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Raquel Sastre

Universidad de Buenos Aires, Faculty of Economics
raquelsastre@gmail.com

AN ANALYTICAL METHODOLOGY FOR MANAGEMENT RESEARCH: INSIGHTS FROM SEMIOTICS

Abstract: In the field of business management, managers have a tendency to think in a linear fashion that is restricted to cause and effect relationships. This mind-set limits understanding of complex phenomena, including those that managers and business people face in their activities. This article proposes an Analytical Methodology for Management Research (AMMR) using a triadic logic gleaned from semiotics. The AMMR tool used herein diagnoses the meaning people assign to complex concepts such as “business success” and is based on three logical categories within semiotics where success is understood as business sustainability over time. This article applies the AMMR to an empirical sample comprised of managers and business people. The results highlight the similarities and differences in attributing meaning to the concept of sustainability. The study also analyses the knowledge, behaviours and values that respondents considered most important for the success of an enterprise, i.e. its sustainability.

This article concludes that the applied methodology creatively enriches the analysis of the phenomenon studied opening up many possible responses. The AMMR can be applied to the assessment of managers and business people from different organisations or people working in the same organisation at different hierarchical levels. In addition, the analysis can be performed individually or collectively. The classification of the responses obtained by applying the AMMR is open for future research, following 10 possible configurations, with each of them emerging as a logical combination that allows for the organisation of the emphasis given to concepts, behaviours and values.

Keywords: research method, business assessment, directing sustainable businesses, semiotics, pragmatism.

JEL codes: M10.

Introduction

One of managers' main tasks in organisations is to make decisions. In today's globalised and competitive context, these decisions are expected to be efficient, as well as creative [Shalley and Gilson 2004]. Since creativity emerges from the interaction between individuals, [Csikszentmihalyi 1996], creativity in decision-making is connected with the ability to articulate the largest number of possible answers (hypotheses) to problems that demand a decision.

Methods to generate new ideas that contribute to creative solutions include research and brainstorming. However research involves stopping daily operations so that the top decision-making levels can brainstorm, which does not seem to be a common practice in small businesses and organisations.

This article proposes a method to analyse phenomena in the field of organisations supported by pragmatic philosophy and semiotics. Since pragmatism is a philosophy of action it can provide management with an epistemological basis for developing a method to help think about everyday problems more creatively.

This article is organized according as follows: The first section highlights Peirce's main contributions as the founder of pragmatism, concluding that Peirce's thought lends itself to the development of an Analytical Methodology for Management Research (AMMR) based on semiotics to aid in the analysis of complex phenomena.

In the second section the AMMR methodology is then explored through its application to a sample of 78 business people and managers who were surveyed about the concept of organisational sustainability. Following the logic of triadic semiotics a three-part questionnaire was developed. The first part inquires into the conditions and knowledge that enable organisational stability in terms of theories, specific reports, laws and culture. The second part focuses on behaviour that supports sustainability, programmes and decisions, as well as their pragmatic effect. The third part focuses on the respondents' values with regard to sustainability, in terms of strategies and goals that guide their actions. Each case includes propositions scored from 1–10, from lesser to greater importance. Participants' responses were then collected into a table with 27 logical cells that include the different emphases that respondents gave to the propositions concerning theory, practice and their assessment of sustainability.

In the third section the results are presented. They show that the average profile of the surveyed sample has a tendency towards taking action. They also considered transparent reports, market surveys, a good working environment, legislation and a stable macroeconomic context – valuable factors that *enable* organisational stability.

Finally, in the conclusions, the results are analysed and they tend towards at least three basic findings. First, this methodology can be applied to organisations of any type and size since the analysis can be performed transversely by comparing the results obtained in different organisations or vertically by comparing the results obtained at different levels within the same organisation. Secondly, the methodology proved valuable for enriching the analysis of complex phenomena and concepts and consequently is a useful tool for organisational diagnosis. Third, by regrouping the 27 cells it is possible to creatively build numerous hypotheses using the logic of abduction. Future research still needs to address the possibility of testing the hypotheses obtained through the AMMR, using quantitative methods like structural equation modelling (SEM).

1. The possibilities within peirce's thought

Many disciplines are interested in studying the prolific work of Charles Sanders Peirce (1839–1914), who was a scientist, logician and philosopher. He is further considered the founder of the school of thought known as pragmatism and the father of semiotics. For Peirce action is a principle that accesses reality making his interdisciplinary ideas widely applicable in the field of human action.

The management discipline, in particular, aims to study organisations and develop tools to intervene in them with the intention of producing change, in other words, techniques for action. Sociology and management are closely related because the former analyses organisations as an object of study, considering that it is through organisations that social classes form and reproduce and that through them culture is configured and modelled [Perrow 1986]. Economics has influenced management, most notably as regards the economic theories of organisations opposed to the sociological or political vision of organisations. Studies and research in the area of social psychology and neuroscience have also contributed to management, specifically in studies on the rationality – or irrationality represented by bias – present in managers' decision-making processes [Myers 2006].

However given that he sustained a philosophy of experience it is worth questioning why Peirce has not been studied more in the field of management, especially in areas like the action of leaders and managers, who, as M. Bunge [2000] argues, seek to control the administrative aspects of the organisations in which they operate. Whilst connecting Ch.S. Peirce's philosophy and the actions of managers and business people is not common its potential to contribute to the field is clear once one scratches the surface [Arjeliès, Lorino, and Simpson 2013].

These considerations lead us to a question: What can the twenty-first century management discipline take from a nineteenth-century philosopher? As mentioned earlier Peirce's work is vast and profound making it necessary to address only a part of the epistemological and methodological aspects of his thought.

1.1. Epistemological Aspects: Pragmatism as a philosophy applied to practice with creative reason and abduction

Pragmatism is a philosophical perspective that aims to identify concepts of reality through their consequences [Lorino, Clot, and Tricard 2010]. It connects thought on a continuum with action giving experience a fundamental role in the construction of knowledge. In short, it is an attitude that seeks truth, anchoring reason in the experience of practice. Pragmatism was born of Ch.S. Peirce's work, found especially in his *Collected Papers* [Hartshorne, Weiss, and Burks 1931].

In epistemological terms Peirce focused on knowledge and the justification of beliefs with which research begins, whether philosophical, scientific or otherwise. When a surprising fact presents itself research can be undertaken holistically using three forms of reasoning: abduction, induction and deduction.

Abduction, as Ch.S. Peirce called it [1931], proposes a hypothetical explanation of facts. Induction verifies the hypothesis that abduction provides, whilst deduction predicts. Whilst abduction is the weakest form of reasoning it involves the highest level of creative thinking. According to Lorino, Clot, and Tricard [2010]:

Abduction combines logical reasoning (to be plausible, the narrative hypothesis must fulfil some logical conditions), aesthetical judgment (the hypothesis must be "elegant"), analogy, metaphor or pre-reflexive moves (Peirce speaks of "flashes"). It mixes intuition and reasoning [p. 11].

Thus creative methods that open up possibilities for the future-oriented imagination at the service of research are legitimised. Pragmatism, by 'test-

ing ideas through action', is a philosophy that conceives of human beings as open to learning through experience. According to another pragmatist, Dewey [1997],

We always live at the time we live and not at some other time, and only by extracting at each present time the full meaning of each present experience are we prepared for doing the same thing in the future [p. 33].

If we add what we do with things to what we do to people we come into the human, ethical and evaluative dimension of action.

Learning also occurs through error caused by the fallibility of abduction, that is, the faulty hypotheses that can be inferred. Pragmatist thought admits mistakes and recognises it as part of the learning and growth processes in the search for truth. For this reason good habits are decisive.

Since the beginning of the twenty-first century pragmatist epistemology has been the basis for methodologies that contribute to the study of learning processes as well as with platforms for qualitative studies on cultural behaviour. In a paper that studies the Maori tribe's worldview, Ruwhiu and Cone [2010] argue that their research goes beyond application in the indigenous context,

...as it grounded in a methodological approach that draws from a pragmatic epistemology offering insightful, more richly contextualized research avenues in organisation and management [p. 1].

The next section explores the methodological possibilities of Peirce's triadic thought which has not been extensively explored in organisational studies but has been widely developed in psychology [Lacan 1966] and semiotics [Eco 1976], among other disciplines.

1.2. Methodological Aspects: Semiotics as logic for establishing a methodology

Peirce argued that is not possible, through reason, to attain absolute certainty: 'No cognition is absolutely accurate' [Peirce 1931]. So how does one know a subject? Peirce's answer is as follows, 'The only thought, then, which can possibly be cognized, is thought in signs', and he further states, 'The sign [...] is something which stands to somebody for something in some respect or capacity' [CP 2.228].

Thus one sign leads to another in an unlimited process that Ch.S. Peirce called semiosis and that always involves three elements: the signifying elements of the sign, the object and the interpreter.

In turn signs involve three aspects: (1) it is an icon that resembles an actual way of being; it represents the universe of possibilities, (2) it is an index

to the extent that it indicates a particular object; it represents the universe of that which exists, and (3) it is a symbol or generality that is part of a system and that is taken on as convention. For a sign to acquire meaning, it has to have a meaningful context, a previous system that gives meaning to any subsequent interpretation [Lorino, Clot, and Tricard 2010].

For Ch.S. Peirce, the theory of signs (semiotics) is comparable to logic, just as classical philosophy, including Aristotle, the Epicureans and sceptics, held. Semiotics aims to study semiosis defined as inference using signs.

The originality of Ch.S. Peirce's thought is found in the triadic conception of the sign as a ratio of three terms that refer to ontological categories. A sign or Representamen is a First that is in genuine triadic relation to a Second, called its Object, so as to be able to determine a Third, called its Interpreter, to assume with its object the same triadic relationship in which it has the same object [Eco 1976].

1.3. What the Management Field Needs: A method for thinking about complex phenomena

In the previous section we established that the management field aims to study organisations and to develop techniques that contribute to their improvement. Any intervention requires a prior diagnosis built upon research to which Ch.S. Peirce's thought offers a valuable contribution. As an example we could imagine research that aims to investigate the motivation that business students demonstrate for starting their own business, that is, towards entrepreneurship. The *Firstness* corresponds to the idea of opening a business, where entrepreneurship is pure possibility. In this case, the *Secondness* refers to the process of entrepreneurial potential interaction with the environment and the actions and reactions aimed at taking steps to establish and maintain a business.

What is the *Thirdness* in this example? Peirce distinguishes action from behaviour such that action is undertaken because of motives and behaviour because of ideals. Thus, in this example, ends that motivate the entrepreneur to start a business guide his action. The ideal could be leaving a business to his family or becoming an exemplary businessman, amongst others. The ethical question thus infiltrates the question's *Thirdness*.

Business ethics and a pragmatic attitude is a controversial combination [Goodpaster 2006]. On the one hand, a stream of thinkers argue that, 'that which works is, by that very fact, good and true' [Cavanagh 1976]. On the other hand, Ch.S. Peirce himself criticised the economic culture of

the United States, which, in turn, most influenced business theory, practice and teaching. In 1893, in his essay 'Evolutionary Love', Ch.S. Peirce referred to the 'Gospel of Greed' criticising the American 'pragmatic' devotion to greed and, to differentiate his ideas, Ch.S. Peirce called his discipline Pragmaticism [Anderson 1999, p. 56].

Concerns about ethics and governance in organisations are not new in business schools or in the business world [Clarke 2004]. In the case of business organisations, approaches have changed throughout history from a vision of the business firm as an instrument at the service of shareholders' interests towards a paradigm that considers organisations as more than the sum of their parts or, as T.R. Schatzki put it, 'nexuses of practices and material arrangements' [Schatzki 2005, p. 471 quoted by Lorino, Clot, and Tricard 2010, p. 8].

It is generally accepted that, in order to make decisions, managers should combine various skills, including ones of an economic, sociological and ethical nature, amongst others. Therefore we can say that management which is practical knowledge is based on a variety of theoretical knowledge [Jastroch and Marlowe 2010].

D.R. Andrews [1989] was one of the first authors to explicitly incorporate, within the logic of the strategic model, the moral dimension of management amongst the components of decision-making and amongst the criteria for the evaluation of any resultant decisions. Other authors conclude that business people act in the present within an ethical framework since their actions in the present safeguard their decisions and future actions [Melé Carné 2011]. But is this so in the practice of management action? Is ethics present in the *Thirdness* of management action?

Business schools have recently become concerned with connecting ethics and business, specifically in Executive MBA programmes. They seem to want to persuade participants of the need to think differently about leadership, organisations and themselves [Cunliffe 2009]. This challenge is difficult to face if one ignores ethical reflection on leaders' actions.

According to Ch.S. Peirce human activity is a dynamic process in which the action of agent (A) towards another agent (B) (considered generically as its environment) produces reactions that generate new actions, forming a spiral of interactions. In the field of organisations making decisions is one of the most frequent tasks that the management role faces. Since the decision-making process is a type of human action a learning process is implicit in it meaning that, whenever a decision is made and put into practice, the results (whether satisfactory or not) obtained from said action are con-

stituted as an experience that the decision maker incorporates as a learning process that transforms him. In the field of organisations, authors such as C. Argyris and Schön [1978], M. Polanyi [1967] and Schön [1983], amongst others, have studied the learning process, however, the semiotic perspective could be used to understand more fully the knowledge transfer processes involved in collective learning, [Jastroch and Marlowe 2010] or simply to analyse the 'Role of Management Systems in Organizational Learning' [Lorino 2001].

When an organisation's manager or leader must decide *a priori* his evaluative capacity to manage his motives and impulses towards a certain action and design a scenario of possible outcomes for each alternative action is put to use. The same happens *posteriori* when evaluating the results of a chosen action, i.e., the consequences of a decision. It is possible to build a practice-driven institutional change model starting from the daily practices of an organisation's members [Smets, Morris, and Greengood 2012]. This process, which can continue indefinitely, supposes intention or purpose that motivates action and this intention arms human action with its rational and deliberative nature.

The above is important for connecting Ch.S. Peirce's thought with management action, i.e. the notion of self-controlled behaviour aimed towards a certain end or purpose. Thus probing into the ends that people are willing to deliberately adopt enriches management research, at least from the perspective of what people express in narratives [Tsoukas and Chia 2002].

In short business people and managers' narratives about the variables they identify as necessary and sufficient factors for achieving business success demonstrate each respondent's speculations and inferences, conscious or not. That is, they produce patterns of meaning [Weick 2009].

The abductive method for generating hypotheses and Ch.S. Peirce's open triadic thought provide new possibilities for research and study of management practice in organisations. In general research on management action presents questions with structured or semi-structured answers from which researchers deduce conclusions about their meaning. This is true of research on certain management styles, leadership and work motivation, amongst other topics within the discipline.

The linear interpretation given to these answers can be enriched using semiotics as an analytical method. Thus complex issues such as management, leadership and motivation can be conceived as signs whose categories (*Firstness*, *Secondness* and *Thirdness*) allow for a better understanding of a given phenomenon and provide tools for digging deeper into each one.

The following section presents an Analytical Methodology for Management Research (AMMR) using the triadic logic gleaned from semiotics.

2. The analytical methodology for management research (AMMR)

To develop an empirical sketch of the AMMR the present study uses the concept of sustainability as an example sign; it is defined by the Oxford Dictionary as, 'Able to be maintained at a certain rate or level'. This sign is used because a person who has the responsibility of leading an organisation necessarily directs his/her action toward ensuring that it is maintained and lasts over time. It makes no sense to drive an organisation towards its extinction, which would be considered a failure. Thus in contrast, a manager, director or administrator achieves success by placing his/her creative abilities at the service of actions that sustain the organisation and, preferably, help it to grow.

Peirce, along with other classical pragmatists like J. Dewey, W. James, C.I. Lewis and Ch.S. Mead, understands growth as a moral order, not as mere accumulation [Buchholz and Rosenthal 1998]. From this perspective, sustainability is *Thirdness* for the management sign; it is the law and the social value that a community gives to organisations. In the case of private organisations it is equivalent to the social function of the business firm. The definition of truth that Peirce suggests also approaches the concept of sustainability by emphasising the role of the community or the "outside world" in questioning the development of research in search of the truth [Norton 1999]. As a practical application this study designed a questionnaire and analysed its results following the AMMR based on Peirce's approach.

2.1. Designing Field Tools

The following describes the practical application of a questionnaire design in order to understand the different aspects of a given sign, taking sustainability as an example. Following Peircean logical categories the tool must contain three parts which allude to how the sign in question is manifested. The three parts correspond to the following:

Theoretical Practice

This section includes the formal aspects (the form of the form), that is, the possible conceptualisations of sustainability together in various theories. It

gathers all necessary and available knowledge for conceiving the sustainability concept. This knowledge can be found in various disciplines such as management, anthropology, psychology and political science, amongst others.

The formal aspects materialise (existence of the form) in designs, programmes, discourse and concrete narratives about sustainability. They can be expressed in business plans, management projects or sustainable organisation models.

These theoretical conceptualisations expressed in designs, projects and models have a value in the context in which they are applied (value of the form). It corresponds to the value society places on sustainability, the aesthetic question and innovative strategies for achieving it.

Practical Actions

This section refers to the realisation of sustainability which can be seen, for example, in accounting or financial reports, market assessments and certifications of environmental protection standards (form of existence).

Economic practice (existence of existence) refers to specific actions taken to render an organisation sustainable. Here we find investment decisions, stock purchases and sales, environmental monitoring.

Every action receives an assessment (value of existence) corresponding to ethical aspects or the evaluation of action that is expressed through narratives of satisfaction or dissatisfaction.

Political and Strategic Practice

This section applies to the political and strategic practice of sustainability. In terms of the symbolic realm (form of value) it relates to contextual historical possibilities, that is, to the cultural aspects that enable the practice of sustainability-related action in organisations.

Political practice (existence of the form) results in the pragmatic effect of concrete action.

Every practice contains a logic (value of value) which is expressed through owners or managers' intentions that guide their actions and that differentiate between one organisation and another.

Table 1 below demonstrates the three parts of the theoretical basis for analysing the sustainability sign. Each cell contains possible examples of content but it is open to the possibility of other conceptualisations.

The questionnaire's structure consists of three parts each with three sections or nine sets of questions. The questions identify Peircean categories;

for example, the first section of the first part seeks to identify the kind of knowledge that the respondent considers most important. The responses include knowledge corresponding to *Firstness*, such as science and technology, to *Secondness*, such as knowledge related to economics, accounting and marketing, and to *Thirdness*, such as philosophy and politics. Thus the nine cells below become 27 cells that compose the sustainability sign.

Table 1. Matrix for analysis of the sustainability sign

	KNOWLEDGE (PAST)	BEHAVIOUR (PRESENT)	SOCIAL VALUE (FUTURE)
THEORETICAL PRACTICE	theories	projects	strategy
PRACTICAL ACTION	reports	decisions	evaluation
POLITICAL PRACTICE	laws, culture	pragmatic effect	ends that guide action

Source: Own elaboration based on C. Guerri et al. [2014].

3. Research results

The questionnaire designed in accordance with the AMMR was tested on a sample of 78 business people and managers, 22 women and 56 men. Figure 1 shows a summary of the respondent profile:

Each respondent was asked to rate a proposition on a scale of 1 to 10, with 10 being the most important or valuable option and 1 being the least important or least valuable. These ratings were then added up, averaged and ordered in the same way as the questionnaire, that is, in nine parts or boxes. Three of them express possibilities, i.e. the theoretical part, the necessary and available knowledge for conceiving the concept of sustainability. The next three express action, the second part referring to practical actions that embody sustainability. The final three express values, the third part that corresponds to the political and strategic practice of sustainability. Table 2 summarises the scores obtained from the survey showing the sample's dispositions, actions and values.

As shown in Table 2, in the first part of the questionnaire, which inquires into the knowledge and conditions that enable sustainability, cell 7 predominated. In the second part, which focuses on specific behaviours and their pragmatic effect, cell 5 predominated. Finally, in the third part of the questionnaire, which asks about the values regarding sustainability, cell 6 predominated. In his writings Peirce proposes organising the

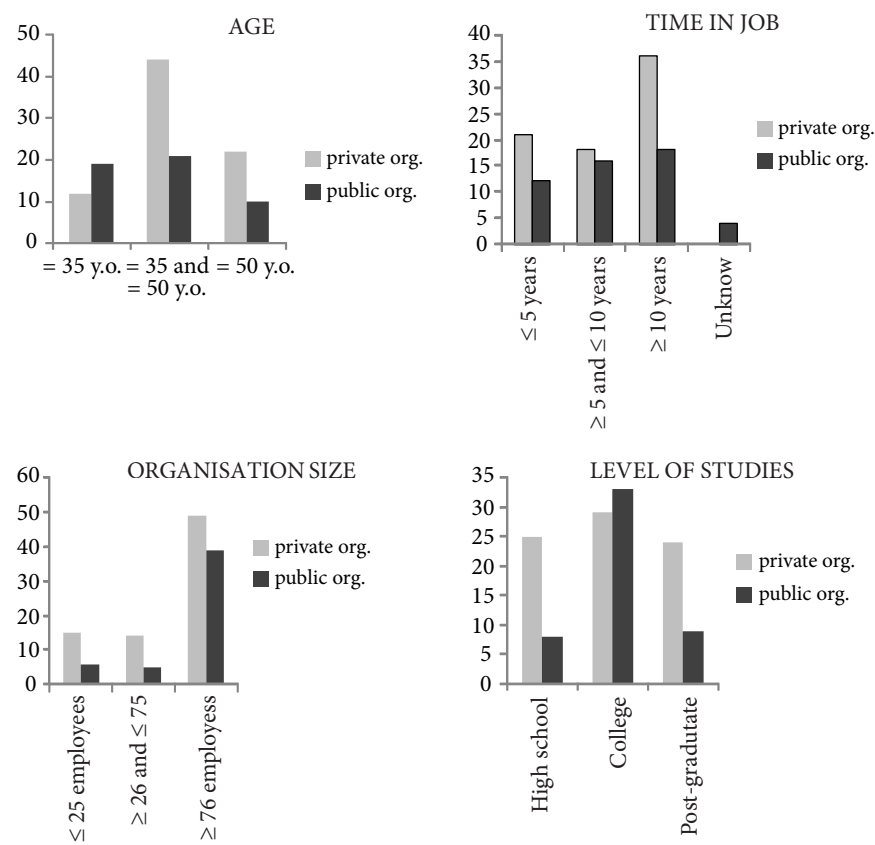


Figure 1. Sample profile

Source: Own analysis based on the research results ($n = 78$)

cells following a classification called “the ten types of signs” (CP 2.254 a 2.264). This organisation is based on the different emphases regarding concepts, objects and behaviours (in the case in question, the results point to a 7-5-6 typology) and it arises from the application of rules. Thus the 10 types of signs are combinations that, amongst the 27 ones mathematically possible, are viable in terms of semiotics. (For more on the relationship between Peirce’s phenomenological categories and his sign typology [Liszka 1996; Savan 1988].

Figure 2 shows the 10 types of signs that Peirce articulated applied to research on sustainability. The average sample profile showed a tendency to undertake action (cells 5 and 6); they also considered transparent report-

ing, market surveys, a good working environment, legislation and a stable macroeconomic context valuable factors that enable organisational stability (cell 7).

Table 2. Average results from the sample

Specification	Knowledge	Behaviour	Social value
Theoretical practice	1 528,17	2 569,78	3 592,40
Practical action	4 519,83	5 617	6 648,40
Political practice	7 603,89	8 583,33	9 608,22

Source: Own analysis based on the research results ($n = 78$).

It is important to note that it is possible to obtain a combination that differs from the 10 types of sign that Peirce articulated, which would indicate semiotic incoherence but not necessarily a discursive contradiction [Foucault 1989].

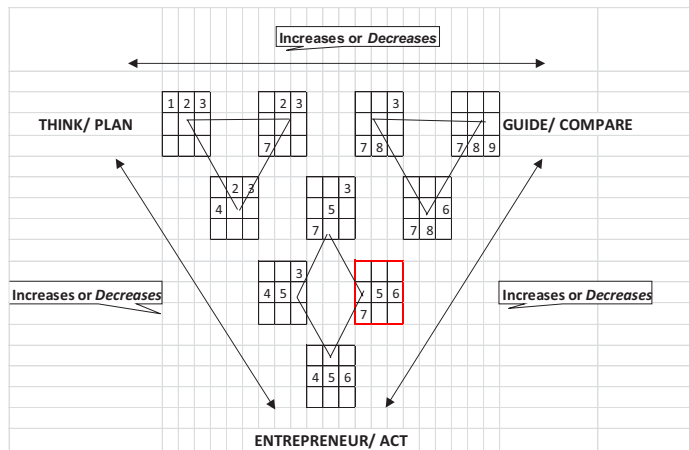


Figure 2. 10 types of sign

Source: Own elaboration adapted from Ch.S. Peirce (CP. 2.254-64)

It is possible to enrich this first reading and interpretation of the results in two ways: 1) by breaking down each of the nine cells in Table 2 into three parts each, such that we obtain 27 averages of ratings and 2) by segmenting the sample by categories or subgroups, for example, by gender,

education level or size of the organisation where the respondent works. Table 3 shows an attempt to open up the results of nine boxes into three parts each.

Table 3. Average results opened by category

1	528,17	2	569,78	3	592,4
516,25		609		662,33	
611,75		552,33		595,25	
456,5		548		518,67	
4	519,83	5	617	6	648,4
500,75		644		672	
625,25		634,5		667	
433,50		572,50		618	
7	603,89	8	583,33	9	608,22
658		585		619,67	
609,67		625,33		629,33	
544,00		539,67		575,67	

Source: Own study based on the research results ($n = 78$).

Opening these cells up allows for a deeper analysis. We will first focus on the first part of the questionnaire (cells 1, 4 and 7) that explores the issues that enable organisational sustainability represented by theories (cell 1), training courses (cell 4) and needs or laws (cell 7). Cell 1 did not prevail in terms of averages because it obtained 528.17 points. At the same time there is a significant appreciation of theories, with 611.75 points, that relate to aspects of production, economics, management and marketing. In cell 4 this situation reoccurs with 625.25 points assigned to courses in leadership, communication, negotiation and methods for developing business plans. Cell 7, which prevailed on average above cells 4 and 1, shows that respondents gave more importance (658 points) to matters such as having accounting and financial reporting transparency and having legislation that favours investment projects. This predominated over the options to achieve staff commitment or have reports on environmental control and on corporate social responsibility, which obtained an average of 544 points.

The second part of the questionnaire (cells 2, 5 and 8) explores management practice in search of organisational sustainability. The practice is represented by reports and tasks requested (cell 2), concrete management decisions and actions (cell 5) and the pragmatic assessment of the impact

that sustainable companies produce, i.e. the value they add. In cells 2 and 5 respondents were inclined to give greater value to cash flows and financial plans (609 points) as well as to actions related to having their own capital or seeking sources of financing, investing in science and technology and maintaining operational efficiency (644 points). Actions on the part of management in search of sustainability were more valued than quality control, environmental management or engaging in public relations (572.50 points). As for the value that companies add respondents (in cell 8) believed that a company adds value to consumers, customers and employees (625.33 points) rather than to local or regional economic development, the environment or society as a whole (539.67 points).

The third part of the questionnaire (cells 3, 6 and 9) addresses the evaluative aspects represented by the strategies, the assessment of management action and the assessment of the ends that guide managers' actions. Similarly to cells 2 and 5 respondents were inclined toward *Firstness* in cells 3 and 6, that is, they valued strategies and actions related to finance more, with 662.33 points and 672 points respectively. Regarding the assessment of the ends that guide managers' behaviour the following propositions received the most points: 'Developing my skills and abilities and developing creativity'. This assessment, which on average had 629.33 points, exceeds that obtained by propositions such as, 'Being admired and instilling values in my workplace' or 'creating wellbeing in my organisation's environment'.

As mentioned above the AMMR allows for a further analysis of research segmenting the sample by categories or subgroups. Segmentation by gender did not show significant differences. Both groups, male and female, fell within the same 7-5-6 typology.

Grouping by size, that is, by the number of people working in the respondents' organisations, presented divergent responses, whilst maintaining logical consistency. Respondents from small organisations, with up to 25 employees, and respondents from large organisations, with 76 to over 100 employees, displayed the same general 7-5-6 pattern. This group accounts for 82% of the sample. The remaining 18% is made up of medium-sized companies employing between 26 and 75 people. Responses from this group diverged with their maximum values in the 7-8-9 cells. Within the logical Peircean typology this result shows a trend towards orienting, comparing and evaluating rather than towards action. This does not mean that this evidence supposes some kind of causality, that is, that the size of an organisation influences the types of responses. It is simply important to show this finding.

Further evidence emerged from segmenting groups in that the group working as employees versus those who are employers diverged when assessing ends and the question of where sustainable organisations add value. To assess the propositions the following phrases were used: 'If you are (or if you were) an entrepreneur, what would be your long-term goals'? Employees were, on average, more likely to value the choice, 'develop my skills and abilities'. Entrepreneurs or freelancers were more likely to value the choice, 'generate wellbeing in my organisation's environment'. When identifying where companies add the most value the former group responded that they add 'economic value to shareholders', whilst the latter group, i.e. the shareholders, gave the highest score to the choice, 'customers by satisfying and serving them with excellence'. This discursive divergence shows how respondents answered differently according to their status within the organisation. As owners they did not think a company's added value directly benefits them; they tended to value contribution to the environment, stakeholders and customers in particular.

Conclusions

This study aims to contribute to research in business by presenting a methodology that organises perceptions and maps individual and collective subjective understanding of complex management phenomena that occur in organisations. To accomplish this the study presents a new research tool, following Ch.S. Peirce's triadic conception of signs, which was applied to a sample of business people and managers, asking them about the concept of organisational sustainability. Whilst the study could have used other phenomena within management sustainability was chosen as a proxy for the concept of success since a successful organisation is one that sustains itself over time without outside assistance or having to limit internal resources.

The results obtained show 27 logical categories from which respondents, taken individually or segmented into groups, understand sustainability. The empirical application of the method showed that, on average, the survey sample has a tendency to take actions that tend toward sustainability (cells 5 and 6) and that they consider transparent reporting, market surveys, a good working environment, legislation and stability of the macroeconomic environment important aspects of organisational sustainability (cell 7). Given these results what does the AMMR contribute compared to

other qualitative research methods? In principle it provides at least three methodological contributions.

First, the method combines theory and practice in developing a tool for researching the subjective perception of complex phenomena in organisations. This study has delved into the concept of sustainability but it could have looked into any other subject, for example, into what members of a family business understand as 'the manager-founder's succession planning', what a group of business people operating in the same sector understand for 'sector competitiveness', what members of a car company understand for 'mobility', amongst other examples. Thus to create a questionnaire to help us think about phenomena it is necessary to know the theory and practice of setting the chosen phenomena in motion. The questionnaire should be developed with the participation of those involved in the research, thus pragmatically employing a knowledge advancement strategy and forming a community of inquiry [Dewey 1916].

Second, the combination of responses obtained in 27 cells enriches the possibility of building hypotheses using the logic of abduction. These hypotheses broaden the spectrum of possibilities for understanding. In addition it is possible to obtain a more penetrating diagnosis by applying the 10 types of signs that Peirce articulated. For example, if the method is applied in the same organisation to inquire into what quality customer service means differences may be observed in responses from people at different levels of the organisation, i.e. directors, managers and employees, who may tend towards action, planning or guiding in search of quality. This information, taken as a preliminary diagnosis, enables the design of actions to coordinate the interpretation of the concept. In addition the questionnaire allows a synchronous analysis at the time of application or a diachronic one, that is, applying the same survey in the same organisation at various times.

Third, the method allows one to submit the results, expressed in hypotheses obtained through abduction, to quantitative corroboration methods. Just as respondents' value answers can be translated into a table one can also use it to design models that represent hypotheses and then test them with a structural equation model. These models are useful tools for the study of linear causal relationships and help researchers to confirm or reject causal hypotheses.

In short, Peirce's triadic conception regarding the categories of phenomena that occur in practice can be a research tool in the field of organisations, especially when considering that it is important to articulate theory with practical life and if one values the work of multidisciplinary research

[Nubiola 1996]. In fact pragmatism, semiotics and the abductive method are currently used in various disciplines of social sciences with a variety of objectives, such as abducting economic crises [Crespo, Thomé, and Heymann 2010]. It remains to be seen if business researchers will permanently install this methodology on the agenda of organisational studies in order to illuminate research on management.

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