reasons, anticipations, motives or intentions related to given situations.

Some researchers have addressed the question of individual cognitive predispositions, i.e. the personal characteristics often of interest to psychologists. This category clearly includes cognitive styles, and also basic values or attitudes existing prior to the situation under investigation, and any other general disposition closely related to personality or individual difference (tolerance of ambiguity, cognitive complexity, etc.). As Schneider & Angelmar (1993) suggest for cognitive styles, it should be remembered that groups and organizations also possess "cognitive predispositions". It has to be noted that values and attitudes may in fact be cognitive products, depending on how the authors treat them. For example, if attitudes are treated as the general tendencies characterizing personality and are

measured by means of a uniform test, they would be cognitive predispositions. On the other hand, if the term is used to denote a state of mind constructed and directly associated with a specific situation occurring in a given spatial and temporal context (e.g. a favourable or unfavourable attitude to exporting), then attitude would be a cognitive product, rather like a perception or an intention.

The final category is cognitive props. These are the means, tools, methods and procedures likely to help a given actor (researcher, consultant, subject, etc.) in formulating or representing cognitive products or processes. Research on cognitive props is concerned with how these elements help direct or describe thought, and is therefore basically instrumental or methodological in nature. This category usually includes individual or collective decision-making support systems, especially the problem formulation aspect. It also includes studies where cognitive mapping plays a leading role, whether as a support for communication with self or others, or as an analysis tool, as well as research on artificial intelligence and, more particularly, knowledge engineering, whose most spectacular results take the form of expert systems development.

The objective of this study, derived from these four major categories, was to highlight the characteristics of research in the scientific literature on small business and entrepreneurship aimed at least partially at investigating cognitive processes, products, predispositions or props. The following section describes the main elements of the operational framework used.

Operational Framework

The operational framework is concerned with the methodological aspects of the research. In our study, it was divided into two parts: (1) the identification and selection of records from the ABI/INFORM databank; and (2) the presentation and analysis of the papers to which the selected records referred. First, however, some information is needed on the database itself. According to the *ABI/INFORM Ondisc User's Guide* (1990), the ABI/INFORM database contains information on papers published in more than 800 English language periodicals, 75% of which are American. The periodicals, which include professional and scientific journals, cover all the major management and business fields.

Identification and Selection of the Records

The computerized search on CD-ROMs containing the ABI/INFORM data was restricted to papers published between January 1987 and August 1994. First, the precise terms for the search had to be established. On one hand, "small business" and "entrepreneurship" were both retained. The two concepts should not be confused, and they have in fact sometimes produced completely separate research (Wortman, 1986, 1987). Research on corporate entrepreneurship or "intrapreneurship" was not considered, unless it made reference to intrapreneurship in small business (see especially Carrier, 1994). The same applied to entrepreneurship in government and non-profit organizations. On the other hand, as mentioned above, some terms were considered representative of the type of vocabulary likely to be used by researchers investigating cognitive processes, products, predispositions and props within organizations. These were: cognition, representation, interpretation, scheme, construction, symbol, vision, perception, attribution, belief, intuition, thinking, meaning, making sense, receptivity, intention, objective, motive, frame, reason, sense making, ideology, decision, problem solving,

expectation, preference, anticipation, attitude, value, opinion, information, knowledge, image, interest, goal, script, language, attention, memory, categorization and artificial intelligence. Truncating (e.g. cognit?; schem?) was used to locate words sharing the same root. Clearly, the list should not be viewed as an exhaustive inventory of all the concepts used in cognitive studies; as we said earlier, there is no nomenclature of cognitive terms. However, it may be difficult to find an article in organization studies that could be said to be "cognitive" while not containing at least one of the terms of the list, regardless of paradigms, perspectives or approaches.

Search statement was formulated using these terms, as follows: (small business **or** entrepreneur?) **and** (cognit? **or** represent? **or** ... **or** artificial intelligence). The aim was to locate all records containing at least one of the terms from each of the two sets, in the title, keywords, summary or elsewhere. In view of the limits imposed by the computer hardware, the statement was broken down into several parts. More than 30,000 records were read onscreen. Clearly, many of the records identified by this procedure had to be rejected simply because the truncated terms often produced records that had nothing to do with cognition (for example, the term "perce?" produced a number of references containing the words "percentage" or "percent").

We also had to determine whether the papers identified had been published in a journal aimed mainly at the scientific community (e.g. *JSBM*), or if they contained opinions, reflections, analyses or other personal viewpoints published in a vehicle aimed mainly at practitioners (e.g. *D&B Reports*). Since the research was concerned with the production of knowledge intended to make a conceptual or theoretical contribution to the field of small business and entrepreneurship, only publications in the former category were retained. Publications in journals aimed explicitly at both groups (e.g. *Management International Review*) were also retained. The decision to assign a record to a particular category was based on information from *Cabell's Directory of Publishing Opportunities in Business and Economics* or from the journals themselves.

The final task was to ensure that the sole or partial objective of the paper included at least one cognitive process, product, predisposition or prop. A simple allusion was not sufficient. Similarly, a record was rejected if it clearly stated that the paper simply described or "generalized" knowledge from previous research or was composed mainly of the comments and reflections of practitioners. This was often the case for papers published in journals aimed at both academics and practitioners. Records in which one or more cognitive terms were used solely to interpret or comment on the results of research on a non-cognitive issue were also rejected. In other words, the research had to attempt to make a scientific contribution *and* focus at least partly on one or more of the four cognitive aspects.

The decision to retain or reject a record was therefore based on a content analysis. The title of the paper was often an excellent source of information here. Similarly, if the list of keywords contained at least one cognitive term, or if the summary contained a number of cognitive terms or repeated occurrences of one term, this suggested that cognition played an important role in the research. Finally, in all except thirteen cases, the papers to which the records referred were also consulted (in the case of the thirteen, it proved impossible to locate the journal concerned, despite extensive efforts). The process was somewhat fastidious, but yielded important and sometimes essential information for the subsequent description and analysis of the papers.

Description and Analysis of the Papers

A table of papers retained was drawn up, although space restrictions prevent us from including it here (the table appears in its entirety in Cossette, 1995, p. 508-524). It contains information on references, cognitive objects, samples, data collection techniques, data analysis techniques and disciplines. The analysis and subsequent interpretation were guided by the following questions:

Reference: Are there many references? Has their number decreased, remained stable or increased since 1987? To which journals do they refer? Are they specialized small business or entrepreneurship journals? Do the papers appear mainly in academic journals or in those aimed at both academics and practitioners? Are they mainly "conceptual" or "empirical" in nature, and has this ratio remained basically unchanged since 1987?

Cognitive object: Does the paper investigate cognitive processes, products, predispositions or props? Which is the most common type within each category? How can they be characterized?

Sample: Is the sample usually composed of individuals, groups, organizations or industries? What size is it? Were the subjects who took part in the research very varied?

Data collection technique(s): What techniques are used most frequently? Do they vary? Have some techniques tended to be used more or less over the years? To what extent are the techniques obtrusive?

Data analysis technique(s): What techniques are used most frequently? Do they vary? Have some techniques tended to be used more or less over the years? How sophisticated are the techniques? Do they mainly involve so-called quantitative or qualitative methods?

Discipline(s): Which discipline(s) or sub-fields of administrative science are involved? More specifically, based mainly on the information contained in the CODE heading of the records, into which of the following nine areas does the research fall: strategy, organizational behaviour, finance/accounting, human resources management, management training, marketing, operations/production management, economics, management information systems?

Results

Between January 1987 and August 1994, a total of 156 scientific papers were identified as being concerned at least partly with a cognitive process, product, predisposition or prop within the framework of research on small business or entrepreneurship. Some people may find this interest in cognition to be rather more significant than they would have believed, and might wonder why cognition has not been considered more clearly as a key factor in the development of small business and entrepreneurship theory. The remainder of this section will describe the analysis of these 156 papers under the six headings described above.

Reference

Table 1 shows the number of papers published in each journal between January 1987 and August 1994. Most of the papers (119 out of 156, or 76%) appeared in the only three journals in the table specialized in small business and entrepreneurship, i.e. (in order) JSBM, JBV and ETP. However, it is also worth noting the large overall number of journals - 28 - in which the papers were

published. Moreover, the number of papers remained remarkably stable over the years, except for 1987 and 1994 (in the latter case, if the trend was maintained in the last four months of the year, there would have been a significant decrease). It has to be noted that the 21 "conceptual" papers appeared in six journals: ETP (10 [7 since 1992], or nearly half the 23 papers published in ETP), JSBM (4, all before 1990), JEBO (3), AMR (2), JBV (1) and DSS (1). In all, more than half of all the conceptual papers were published after 1992, and none appeared in a journal aimed at both academics and practitioners. A third of the conceptual papers were published in journals outside the field of small business or entrepreneurship.

TABLE 1

Number of Papers Published by Journal, 1987 - 1994

JOURNALS	1987	1988	1989	1990	1991	1992	1993	1994 jan-aug.	Total
Academy of Management Executive (AME)*		1							1
Academy of Management Review (AMR)		2							2
Accounting and Business Research (ABR)				1	1				2
Administrative Science Quarterly (ASQ)				1					1
Akron Business and Economic Review (ABER)				1	1				2
Decision Support Systems (DSS)					1				1
Entrepreneurship Theory and Practice (ETP) (previously American Journal of Small Business)	1	4	2	2	3	5	3	3	23
Industrial Marketing Management (IMM)*					1				1
Information Age (IA)*				1					1
Journal of Applied Business Research (JABR)					1	1			2
Journal of Banking and Finance (JBF)*					1				1
Journal of Business Communication (JBC)			1						1
Journal of Business Ethics				1		1			2
Journal of Business Finance and Accounting (JBFA)							1		1
Journal of Business Venturing (JBV)		4	5	8	2	6	7	2	34

* Journals aimed at both academics and practitioners.

TABLE 1 (suite)**Number of Papers Published by Journal, 1987 - 1994**

JOURNALS	1987	1988	1989	1990	1991	1992	1993	1994 jan-aug.	Total
Journal of Economic Behavior and Organization (JEBO)	1					1	1	1	4
Journal of Economic Psychology (JEP)					1				1
Journal of Management Studies (JMS)				1		1			2
Journal of Occupational Psychology (JOP)			1						1
Journal of Small Business Management (JSBM)	8	7	9	8	9	8	10	3	62
Journal of the Operational Research Society (JORS)*		1							1
Journal of Travel Research (JTR)*					1				1
Management International Review (MIR)*			1						1
Managerial Finance (MF)							1		1
MIS Quarterly (MISQ)*							1		1
Organizational Dynamics (OD)		2							2
Strategic Management Journal			1						2
Technovation (T)*					2				2
Total :	10	21	20	24	24	23	24	10	156

Cognitive Object

As Table 2 shows, cognitive products clearly attract the most interest among researchers. The number of papers published varied very little within the categories over the years, although a little more attention seems to have been paid to cognitive predispositions since 1991.

TABLE 2
Number of Papers Published by Category of Cognitive Object
1987 - 1994

	1987	1988	1989	1990	1991	1992	1993	1994	Total
Processes	1	3		2	1	4			11
Products	6	17	14	21	17	15	20	9	119
Predispositions	1	1	2	2	4	3	3	1	17
Props	2		4	1	2	1	1		11
	10	21	20	26*	24	23	24	10	

* This number differs from the number shown in Table 1, because two of the 1990 papers each addressed two cognitive objects.

The specific cognitive objects studied within each category tended to vary, although some appeared more frequently than others. For example, research on cognitive processes tended to describe the cognitive process that occurred during decision-making or problem-solving. Research on cognitive predispositions was concerned mainly with identifying the basic values or attitudes of entrepreneurs or students, or decision-making or problem-solving "style". Research on cognitive props was often prescriptive in nature, showing how a model or technique could help to "think", generally within a decision-making framework, and in different fields (STRAT, MRK, MIS, etc.). However, cognitive products attracted by far the most attention, and were the focus of attention in three studies out of four. The most "researched" cognitive products included the reasons or motives given for venture start-up, the criteria or factors considered to be important in decision-making and, more particularly, perceptions (the importance of information sources, the environment, the company's problems, barriers to exporting, etc.).

Sample

The size of the sample varied from one paper to the next, but it rarely fell below 50 individuals, and frequently exceeded 100. Research focused almost exclusively on the individual aspect. Cognition at the collective, organizational and even industrial levels, which cannot be described as the result of a simple accumulation of individual thought (Schneider & Angelmar, 1993), seemed to be of little interest to researchers in the fields of small business and entrepreneurship. The variety of subjects within the samples was quite remarkable. Although

owner-managers were the most sought-after, many other people were willing to serve the cause of knowledge, including managers, employees, investors, lenders, clients, teachers, students and many others, by agreeing to become subjects in cognition research in the fields of small business and entrepreneurship. The subjects were drawn from a wide variety of companies. Most business sectors were represented and the research had been performed in at least fifteen different countries.

Data collection technique(s)

The tool used most frequently was the mail questionnaire. If we accept the idea that cognition is fundamentally idiosyncratic in nature (see, among others, Cossette & Audet, 1992), the use of this structuring technique, combined with the fact that the data is gathered in an impersonal context, is somewhat worrying, especially if we consider that the questions asked are usually "directive". Evaluation (Likert scale) or multiple choice questions provide a reference framework that belongs to the researcher and not to the subject. To give more weight to the reference systems of the subject, researchers would have to make more use of techniques such as in-depth interviews.

Data analysis technique(s)

In view of the data collection techniques and the samples, it should come as no surprise that the researchers made massive use of statistics to analyze their data. In fact, content analysis was used on only a few occasions. Most of the research contained "descriptive" statistics, using graphical methods (e.g. histograms) or numerical calculation methods to provide position or dispersion indicators (e.g. mean). Some multivariate techniques also "describe". The use of these more complex techniques, which include discriminant analysis, factorial analysis and cluster analysis, is increasing steadily in cognition-related research in small business. Between 1992 and August 1994, they were used 23 times, compared with 21 in the preceding five years. Factorial analysis is the most popular of these techniques; it was used on 27 occasions, whereas discriminant analysis and cluster analysis were used only 9 and 8 times respectively.

The use of "explanatory" statistics - in other words, those concerned with statistical inference - increased in the period up to 1991 (25 in that year), and has been decreasing ever since. However, the differences are not significant enough to suggest a change of paradigm. Besides, the use of multivariate techniques aimed at "explaining" (regression analysis and variance analysis) has increased since 1991. The same trend was observed in the use of descriptive multivariate techniques. Data analysis techniques are therefore becoming more sophisticated, as Wortman (1986) hoped, but contrary to Bygrave's (1989) suggestion. More recently, Bygrave & Hofer (1991) proposed that regression analysis should no longer be used: "[...] regression analysis is reductionist, while entrepreneurship is holistic [... it] assumes stable models built with relatively few variables, rather than unstable models with many variables" (p.20).

Discipline

The study of cognition in small business is dominated by the "organizational behaviour" sub-field, but is by no means its exclusive province. Interestingly, 26 papers related to the field of finance and accounting. This was the second largest group after organizational behaviour; clearly, figures are not independent of the representations we associate with them. At least ten papers related to each of the following fields: STRAT, MRK and MIS.

Discussion And Conclusion

The aim of this study was to highlight the characteristics of research on cognitive objects in the scientific literature on small business and entrepreneurship. Results have shown that such research is perhaps best characterized by its diversity. This diversity could be seen in the journals in which the papers were published, the cognitive objects studied, the samples used, the data collection and analysis techniques employed and the disciplines concerned. Sometimes the relationships between the elements, especially the research objects, were so tenuous that they created an impression of fragmentation. Churchill & Lewis (1986) made a similar observation ten years ago with respect to entrepreneurship research: "[...] research directions are fragmented, creative and diverse" (p.334). Naturally, the results of this study suggest some avenues for future research. First, however, some comments are needed on the "limits" of the study.

The documentary research was performed using a single database, the standard version of ABI/INFORM. Although it is recognized as an excellent directory of scientific papers in administrative science, in its present form it excludes some 100 journals that are included in its more costly, "global" version, among which the *International Small Business Journal*. Also, our study did not consider research published in books, book chapters or in the reports or proceedings of scientific conferences. Finally, the cognitive terms used in our search statements were established "intuitively", given the absence of a nomenclature of cognitive terms. Although the terms selected seem to constitute a fairly exhaustive list of those used in administrative science, other researchers may not agree with all of them. This highlights the need to develop models or typologies that would enrich research on cognition in organizations of all sizes.

A possible avenue for future research would be to compare the interest in cognitive objects shown by researchers with that shown by practitioners. The concerns of researchers do not necessarily accurately reflect the concerns of practitioners, especially in the small business field (on this subject, see Ireland and Van Auken, 1987 and Brockhaus, 1987). A number of questions could be answered by comparing papers from academic journals with those from publications aimed specifically at practitioners. For example: Is one type more numerous than the other? Do both types address the same cognitive objects (processes, products, predispositions, props)? Does the interest in the various cognitive objects expressed in academic journals precede or emerge out of the interest expressed in professional publications?

But the most important conclusion for the development of small business and entrepreneurship theory may well be that almost all the work on cognitive objects analysed during the research has been carried out using what we could call an "objectivist" viewpoint. Researchers seem to presume that all reality - including cognitive reality - can be studied neutrally, to identify regularities or laws that enable predictions to be made - the ultimate objective of science in the wake of positivism. From a methodological point of view, the nomothetic approach is favoured: ideally, it is believed that the sample should be large and statistically representative of a given, clearly specified population; results should be classified in predetermined categories and analyzed using quantitative techniques. This is the approach suggested in 1987 by Sexton, who emphasized the importance of examining the causal relationships between events, ensuring that results can be reproduced, sampling properly and then generalizing result, using valid measurement instruments and performing sophisticated mathematical analyses. Other authors have proposed similar approaches. For example, Low & MacMillan (1988) said that *causality* should be the main focus of researchers in the field of entrepreneurship, and deplored the approach used so far: "The lack of experimental research is a further indication of slow progress in developing entrepreneurship theory" (p.154). Yet, in 1987, Vesper noted that progress in entrepreneurship research was difficult to assess and criteria such as the predictive value associated with the generation and testing of hypotheses was perhaps inappropriate in social research, including entrepreneurship. He observed that progress often demanded a rejection of dominant paradigms. However, if recent research is any indication, his remarks have not had the hoped-for impact. Similarly, Bygrave (1989) deplored the fact that most entrepreneurship research uses methods and theories borrowed from other sciences, notably the "hard" sciences, a situation he explained by the lack of progress in entrepreneurship theory (and also, in part, by the fact that many of his fellow researchers were former engineers or mathematicians). The conclusions of Bygrave & Hofer (1991) and Stevenson & Harmeling (1990) support this view.

Generally speaking, the traditional viewpoint associated with the orthodox knowledge production model has often been criticized in recent years, in particular because it presupposes object stability and subject exteriority, two untenable characteristics in social research (Audet *et al.*, 1986). Within this viewpoint, where, as the latter authors observed, knowledge is considered to be definitive and cumulative, emphasis is placed on the search for a hidden truth rather than the pursuit of meaning. Given the limits of this traditional and objectivist viewpoint, it is difficult to understand why it is overrepresented in cognition - related research in the scientific literature on small business and entrepreneurship. Any approach has its limitations. But the "subjectivist" viewpoint is an alternative that should not be discarded (see, among others, Cossette, 1994) in the development of small business and entrepreneurship theory. In such a perspective, the initial precept is that the cognitive structure of subjects guides them in apprehending reality, that they are active in their relationships with the environment, and that they do not simply "passively capture" or "perceive" an outside world that is imposed on them. The focus here is on how subjects subjectively construct reality - in other words, how they divide it up - and on the links they establish between the different elements produced by that division. The aim is therefore to understand realities that are basically unique and in constant evolution, calling on the representations or schemes of the subjects. The researcher does not look for generalizability of

facts based on the identification of so-called laws of nature, but for generalizability of insight that helps to achieve a better understanding of given situations in other contexts or organizations (Morgan, 1985). Methodologically, this type of viewpoint is best addressed using an idiographic approach. The research strategy selected should allow the subjects to express, or even construct, their own conceptions, which usually requires the use of techniques such as in-depth interviews, participative observation and content analysis. Following a subjectivist stance, we cannot understand an organization, whatever its size, without knowing what the people concerned think and how they think. The production of more knowledge from a subjectivist perspective might be the most crucial issue facing the development of small business and entrepreneurship theory.

References

- Andler, D. (Ed.) 1992. Introduction aux sciences cognitives. Paris : Gallimard.
- Audet, M., Landry, M. & Déry, R. 1986. Science et résolution de problème: liens, difficultés et voies de dépassement dans le champ des sciences de l'administration. Philosophy of the Social Sciences/Philosophie des sciences sociales, 16: 409-440.
- Brockhaus, R. H., Sr. 1987. Entrepreneurial research : are we playing the correct game ? American Journal of Small Business, 11(3): 43-49.
- Bull, I. & Willard, G.E. 1993. Towards a theory of entrepreneurship. Journal of Business Venturing, 8(3): 183-195.
- Bygrave, W. D. 1989. The entrepreneurship paradigm (I) : a philosophical look at its research methodologies. Entrepreneurship Theory and Practice, 14(1): 7-26.
- Bygrave, W.D. 1993. Theory building in the entrepreneurship paradigm. Journal of Business Venturing, 8(3): 255-280.
- Bygrave, W. D. & Hofer, C.W. 1991. Theorizing about entrepreneurship. Entrepreneurship Theory and Practice, 16(2): 13-22.
- Carrier, C. 1994. Intrapreneurship in large firms and SMEs : a comparative study. International Small Business Journal, 12(3): 54-61.
- Churchill, N.C. & Lewis, V.L. 1986. Entrepreneurship research : directions and methods. In D. L. Sexton & R. W. Smilor (Eds.), The art and science of entrepreneurship: 333-365. Cambridge, MA : Ballinger.
- Cossette, P. 1995. La cognition comme objet d'étude dans la littérature scientifique sur la PME et l'entrepreneuriat. In Proceedings of the 2nd Congrès international francophone de la PME (CIFPME), pp. 487-524. Paris.
- Cossette, P. 1994. Les cartes cognitives au service de l'étude des organisations. In P. Cossette (Ed.), Cartes cognitives et organisations: 3-12. Collection « Sciences de l'administration ». Québec/Paris : Les Presses de l'Université Laval/Éditions ESKA.
- Cossette, P. & Audet, M. 1992. Mapping of an idiosyncratic schema. Journal of Management Studies, 29(3): 325-347.
- d'Amboise, G. & Muldowney, M. 1988. Management theory for small business: attempts and requirements. Academy of Management Review, 13(2): 226-240
- Dandridge, T. C. 1979. Children are not "little grown-ups" : small business needs its own organizational theory. Journal of Small Business Management, 17(2): 53-57.

- Herron, L., Sapienza, H.J. & Smith-Cook, D. 1991. Entrepreneurship theory from an interdisciplinary perspective: volume I. Entrepreneurship Theory and Practice, 16(2): 7-12.
- Herron, L., Sapienza, H.J. & Smith-Cook, D. 1992. Entrepreneurship theory from an interdisciplinary perspective: volume II. Entrepreneurship Theory and Practice, 16(3):5-11.
- Hofer, C. W. & Bygrave, W.D. 1992. Researching entrepreneurship. Entrepreneurship Theory and Practice, 16(3): 91-100.
- Huff, A. S. (Ed.) 1990. Mapping strategic thought. Chichester : John Wiley and Sons.
- Ireland, R. D. & Van Auken, P.M. 1987. Entrepreneurship and small business research : an historical typology and directions for future research. American Journal of Small Business, 11(4): 9-20.
- Low, M. B. & MacMillan, I.C. 1988. Entrepreneurship : past research and future challenges. Journal of Management, 14(2): 139-161.
- MacMillan, I. C. & Katz, J.A. 1992. Idiosyncratic milieus of entrepreneurial research : the need for comprehensive theories. Journal of Business Venturing, 7(1): 1-8.
- Meindl, J.R., Stubbart, C. & Porac, J.F. 1994. Cognition within and between organizations : five key questions. Organization Science, 5(3): 289-293.
- Morgan, G. 1985. Qualitative and action based research, In Proceedings of the colloquium « Perspective de recherche pour le praticien »: 81-109. Rouyn: Université du Québec en Abitibi-Témiscamingue.
- Schneider, S.C. & Angelmar, R. 1993. Cognition in organizational analysis : who's minding the store? Organization Studies, 14(3): 347-374.
- Sexton, D. L. 1987. Advancing small business research : utilizing research from other areas. American Journal of Small Business, 11(3): 25-30.
- Sims, H.P., Jr. & Gioia, D.A. (Eds.) 1986. The thinking organization : dynamics of organizational social cognition. San Francisco : Jossey-Bass.
- Stevenson, H. & Harmeling, S. 1990. Entrepreneurial management's need for a more "chaotic" theory. Journal of Business Venturing, 5(1): 1-14.
- Vesper, K. H. 1987. Entrepreneurial academics – how can we tell when the field is getting somewhere. Journal of Small Business Management, 25(2): 1-7.
- Welsh, J.A. & White, J.F. 1981. A small business is not a little big business. Harvard Business Review, 59(4): 18-32.
- Wortman, M. S., Jr. 1986. A unified framework, research typologies, and research prospectuses for the interface between entrepreneurship and small business. In D.L. Sexton & R.W. Smilor (Eds.), The art and science of entrepreneurship: 273-331. Cambridge, MA : Ballinger.
- Wortman, M. S., Jr. 1987. Entrepreneurship: an integrating typology and evaluation of the empirical research in the field. Journal of Management, 13(2): 259-279.