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Environmental uncertainty: the side object of perception

María del Valle Santos Álvarez* & María Teresa García Merino**

abstract

This research was aimed at gaining a deeper insight into perception linked to environmental uncertainty and the strategic significance of perceptual diversity. Factors intervening in perception were characterised. It is specifically shown that an individual's cognitive limitations and their beliefs' affective influence gave rise to cognitive bias distorting individual perception. This model was applied to both management (perceived uncertainty) and outside observers (objective uncertainty) perceiving environmental uncertainty. The idiosyncratic nature of perceiving uncertainty and the interrelationships between various individuals' perception was thus considered (stress—management and outside observers). The significance of the heterogeneity of perception of managers working at a single company was analysed and compared to that of those working in different companies. It was found that inter-company perception of diversity enabled selective access to competitive advantages. Diversity of perception at intra-company level enhanced assessment of the background of strategy management and reduced organisational coordination.

Key words: strategic uncertainty, cognitive bias, perception, diversity.

resumen

La incertidumbre ambiental: el oscuro objeto de la percepción

El objetivo de esta investigación es profundizar en el proceso de percepción de la incertidumbre ambiental y la trascendencia estratégica de diversidad perceptual. Con ese propósito se caracterizan los factores que intervienen en el proceso de percepción. En concreto se reconoce que las limitaciones cognitivas del individuo y la influencia afectiva de sus creencias dan lugar a sesgos cognitivos que deforman la percepción individual. Este modelo se aplica a la percepción de la incertidumbre ambiental tanto para directivos —incertidumbre percibida— como para observadores externos —incertidumbre objetiva—. Se reconoce así el carácter idiosincrásico de la percepción de incertidumbre y las interrelaciones que se producen entre los procesos de percepción de los distintos individuos considerados —directivos y observadores externos—. Con este punto de partida se analiza la trascendencia de la heterogeneidad de percepciones tanto entre directivos de una misma empresa como entre los directivos de distintas empresas. Se comprueba entonces que es la diversidad de percepciones entre-empresas la que permite el acceso selectivo a ventajas competitivas. En el nivel intra-empresa la diversidad de percepciones enriquece la valoración de los antecedentes del proceso estratégico a la vez que reduce la coordinación organizativa.

Palabras clave: incertidumbre estratégica, sesgos cognitivos, percepción, diversidad.

résumé

L'incertitude environnementale : cet obscur objet de perception

L'objectif de cette recherche est d'explorer le processus de perception de l'incertitude environnementale et la transcendance stratégique de diversité perceptuelle. À cet effet, les facteurs qui interviennent dans le processus de perception sont caractérisés. Il est concrètement reconnu que les limites cognitives de l'individu et l'influence affective de ses croyances donnent lieu à des dérives cognitives qui déforment la perception individuelle. Ce modèle s'applique à la perception de l'incertitude environnementale pour les cadres —incertitude perçue— comme pour les observateurs externes —incertitude objective—. De cette façon, on reconnaît le caractère idiosyncrasique de la perception de l'incertitude et les interrelations qui se produisent entre les processus de perception des différents individus considérés —cadres et observateurs externes—. Dès lors, la transcendance de l'hétérogénéité des perceptions est analysée entre les cadres d'une même entreprise tout comme entre les cadres d'entreprises différentes. Il est alors démontré que la diversité de perceptions entre entreprises permet l'accès sélectif à des avantages concurrentiels. Dans le niveau intra-entreprise la diversité de perceptions enrichit la valorisation des antécédents du processus stratégique tout en réduisant la coordination organisationnelle.

Mots clé: incertitude stratégique, dérives cognitives, perception, diversité.

resumo

A incerteza ambiental: o escuro objeto da percepção

O objetivo desta pesquisa é se aprofundar no processo de percepção da incerteza ambiental e a transcendência estratégica de diversidade perceptual. Com esse propósito caracterizam-se os fatores que intervêm no processo de percepção. Em concreto reconhece-se que as limitações cognitivas do indivíduo e a influência afetiva de suas crenças dão lugar a distorções cognitivas que deformam a percepção individual. Este modelo se aplica à percepção da incerteza ambiental tanto para diretores —incerteza percebida— como para observadores externos —incerteza objetiva—. Reconhece-se assim o caráter idiosincrásico da percepção de incerteza e as inter-relações que se produzem entre os processos de percepção dos distintos indivíduos considerados —diretores e observadores externos—. Com este ponto de partida analisa-se a transcendência da heterogeneidade de percepções tanto entre diretores de uma mesma empresa como entre os diretores de distintas empresas. Comprova-se então que é a diversidade de percepções entre empresas a que permite o acesso seletivo a vantagens competitivas. No nível intra-empresa a diversidade de percepções enriquece a avaliação dos antecedentes do processo estratégico ao mesmo tempo que reduz a coordenação organizativa.

Palavras-chave: incerteza estratégica, distorções cognitivas, percepção, diversidade.

Clasificación JEL: M10, L20.

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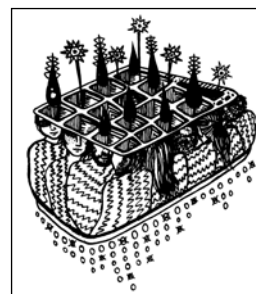
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I.– Introduction

Research into companies' strategic management has adopted a rational-mechanical perspective and a deterministic approach. Strategic management research has thus paid insufficient attention to differences in individual perceptions in important stakeholder groups. This has meant that analysing strategic processes' background has been centred on a more or less objective representation of factors such as uncertainty, dynamism or complexity. Some researchers had already warned of the need to take individuals' perception of the environment into account rather than objective reality when analysing strategic formulation (Weick, 1979). However, sufficient attention has only been given to these proposals with the advent of the cognitive approach, with management perception (being idiosyncratic in each case) becoming the focal point for research into strategic company planning. Whereas conventional approaches have assumed that all managers think and perceive alike (Stubbart, 1989), modern-day interpretation of individual perception has revealed that a single reality may lead each manager to draw his/her own image, which may in turn form the basis for their decision-making. This fresh outlook brings a new element to the fore: diversity.

Research has also highlighted the significance of environmental uncertainty when designing and formulating company strategy. Uncertainty refers to management's difficulty in predicting environmental or organisational variables which may have an impact on a company, particularly strategic choices (Miller, 1993). In other words, uncertainty reflects management's lack of information when anticipating future competitive conditions. A company's close links to other economic actors safeguarding its access to resources and the instability inherent in such relationships bears out the significance of environmental uncertainty in any company's strategic management. Researchers have thus addressed different aspects of uncertainty: its impact on strategic formulation and subsequent implementation, how it is perceived by management and, mainly, the lack of agreement between management perception (perceived uncertainty) and uncertainty as viewed by outside observers and construed using archival measurement (objective uncertainty). The measurements used for determining perceived and objective uncertainty and the cognitive bias inherent in perception are the main reason behind such discrepancy (Boyd *et al.*, 1993). What has not been taken into account, however, is that objective uncertainty also emerges as a result of individual perception and, consequently, involves an element of subjectivity. This paper has used the term "outside observers" to refer to researchers, experts, analysts or other individuals who

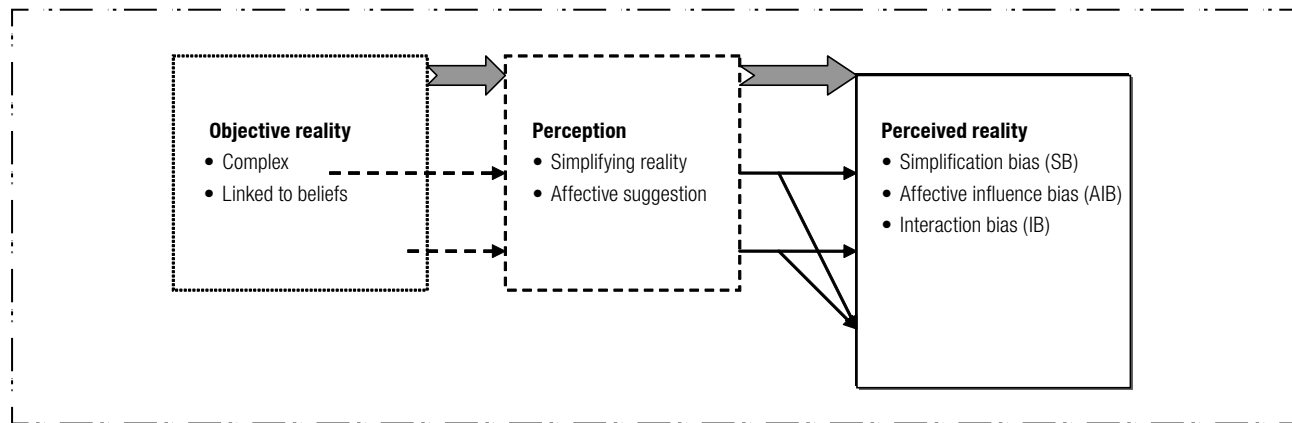
(having knowledge of or having analysed the economic and business environment) are not directly involved in company management.

This research explored perception of uncertainty in detail with a twofold aim in mind: highlighting existing differences between management perception and that of outside observers while stressing the caution required when using the term "objective uncertainty" and analysing the heterogeneity of perceptions among the various individuals involved in competitive dynamics, together with the strategic significance of such diversity.

II.– An individual perception model

Perception is defined as being, "an inner feeling arising from a material impression made on our senses," "the act or fact of perceiving," or put another way, "receiving external images, impressions or sensations through one of our senses." Information does not therefore reach the receiver in a pure form, but rather through the filter of perception. However, human systems are not perfect and are subject to bias (so-called cognitive bias). Such cognitive bias may be viewed as shortcuts enabling us to cope with difficulties in such information, whether as a result of receiving too much or too little information concerning many decisions which need to be taken. They therefore entail incorrect hypotheses or inferences (Forbes, 2005). We may thus state that perception provides a **more or less imperfect view** of reality (Mezias and Starbuck, 2003). Such is the case that different individuals' perception may vary significantly when faced with the same event. This leads us to what is termed, "perceptual relativity" (Bourgeois, 1985).

Perception distances itself from reality for two reasons (Santos and García, 2006): the cognitive complexity facing individuals when confronted by the reality surrounding them and the beliefs predisposing them to approximate objective reality to preconceived ideas (Figure 1). In the former case it is the decision-makers' cognitive limitations (Simon, 1957; Cyert and March, 1963) that put them in a position of inferiority vis-à-vis the business world's cognitive complexity. Moreover, individuals tend to be straightforward in their search for explanations in cause-effect relationships (Downey and Brief, 1986). Thus, individuals opt to simplify when receiving complex stimuli, causing perception to be inaccurate and lapse into cognitive bias. The system of individual beliefs filters individual perception in the second instance (Schwenk, 1984; Tikkanen *et al.*, 2005). These beliefs therefore predispose an individual to distort her/his perception in one direction or another when questioned about

FIGURE-1: Perception model

certain issues on which preconceived beliefs are held. For instance, it has been found that some managers will interpret certain events as opportunities whereas others will view them as threats (Kuvaas and Kaufman, 2004: 254; Lant *et al.*, 1992). It should also be pointed out that interactions may occur between cognitive complexity and affective influence. It can thus be concluded that individual perception does not accurately reflect reality, but may encompass three types of bias:

1. *Simplification bias* (SB): bias arising from the simplification required by the complexity of objective reality;
2. *Affective influence bias* (AIB): bias stemming from the affective influence emerging from individual belief; and
3. *Interaction bias* (IB): bias springing from the interaction between the complexity of objective reality and affective influence.

Nevertheless, the various types of bias do not appear in all perception processes, nor does all bias reach the same level of intensity. Quite the opposite is true since the “strength of the situation” moderates the degree to which a receiver’s personality has an impact on perception (Waller *et al.*, 1995; Entrialgo *et al.*, 2001). The force of the situation basically refers to the clarity of the stimulus (Fiske and Taylor, 1991), such that the clearer the stimulus, the less important the receiver’s personal interpretation. Depending on the strength of the situation, a distinction may be drawn between “weak nature” and “strong nature” situations; in the former, the lack of clarity in the stimulus gives rise to quite different perceptions among different subjects. By contrast, intense situations are characterised by a clearer definition of the stimulus leaving less room for an individual receiver’s personal appraisal (Sutcliffe and Huber, 1998). The strength of the situation thus mi-

tigates the link between the stimulus and the appearance of bias, weak situations being more likely to be susceptible to cognitive bias.

III.– Perceiving environmental uncertainty

Uncertainty refers to a sense of doubt arising from potentially unpredictable variation (Priem *et al.*, 2002). Change does not produce uncertainty but rather changes which are difficult to predict (Milliken, 1987). In the world of company management, environmental uncertainty refers to the doubts managers experience when faced with the difficulty of foreseeing future competitive conditions (McMullen and Shepherd, 2006). Three kinds of uncertainty may be distinguished (Milliken, 1987): state uncertainty (difficulty knowing in which direction the environment may change), uncertainty of effect (difficulty assessing the possible impact of these changes on a particular company) and response uncertainty (difficulty knowing which type of response may prove successful). Uncertainty is also regarded as the result of combining two features: the complexity inherent in the external factors surrounding business activity and the variation these factors may undergo (Duncan, 1972).

It is also worth noting that uncertainty shows two sides in the literature: uncertainty as a perceptual phenomenon (referring to the uncertainty perceived by managers making business decisions) and the uncertainty describing the business environment (linked to experts or analysts’ assessment on the basis of certain indicators). The latter kind of uncertainty is often referred to as “objective uncertainty” as these indicators are fashioned on quantitative variables through statistical procedures which may be easily generalised (Dess and Beard, 1984). These two sides of uncertainty are therefore founded on the basis of the complexity and variability of the external conditions surrounding bu-

business activity, but from quite different perspectives. Perceived uncertainty refers to a manager's direct evaluation (insiders' perceived uncertainty) whereas objective uncertainty is based on an external observer's assessment regarding difficulties faced by management when anticipating future competitive conditions (outsiders' perceived uncertainty).

Having analysed the essence of uncertainty, it is clear that a *weak nature* concept is being dealt with as it does not appear in a totally clear and distinct manner. This means that individual perception has a determining effect on its evaluation. Different individuals from the same competitive environment will thus experience a different sense of doubt (i.e. identify differing levels of uncertainty) (Lipshitz and Strauss, 1997: 150). It can thus be said that uncertainty is subjective, as has been recognised for some decades now (Duncan, 1972; Milliken, 1987 and 1990) not only from the management perspective but also in a broader sense. Whoever may be assessing uncertainty (manager or outside observer), their interpretation will have a decisive impact on the ultimate evaluation.

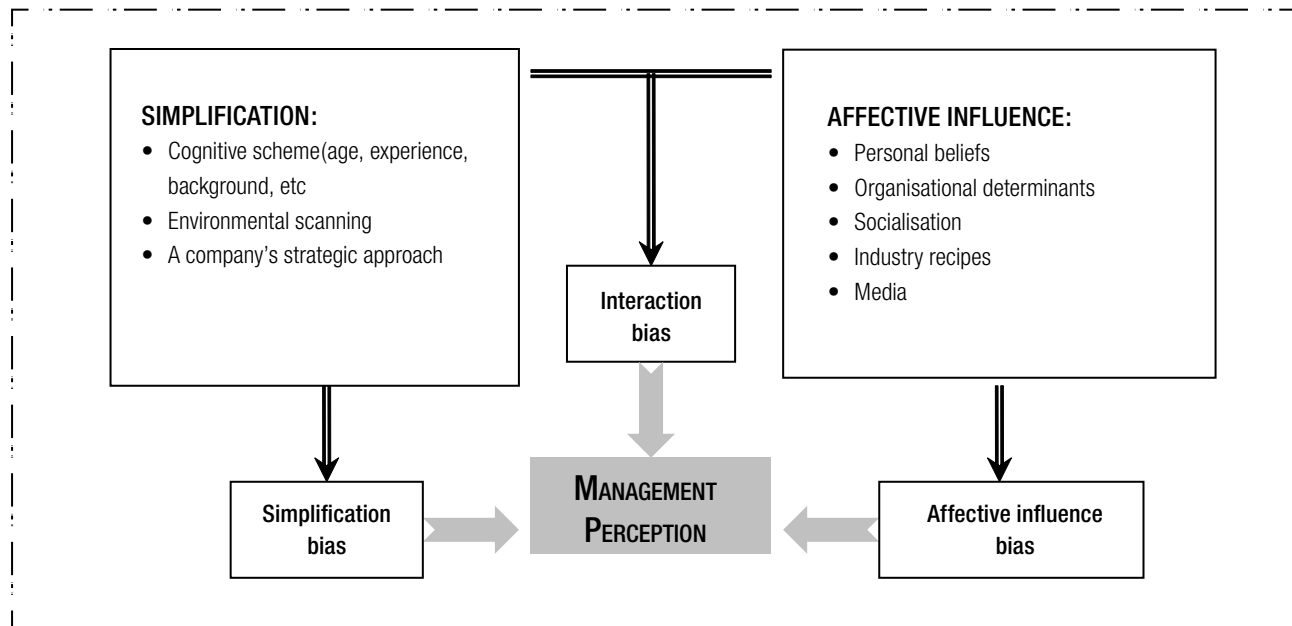
III.1.– *Insiders' perceived uncertainty*

Following on from the model of perception presented in the previous section, environmental uncertainty is now assessed from the manager or company decision-maker's standpoint. When assessing uncertainty, managers choose a *simplification* or *approximation*

procedure while at the same time remaining subject to the *affective influence of their beliefs* (Figure-2). The *simplification procedure* involves determining the sources of information and indicators used by managers as a reference point for knowing the degree of uncertainty in the surrounding competitive environment. This includes all the activities related to "environmental scanning" (i.e. those activities aimed at acquiring, interpreting and using such information) (Choo, 2001; Garg et al., 2003) which will aid them in the task of managing (strategic process design and decision-making). Managers may engage in several types of "environmental scanning" activities, ranging from the most formal procedures and standard sources of information to the most informal procedures and the most casual and opportunist sources of information. This process is specific to each manager, in that it depends on their cognitive scheme (i.e. experience, background or training) (Fiske and Taylor, 1991; Greve and Taylor, 2000). However, it is not only a manager's personal factors which intervene but organisational context-linked factors too. It has been seen that company managers adopting differing strategic approaches focus on differing aspects of the environment and thus make different appraisals of uncertainty (Daft et al., 1988; Kumar and Strandholm, 2002).

As regards the *affective influence* exerted by beliefs, these derive from various determinants which may be grouped into two categories: those linked to individuals and those emerging from their surroundings. The for-



FIGURE 2. The management perception process.

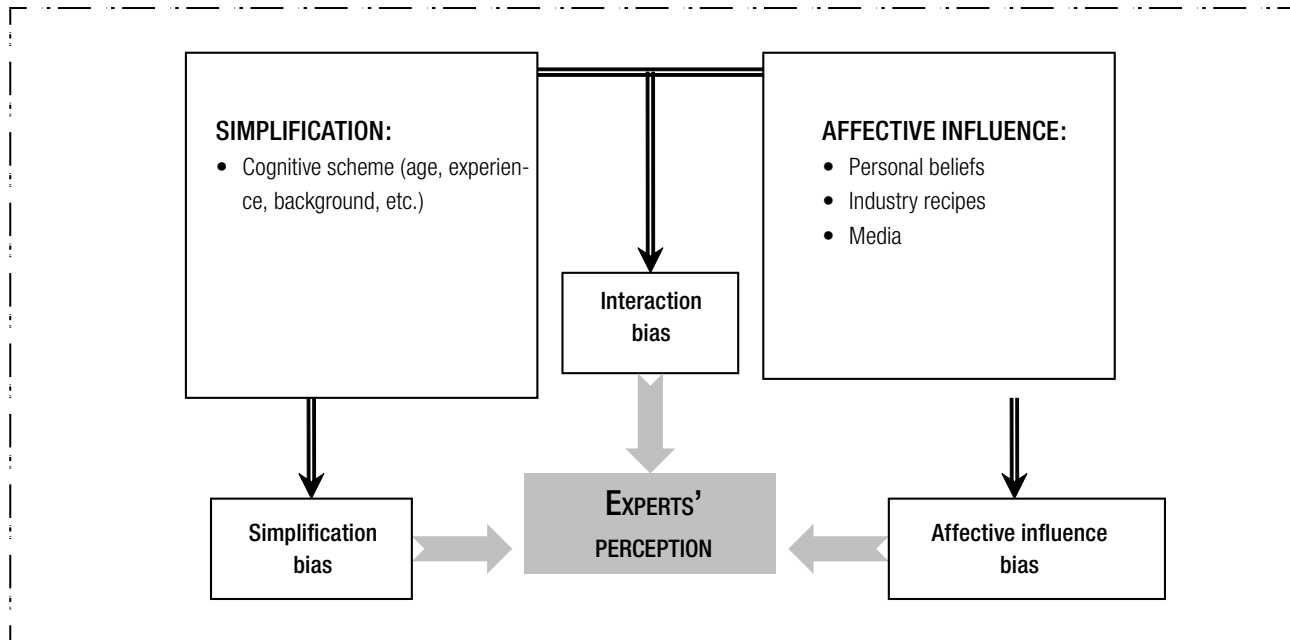
mer refers to an individual's preconceived ideas, overconfidence, or the illusion of control (Schwenk, 1986; Huff and Schwenk, 1990 and Hodgkinson *et al.*, 1999). It has been concluded that when faced with the same level of information regarding the environment, certain managers will perceive certainty whereas others, even within the same company, will feel that they are immersed in an uncertain environment. Likewise, beliefs are also linked to factors emerging from a management context, such as the company's previous results (Khatri and D'Netto, 1997) and other individuals' opinions. Some research has pointed to the fact that managers from successful companies are more confident and display a greater feeling of control over the environment than managers from companies performing poorly (Starbuck, 1985; Milliken, 1990 and Milliken and Lant, 1991). In other words, company success leads managers to perceive that an uncertain environment is in fact predictable (Koberg and Ungson, 1987; Milliken and Lant, 1991; Khatri and D'Netto, 1997).

Speaking of the opinions of others refers to companies' stakeholders, other managers in the sector and even analysts and experts. Regarding the former, it should be pointed out that a socialisation emerges throughout a company's history resulting from the interaction of those involved, producing converging interpretations amongst the various individuals (Sutcliffe and Huber, 1998; Michel and Hambrick, 1992; Wiersema and Bantel, 1992: 112; Kilduff *et al.*, 2000). Company stakeholders' perceptions and opinions vis-à-vis environmental uncertainty have thus had an impact on management perception. Management within a single industry will tend to formulate a series of shared beliefs (industry

recipes) (Spender, 1989; Grinyer and Spender, 1979; Johnson and Hoopes, 2003; Dimaggio and Powell, 1983; Porac, *et al.*, 1989), the result of accessing the same sources of information and messages distributed in the media. These beliefs also constitute one determinant of affective influence on management perception in that they direct managers' assessment as far as environmental uncertainty is concerned. Management beliefs are also affected by the opinions of outside analysts in the media. It has specifically been found that journalists' appraisals of certain issues and factors concerning the competitive environment have a decisive influence on how management perceives such factors (Ebrahimi, 2000: 75; Hayward *et al.*, 2004).

III.2.– Outsiders' perceived uncertainty

Uncertainty will now be explored from a viewpoint removed from that of the manager, namely that offered by outside observers (researchers, experts or analysts); uncertainty has been used up to this point as a variable for describing the environment, applying certain easily-generalised quantitative indicators. A variable such as the volatility of some representative parameter within the sector has been used or some indicator has been formulated based on a combination of measurements of complexity (heterogeneity) and dynamism (variability). Nevertheless, such evaluation of uncertainty has also been founded on an individual's perception and is also likely to be subject to bias. Following the previously proposed model of perception, simplification and affective influence provide the foundation for the process. An outside observer (like

FIGURE 3. The perception process of outside observers.

any other individual) will thus opt for *simplification* as a solution to the cognitive complexity inherent in the concept of uncertainty. Designing and developing the variables used and the choice of information sources from which the data is drawn reflect the simplification adopted by an individual. *Affective influence* is linked to an individual's personal beliefs (preconceived ideas, overconfidence or illusion of control) and features from the surrounding environment (shared beliefs among sector management and expert opinion). As was the case with insiders' perceived uncertainty, an outside observer's perception therefore harbours bias derived from both simplification and affective influence. The link between them will also give rise to interaction bias (Figure 3).

III.3.– The relationship between insiders' and outsiders' perceived uncertainty

A look at the perception of uncertainty by the various subjects considered provides an idea of how little they concur. It is worth noting that only the influence of industry recipes and opinions published in the media had an impact on both subjects. Research has broadly reflected the distance separating management perception from outsiders' perceived uncertainty (Downey, Hellriegel and Slocum, 1975; Tosi *et al.*, 1973; Sawyerr, 1993; Boyd and Fulk, 1996:3; Boyd *et al.*, 1993; Doty *et al.*, 2006) and has outlined the various arguments vindicating such discrepancy. Arguments accounting for these discrepancies are linked to using differing measurements, the existence of filter variables between objective measurements and perception measurements

(Boyd *et al.*, 1993) and the environment's differing size for managers and experts (Doty *et al.*, 2006).

However, research has overlooked the existing link between the two processes of perception. As has been seen with management perception, analysts or experts' assessment becomes a determinant of affective influence for managers from the moment that assessment appears in the media. It should also be remembered that experts' evaluation is usually aimed at analysing or preparing reports for publication. One might also think, however, that management opinion could have an impact on expert perception as an element of affective influence. It should be borne in mind that sectors encompass a wide range of companies and that an individual manager's opinion goes largely unnoticed; only a few opinions from the most eminent managers appear in the media. It may therefore be assumed that management opinion scarcely intervenes in analysts' perception and that only when managers' opinions give rise to industry recipes do we see that these opinions have any affective influence on experts.

IV.– The strategic significance of diversity in perceiving uncertainty

The range of factors intervening in individual perception leads to specific and individual opinions being held by each person. This forces us to consider *diversity* of perception as a key factor in analysis. This raises two questions: What are the main elements affecting such diversity? What is the strategic significance of diversity? A distinction can be drawn between two levels

of analysis: company management (intra-company level) and management in the sector or industry (inter-company level). The difference between management perception and that of experts is only significant in strategic terms in that it highlights that expert evaluation is merely one element of affective influence on management perception.

The diversity of perceptions found between managers in the same company only arises from each individual's personal characteristics, i.e. their cognitive scheme (and, therefore, their process of simplification) and their own personal beliefs (their affective influence). These elements denote the difference between individuals as they are led to adopt a particular view of the environment (Bunderson and Sutcliffe, 1995; Sutcliffe and Huber, 1998) – in this case environmental uncertainty. The remaining elements intervening in management perception (company strategy, organisational conditions, internal socialisation, industry recipes and expert opinion) exert a similar influence on managers, favouring agreement in perceiving uncertainty. Intra-company diversity of perception affects strategic management, particularly during the formulation stage. Diversity reflects multiple viewpoints when assessing the background to a strategic approach (Knight *et al.*, 1999; Kilduff *et al.*, 2000) thus aiding consideration of potential competitive threats (Bourgeois, 1985). However, it undermines organisational coordination (Priem, 1990; Kallermanns *et al.*, 2005). Therefore, while multiple viewpoints may strengthen strategic formulation, a move should be made towards strategic consensus to ensure unified formulation of company strategy. Strategic consensus refers to the agreement between company decision-makers as to priorities and strategic goals (Ambrosini and Bowman, 2003; Markóczy, 2001; Floyd and Wooldridge, 1992: 28). The level of consensus required by strategic formulation is most likely to be achieved by environmental scanning (Dess and Origer, 1987, West and Schwenk, 1996; Knight *et al.*, 1999: 446). Should certain agreement be reached regarding perceived uncertainty and the latter be considered too high or linked to strategic aspects, further scanning will be undertaken to enhance avail-

able knowledge and provide a solid base on which to ground strategic formulation (Choo, 2001; Murphy, 1987; Daft *et al.*, 1988; Kefalas and Schoderbek, 1973; Sawyerr, 1993). The existence of uncertainty is necessary but not in itself sufficient to justify scanning, since management must also feel that uncertainty is linked to a company's strategic aspects (Pfeffer and Salancik, 1978; Daft *et al.*, 1988; Ebrahimi, 2000). However, it should also be remembered that consensus in management perception vis-à-vis uncertainty does not guarantee that this perception reflects reality. Proving whether management evaluation is coherent with reality may be an extremely difficult task, given the weak nature of the concept of uncertainty. Each individual's knowledge of the factors making up the environment together with any possible variation will determine management assessment of the level of environmental uncertainty. Should managers perceive greater uncertainty than may be warranted by external circumstances, they will *unnecessarily* waste resources on scanning. By contrast, should managers feel over-confident, the company's capacity to adapt quickly to any changes which may emerge in the competitive environment will no doubt be impaired (Bourgeois, 1985; Bukszar, 1999).

Regarding inter-company diversity, individual simplification and affective influence linked to each manager in all the companies making up a particular sector make for the overall diversity of perceptions prevailing in the industry. Affective influence emerging from industry recipes, together with the messages appearing in the media, have a uniform effect on management in the sector leading to concurring evaluations. Such like-mindedness regarding the level of strategic uncertainty consolidates industry recipes and leads to cooperation agreements amongst companies involved in the sector (alliances, coordination in strategic movements or a collective act) (Abrahamson and Fombrun, 1992; Hirsch, 1975; Merchant and Schendel, 2000; Pehrsson, 2006). By contrast, convergence of perceptions may prove hazardous if it blinds the industry to significant competitive threats (Zajac and Bazerman, 1991). Thus, moving away from convergence, and as



diverging perceptions begin to emerge, the possibility of reaching cooperation agreements among companies becomes lessened. Such discrepancy may give rise to differences in the expectations linked to various strategic alternatives (Barney, 1986), meaning that companies may adopt differing strategies (Starbuck, 1986; Bourgeois, 1985) and, therefore, some companies may reap extraordinary profits. If perceptions within a sector or sub-population concur, no company will be at an advantage through perceiving better than any other (Barney, 1986; Sutcliffe and Huber, 1998).

Divergence of inter-company opinions may provide some companies with a competitive edge arising from the information advantage gained from knowledge of the environment (Barney, 1986: 1238). It has often been pointed out analysing the environment offers little chance to gain any competitive advantage since the methods used by the various companies for gathering information are very similar. Thus, using the media as a reference point for gathering information on the environment yields no informative advantage in that it is equally accessible to all companies alike. It may therefore be concluded that access to informative advantages is linked to using certain approximations and simplification removed from the usual procedures and interpretation of available information.

Discussion and conclusions

Environmental uncertainty reflects the sense of doubt experienced by managers when facing the problem of predicting future competitive conditions. For decades the concept of environmental uncertainty has drawn the attention of researchers who have particularly focused on how it affects corporate strategy. The relationships companies maintain with other economic actors to ensure access to resources and the prevailing instability in such relationships accounts for the significance of environmental uncertainty in corporate strategy. The impact of uncertainty in strategic processes does not come about impersonally, nor does it emerge from complex dependence relationships, but rather through management perception. This has led to abundant research addressing management perception of uncertainty, research which has highlighted this variable's subjective nature. Uncertainty has also been used as a variable to describe the environment, applying certain easily-generalised quantitative indicators. Despite this kind of uncertainty being described as objective, it should be remembered that it also derives from perception developed by an outside observer (whether a researcher, expert or analyst). It may therefore be concluded that in both cases evaluation of uncertainty depends on

individual perception which aims to mirror the difficulties individuals face when anticipating future conditions in a business environment.

However, human perception is by no means flawless due to certain bias and distortions and merely provides an approximate reflection of the reality prompting it. Such distortion falls into two groups: simplification arising from individuals' cognitive limitations and the affective influence emerging from a variety of factors ranging from personal beliefs to the opinions of others. Perception may thus be viewed as being flawed and specific for each individual to such an extent that the diversity of perception emerges as the focal point for any research addressing perceiving environmental uncertainty.

The existing literature has merely served to highlight the lack of any apparent convergence between management perception and outsiders' perceived uncertainty. However, formulating the proposed perception model allowed us to go further as it enabled us to account for discrepancies in individual perception and served to underline interrelationships in individuals' (inside and outside observers) perception.

Competitive dynamics concern the diversity of intra-company and inter-company perception. Intra-company diversity of perception enriches evaluating the background for a company adopting a particular strategy yet hinders the strategic consensus required when formulating strategy. Diversity of inter-company perceptions allows selective access to competitive advantages while handicapping cross-company agreements and cooperation.

Certain implications for future research and managers should be highlighted. From the research standpoint, the study has reflected the need to explore perception in greater detail when analysing uncertainty's impact on corporate strategy. The work also pointed to the interest in recognising the diversity of perception as a key element from which to explore the strategic significance of uncertainty for competitive dynamics. From a managers' viewpoint, the study may enlighten managers as to which elements influence their perception of environmental uncertainty and, particularly, alert them as to which of these elements may guide their perception in line with that of other managers, both within their own company and the competitive sector they operate in.

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References

- Abrahamson, E. & Fombrun, C. J. (1992). Forging the iron cage: interorganizational networks and the production of macro-culture. *Journal of Management Studies*, 29(2), 175-94.
- Ambrosini, V. & Bowman, C. (2003). Managerial consensus and corporate strategy: why do executives agree or disagree about corporate strategy? *European Management Journal*, 21(2), 213-221.
- Barney, J. B. (1986). Strategic Factor markets: expectations, luck, and business strategy. *Management Science*, 36(10), 1231-1241.
- Bourgeois, L. J. (1985). Strategic goals, perceived uncertainty and economic performance in volatile environments. *Academy of Management Journal*, 28(3), 548-573.
- Boyd, B. K., Dess, G. C. & Rasheed, A. M. (1993). Divergence between archival and perceptual measures of the environment: causes and consequences. *The Academy of Management Review*, 18(2), 204-227.
- Boyd, B. K. & Fulk, J. (1996). Executive scanning and perceived uncertainty: a multidimensional model. *Journal of Management*, 22(1), 1-21.
- Bukszar, E. Jr. (1999). Strategic bias: The impact of cognitive biases on strategy. *Canadian Journal of Administrative Sciences*, 16, 105-117.
- Bunderson, J. S. & Sutcliffe, K. M. (1995). Work history and selective perception: fine-tuning what we know. *Academy of Management Journal, Best Papers Proceeding*, 459-463.
- Choo, Ch. W. (2001). Environmental scanning as information seeking and organizational learning. *Information Research*, 7(1).
- Cyert, R. M. & March, J. G. (1963). *A behavioural theory of the firm*. Englewood Cliffs, NJ: Prentice-Hall.
- Daft, R. L., Sormunen, J. & Parks, D. (1988). Chief executive scanning, environmental characteristics, and company performance: An empirical study. *Strategic Management Journal*, 9, 123-139.
- Dess, G. G. & Beard, D. W. (1984). Dimensions of organizational task environments. *Administrative Science Quarterly*, 29(1), 52-73.
- Dess, G. G. & Origer, N. K. (1987). Environment, structure, and consensus in strategy formulation: A conceptual integration. *Academy of Management Review*, 12(2), 313-330.
- DiMaggio, P. J. & Powell, W. W. (1983). The iron cage revisited: institutional isomorphism and collective rationality in organizational fields. *American Sociological Review*, 48, 147-160.
- Doty, D. H., Bhattacharya, M., Wheatley, K. K. & Sutcliffe, K. M. (2006). Divergence between informant and archival measures of the environment: real differences, artefact, or perceptual error? *Journal of Business Research*, 59, 268-277.
- Downey, H. & Brief, A. (1986). How cognitive structures affect organizational design. En H. Jr. Sims and D. Gioia (Eds.), *The Thinking Organization* (pp.165-190). San Francisco, CA: Jossey-Bass.
- Downey, H. K., Hellriegel, D. & Slocum, J. W. Jr. (1975). Environmental uncertainty: the construct and its application. *Administrative Science Quarterly*, 20, 613-629.
- Duncan, R. (1972). Organizational structure, environment, and performances-the role of strategic choice. *Sociology*, 6, 1-22.
- Ebrahimi, B. P. (2000). Perceived strategic uncertainty and environmental scanning. Behavior of Hong Kong Chinese executives. *Journal of Business Research*, 49, 67-77.
- Entrialgo, M., Fernández, E. & Vázquez, C. J. (2001). Los efectos de la turbulencia del entorno y del grado de discrecionalidad percibido en el comportamiento del emprendedor. *Revista Europea de Dirección y Economía de la Empresa*, 10(1), 21-36.
- Fiske, S. T. & Taylor, S. E. (1991). *Social cognition* (2nd ed.). New York: McGraw Hill.
- Floyd, W. S. & Wooldridge, B. (1992). Middle management involvement in strategy and its association with strategic type. *Strategic Management Journal*, 7, 313-327.
- Forbes, D. P. (2005). Are some entrepreneurs more overconfident than other? *Journal of Business Venturing*, 20(5), 623-640.
- Garg, V. K., Walters, B. A. & Priem, R. L. (2003). Chief executive scanning emphases, environmental dynamism, and manufacturing company performance. *Strategic Management Journal*, 24, 725-744.
- Greve, H. R. & Taylor, A. (2000). Innovations as catalysts for organizational change: shifts in organizational cognition and search. *Administrative Science Quarterly*, 45, 54-80.
- Grinyer, P. & Spender, J. (1979). Recipes, crises, and adaptation in mature businesses. *International Studies of Management and Organisation*, 9, 113-133.
- Hayward, M. L., Rindova, V. P. & Pollock, T. G. (2004). Believing one's own press: the causes and consequences of CEO celebrity. *Strategic Management Journal*, 25(7), 637-653.
- Hirsch, P. M (1975). Organizational effectiveness and the institutional environment. *Administrative Science Quarterly*, 20, 327-344.
- Hodgkinson, G. P., Bown, N. J., Maule, A. J., Glaister, K. W. & Rearman, A. D. (1999). Breaking the frame: an analysis of strategic cognition and decision making under uncertainty. *Strategic Management Journal*, 20, 977-985.
- Huff, A. S. & Schwenk, C. R. (1990). Bias and sensemaking in good times and bad. In A. Huff (Eds.), *Mapping Strategic Thought* (pp.89-108). Chichester: Wiley.
- Johnson, R. and Hoopes, D. G. (2003). Managerial cognition, sunk costs, and evolution of industry structure. *Strategic Management Journal*, 24(10), 1057-1068.
- Kefalas, A. G. & Schoderbeck, P. P (1973). Scanning the business environment: some empirical results. *Decision Sciences*, 4(1), 63-74.
- Kellermanns, F. W., Walter, J., Lechner, Ch. & Floyd, S. W. (2005). The lack of consensus about strategic consensus: advancing theory and research. *Journal of Management*, 31(5), 719-737.
- Khatri, N. & D'Netto, B. (1997). Perceived uncertainty and performance: the causal direction. *Journal of Applied Management Studies*, 6(2), 219-233.
- Kilduff, M., Angelmar, R. & Mehra, A. (2000). Top management-team diversity and firms performance: examining the role of cognitions. *Organization Science*, 11(1), 21-34.
- Knight, D., Pearce, C. L., Smith, K.G., Olian, J. O., Sims, H., Smith, K. A. & Flood, P. (1999). Top management team diversity, group process, and strategic consensus. *Strategic Management Journal*, 20, 445-465.
- Koberg, C. S. & Ungson, G. R. (1987). The effects of environmental uncertainty and dependence on organizational structure and performance: a comparative study. *Journal of Management*, 13(4), 725-737.
- Kumar, K. & Strandholm, K. (2002). Perceived uncertainty: how different environmental sectors moderate strategy-performance relationships. *Journal of American Academy of Business*, 1(2), 289-295.
- Kuvaas, B. & Kaufman, G. (2004). Individual and organizational antecedents to strategic-issue interpretation. *Scandinavian Journal of Management*, 20, 245-275.
- Lant, T. K., Milliken, F. J. & Batra, B. (1992). The role of managerial learning and interpretation in strategic persistence and reorientation: An empirical exploration. *Strategic Management Journal*, 13(8), 585-608.
- Lipshitz, R. & Strauss, O. (1997). Coping with uncertainty: a naturalistic decision-making analysis. *Organizational Behavior and Human Decision Processes*, 69(2), 149-163.
- McMullen, J. S. & Shepherd, D. A. (2006). Entrepreneurial action and the role of uncertainty in the theory of the entrepreneur. *Academy of Management Review*, 31(1), 132-152.
- Merchant, H. & Schendel, D. (2000). How do international joint ventures create shareholder value? *Strategic Management Journal*, 21(7), 723-737.

- Mezias, J. M. & Starbuck, W. H. (2003). Studying the accuracy of managers' perceptions: A Research Odyssey. *British Journal of Management*, 14(1), 3-17.
- Michel, J. & Hambrick, D. (1992). Diversification posture and top management team characteristics. *Academy of Management Journal*, 35, 9-37.
- Milliken, F. J. (1987). Three types of perceived uncertainty about the environment: state, effect, and response uncertainty. *The Academy of Management Review*, 12(1), 133-143.
- Milliken, F. J. (1990). Perceiving and interpreting environmental change: An examination of college administrators' interpretation of changing demographics. *Academy of Management Journal*, 33(1), 42-63.
- Milliken, F. J. & Lant, T. K. (1991). The impact of an organization's recent performance history on strategic persistence and change: The role of managerial interpretations. In J. Dutton, A. Huff and P. Shrivastava (Eds.), *Advances in Strategic Management* (pp. 129-156). Greenwich, CT: JAI Press.
- Miller, K. D. (1993). Industry and country effects on manager's perceptions of environmental uncertainties. *Journal of International Business Studies*, 24(3), 693-714.
- Murphy, M. F. (1987). *Environmental scanning: a case study in higher education*. Athens, GA: University of Georgia.
- Pehrsson, A. (2006). Business relatedness and performance: a study of managerial perceptions. *Strategic Management Journal*, 27, 265-282.
- Pfeffer, J. & Salancik, G.R. (1978). *The external control of organizations*. New York: Harper and Row.
- Porac, J., Thomas, H. & Baden-Fuller, C. (1989). Competitive groups as cognitive communities: The case of Scottish Knitwear manufactures. *Journal of Management Studies*, 26, 397-415.
- Priem, R. L. (1990). Top management team group factors, consensus, and company performance. *Strategic Management Journal*, 11, 469-478.
- Priem, R. L., Love, L. G. & Shaffer, M. A. (2002). Executives' perceptions of uncertainty sources: a numerical taxonomy and underlying dimensions. *Journal of Management*, 28(6), 725-746.
- Santos, M. V. & García, M. T. (2006). Managers' opinion: reality or fiction. A narrative approach. *Management Decision*, 44(6), 752-770.
- Sawyer, O. O. (1993). Environmental uncertainty and environmental scanning activities of Nigerian manufacturing executives: a comparative analysis. *Strategic Management Journal*, 14(4), 287-299.
- Schwenk, C. R. (1984). Cognitive Simplification in strategic decision making. *Strategic Management Journal*, 5(2), 111-128.
- Schwenk, C. (1986). Information, cognitive biases, and commitment to a course of action. *Academy of Management Review*, 11, 298-310.
- Simon, H. (1957). *Administrative Behaviour*. New York: The Free Press.
- Sponder, J. C. (1989). *Industry recipes: the nature and sources of managerial judgement*. Oxford: Blackwell.
- Starbuck, W. H. (1966). The efficiency of British and American retail employees. *Administrative Science Quarterly*, 11, 345-385.
- Starbuck, W. H. (1985). Acting first and thinking later: theory versus reality in strategic change. En J. M. Penning and Associates (eds.), *Organizational Strategy and Change* (pp. 336-372). San Francisco: Bass.
- Sutcliffe, K. & Huber, G. P. (1998). Company and industry as determinants of executive perceptions of the environment. *Strategic Management Journal*, 9, 793-807.
- Stubbart, C. I. (1989). Managerial cognition: a missing link in strategic management research. *Journal of Management Studies*, 26, 325-48.
- Tikkanen, H., Lamberg, J., Parvinen, P. & Kallunki, J-P. (2005). Managerial cognition, action and the business model of the firm. *Management Decision*, 43(6), 789-809.
- Tosi, H., Aldag, R. & Storey, R. (1973). On the measurement of the environment: an assessment of the Lawrence and Lorch environmental uncertainty subscale. *Administrative Science Quarterly*, 18, 27-36.
- Waller, M. J., Huber, G. P. & Glick, W. H. (1995). Functional background as a determinant of executives' selective perception. *Academy of Management Journal*, 8(4), 943-974.
- Weick, K. (1979). *The social Psychology of organizing*. Reading: Addison-Wesley.
- West, C. L. Jr. & Schwenk, C. R. (1996). Top management team strategic consensus and company performance: a report of resounding nonfindings. *Strategic Management Journal*, 17(7), 571-576.
- Wiersema, M. F. & Bantel, K. (1992). Top management team demography and corporate strategic change. *Academy of Management Journal*, 35, 91-121.
- Zajac, E. & Bazerman, M. (1991). Blind spots in industry and competitor analysis: implications of intercompany (mis)perceptions for strategic decisions. *Academy of Management Review*, 16, 37-57.

