The role of personality in situations of coopetition:

The case of future managers

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Résumé : La coopétition est une notion relativement récente qui mérite d'être étudiée plus en profondeur afin d'enrichir le champ du management. La coopétition a été essentiellement analysée dans une perspective de relations interorganisationnelles. Pourtant, ces relations organisationnelles reposent sur des bases relationnelles individuelles. Cette recherche a pour but de combler l'absence de travaux au niveau de la personnalité des acteurs de la coopétition. A partir d'un échantillon de 165 futurs managers, cet article présente une typologie d'acteurs réalisée grâce à cinq dimensions de la coopétition. Trois profils émergent : les compétiteurs, les coopérateurs et les coopétiteurs. Nous montrons que les traits de personnalité des futurs managers expliquent différemment les dimensions de la coopétition selon les trois profils identifiés.

Abstract: Coopetition is a relatively recent concept, which remains to be investigated fully, so as to enrich the field of management. The concept has been studied primarily in the context of inter-organizational relations. However, these organizational relations really prevail on an individual basis. The absence of work on coopetition with regard to the actors themselves is the motivation for the present individualized analysis. With a sample of 165 future managers, the article presents a typology of the actors, according to five dimensions inherent in coopetition. Three profiles emerge: competitors, cooperators and "coopetitors". It is furthermore demonstrated that the personality traits of the actors explain the five dimensions of coopetition, but that the relationships are different according to the three profiles we identified.

INTRODUCTION

Although often perceived as opposites, competitive and cooperative strategies are in fact close dependants. Research on strategic alliances has primarily studied the competing and cooperating behavior of firms in a somewhat dichotomous manner (Dagnino and Padula, 2002). This standard approach regards companies as being aware of competitive or cooperative "cycles" which occur successively. The simultaneous study of competitive and cooperative behaviors remains rare. Thus, the concept of "coopetition" combines the competing and cooperative behavior of actors when these two behaviors occur simultaneously (Nalebuff and Brandenburger, 1995; Lado et al., 1997). This process can be regarded as a simultaneous dyadic relation (Bengtsson and Kock, 2000) or as a relational mode based on a division of congruent interests (Dagnino and Padula, 2002). The former studies analyze coopetition particularly within the framework of interorganizational relations. However, studying coopetitive behavior within the framework of both intra-organizational and inter-individual relationships is essential and fundamental. It would thus seem relevant to establish the profile of actors according to their capacity to "coopetite" in order to enrich the theoretical framework of coopetition.

An examination of the personality traits of actors makes it possible to identify the individual characteristics which are most favorable with respect to certain managerial behaviors, to behavior relating to competition, cooperation and coopetition. For example, Collie et al. (1985) show that, in competitive situations, sportsmen, are much more

extroverted than individuals not subject to competitive pressure. Similar results are found in other sporting situations (Danio, 1985). Ross et al. (2003) also demonstrate that extraversion significantly explains the propensity of actors to coopetite. The social links between actors are thus governed by a combination of cooperative and competitive behaviors which seem related to personality. However, this intuitive relationship between the personality of actors and the desire and willingness to undertake coopetition have not been the subject of research at all in the field of management. It therefore seems useful to establish parallels between the interorganizational and intra-organizational approaches relating to coopetition, in order to analyze coopetitive behavior at an individual level. Thus, one of the objectives of the present work is to contribute to the research on coopetition. Our work aims at integrating the interorganizational and inter-individual approaches to coopetition. Accordingly, our research question is as follows: do personality traits influence the adoption of coopetitive managerial behavior? In order to answer this question, we conducted a survey on 165 managers who studied at a business school (undergraduate and graduate levels). A typology of the profiles of individuals was carried out according to the propensity to adopt competitive, cooperative or coopetitive behavior. The results indicate that, according to the managerial profiles, there are different personality traits which impact the dimensions of coopetition.

1. THEORETICAL FRAMEWORK

1.1 COOPETITION AND RELATIONSHIPS BETWEEN ACTORS

Coopetition is a combination of cooperative and competitive behavior between rivals (Nalebuff and Brandenburger, 1995; Bengtsson and Kock, 2000; Gulati et al., 2000). The concept of coopetition is thus an essentially plural one (Dagnino and Padula, 2002) and it is useful to distinguish between the various forms that it takes (Walley, 2007). Although often presented as opposites, competition and cooperation may reveal serious dysfunctions when they are approached in an alternative and non-simultaneous manner (Bresser, 1988). The combination of the two types of behavior enables both the development of an important advantage (Bengtsson and Kock, 2000) and the management of tensions generated by these two strategic postures (Clarke-Hill et al., 2003).

Nalebuff and Brandenburger (1995) use game theory to model coopetition in order to propose a balance between the realization of individual and collective interests. Lado et al. (1997) utilize game theory, socio-economic approaches and the resource-based view (RBV) in order to create a typology of relationships, in the context of the search for economic rent. Bengtsson and Kock (2000) use social network analysis and the RBV to identify coopetition, dyadic and paradoxical relationships, which are simultaneously cooperative and competitive, but relate to different activities. Variables measuring individual coopetition have been proposed by Ross et al. (2003).

The theory of business ecosystems (Moore, 1996) indicates that managers have a strong propensity to cooperate. Adopting both cooperative and competitive behavior simultaneously has various effects, including the stimulation of knowledge, acquisition of information and development of confidence (Lado et al., 1997). Coopetition thus aims at generating synergies and finding resources that are complementary or similar (Richardson, 1972). The intention is to establish an overall network of all partners in order to tap their knowledge, for mutual benefit (Me Chirgui, 2005).

Accordingly, cooperation becomes a means of improving competitiveness and searching for resources and complementary competences (Bengtsson and Kock, 2000). Within a business ecosystem, a dominant firm can choose coopetitive behavior in order to supplement its portfolio of resources. Moreover, many actors play the role of an intermediary, by proposing business integration between actors. A broker links the companies within a business network (Miles and Snow, 1986). Such a broker is also an architect (initiating and building the network), a moderator (coordinates and leads the network) and a facilitator ensures the sustainability of the network. The actors specifically seek cooperation in order to form and operate a network.

The theory of transaction costs (Williamson, 1985) indicates that there is generally a strong propensity to compete in industry. Accordingly, competition is beneficial for a market, while cooperation tends to be perceived as a market disequilibrium (Quintana-Garcia and

Benavides-Velasco, 2004). Thus, competition is the only means of achieving strong performance and market equilibrium.

However, the best partner may in fact be a competitor (Deming, 1993). Cooperation increases competitiveness (Lado et al., 1997) and opportunistic behavior can coexist with apparently contradictory values such as confidence. Thus, opportunist behavior can be exacerbated through adopting coopetitive behavior (Hamel, 1991). This objective of collecting information entails risks of information loss (Oxley and Sampson, 2004) and knowledge exploitation by other partners (Li et al., 2008). Collecting information and developing key competences can be one of the main motivations for engaging in coopetition (notion of *strategic lure*).

Performance is a key factor in measuring coopetition. There is a positive link between coopetition and performance (Lado et al. 1997; Bengtsson and Solvell, 2004). The balance between competition and cooperation is essential in the pursuit of performance (Pisano and Teece, 1989). The position of the firm in a network will influence its coopetitive behavior (Porter and Fuller, 1986). Actors subject to a degree of domination, who seek external resources, are coopetitive (Bengtsson and Kock, 2000). Coopetitors gain in performance, thanks to training and the acquisition of knowledge from associating with partners (Hamel, 1991).

Strategies of coopetition are implemented in order to improve performance. They are located at the crossroads between competitive advantage and a mobilization of key competences (Prahalad and Hamel, 1990), with the aim of improving the offering to customers (Porter, 1985). In fact, they specifically seek collaborative advantage (Miles and Snow, 1986; Thorelli, 1986).

The capacity to influence is an important factor in measuring coopetition (Porter and Fuller, 1986). Theories from the communication sciences indicate that such influence derives from a comparison of contexts, environment, etc. (Mucchielli, 2004). Freeman (1984) demonstrates that there is a multiplicity of forms of influence, such as deceiving a competitor as to one's real intentions and actions. The influence tends to understand the relations between

actors, in order to determine the competitive and cooperative stakes. The social structure of these relationships influences the behavior of individuals (Granovetter 1985; Uzzi 1997).

According to social network theories, relationships developed by individuals, both in the private and professional spheres, generate strong social structures. The formal and informal exchanges between rivals are numerous. Such processes, on the part of individuals, is observable in all the types of structures, such as multinationals or SMEs. However, beyond the contribution of the structural approach to inter-individual relations (Burt, 1992), it seems necessary to understand the individual mechanisms which impel actors to cooperate with one another.

1.2 COOPETITION AND THE PERSONALITY TRAITS OF ACTORS

In order to describe the personality of the actor, several theories can be used simultaneously. That of personality traits is used in this article, being the most accepted in social science research (Mount et al., 2005). Personality traits explain the personality of individuals, according to the dynamics that underlie behavior in a particular case. In other words, personality traits correspond to the specific behaviors in question (Asendorpf and Wilpers, 1998). Once the personality traits of an individual are known, it is generally possible to infer the behavior which is likely to arise in a particular situation (Stys and Brown, 2004).

The “big five” are the basis of several studies on the link between the personality of the actors and their work performance (Barrick and Mount, 1991; Tett, Jackson and Rothstein, 1991; Salgado, 1997). Clarke and Robertson (2005) formulate a causal link between certain personality traits and the occurrence of industrial accidents. For example, an individual with a low level of conscientiousness and who is rather self-centered will tend to be more heavily implicated in accidents. Personality traits are thus predispositions to behavior which supports the development of certain events or actions. In the case of coopetition, Simmons et al. (2001) compare two situations, one of competition and the other of cooperation. Using a study of 147 students, they asked the respondents to analyze the personality of two actors whose stories are told. One of these stories describes the competitive behavior of a student with respect to his colleagues and the other, the cooperative behavior of another student. The respondents

describe the personality traits which are supposed to correspond to the two actors described in the two situations. This reveals that competitive behavior is correlated with certain personality traits. By contrast, these traits are completely independent of those of the actor who cooperates. In other words, the personality traits attributed to the behavior of the actors depends on their relationship to others: either one of competition or of cooperation. We believe that a limitation of the study of Simmons et al. (2001) is the multiplicity of personality traits, which does not facilitate a comparison of results with those from other studies. In order to avoid this pitfall, we study the impact of personality on situations of coopetition with a structured model of personality.

Of the many concepts available to characterize the personality of an individual, we retained the big five (Digman 1990, Costa and McCrae 1992, Zhao and Seibert 2006), the total model measuring personality in terms of five traits: agreeableness, conscientiousness, extraversion, neuroticism (emotional instability) and openness to experience. This conceptual tool has the advantage of being widely tested in the field of psychology. For example, Robie et al. (2008) used the model to analyze managerial performance. The research using this model and which is applied to situations of coopetition includes that of Ross et al. (2003). Indeed, the authors show how the structure of individual personality traits impacts on their competitive and coopetitive behavior. A sample of 251 students reveals that certain personality traits from the big five have explanatory power with respect to dimensions simultaneously measuring the level of competition and coopetition between individuals.

Competition is explained by two personality traits: extraversion and the conscientiousness of an individual. In other words, the perception of others as competitors is pronounced in extroverted and conscientious individuals. It is possible to interpret this result as meaning that extroverted individuals turn to others to seize opportunities in order outpace and outperform their competitors. The fact of being conscientious reinforces the notion that what the particular individual does is better than what others can do. Ciavarella et al. (2004) show that conscientious contractors have a rate of corporate survival higher than that of non-conscientious contractors. Coopetition is also explained by extraversion, but additionally by the agreeableness of the actor. For the same reasons as those applying to competition, it is evident that, the more extroverted an individual, the more likely he is to coopetite. He would

turn to others and take advantage of opportunities, as well as use cooperation to seize opportunities. Coopetition is also explained by the agreeableness of an individual. In other words, a person who cares about others and sends positive signals to them is more likely to undertake coopetition, than a person who is more centered on his own interests.

Taking into consideration what precedes, we can propose the following hypotheses (See Figure 1).

Hypothesis 1: The more agreeable the managers, the more coopetitive their behavior.

Hypothesis 2: The more conscientious the managers, the more coopetitive their behavior.

Hypothesis 3: The more extroverted the managers, the more coopetitive their behavior.

Hypothesis 4: The more unstable the managers, the less coopetitive their behavior.

Hypothesis 5: The more open to the new experiences the managers are, the more coopetitive their behavior.

Insert Figure 1

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2. METHODS

2.1 DATA AND SAMPLE

The sample comprises 165 students (54.5% men) in training at a French business school (undergraduate and graduate levels). This population is highly relevant to our case study, because all these actors are on company salaries as future managers. They also have work experience of 3 years with their company. They occupy for the most part, functions with

middle responsibility and are involved in a situation of coopetition within their training company. This coopetition is effective also in the business school: they are in competition and, at the same time, cooperation, because of the group work that they have to return to business school professors.

2.2 STATISTICAL PROCEDURES USED FOR THE INVESTIGATION

The formation of the variables was carried out by the means of principal component analysis. The value of Cronbach's alpha measure of internal consistency is at least 0.5 for an exploratory study (Perrien et al., 1984; Larivet, 2002). The coefficient of correlation of the corrected items retained to measure the convergent and discriminant validity is at least 0.50 (Fornell and Larcker, 1981). Three groups were formed through typological analysis (hierarchical and nonhierarchical) on the basis of variables related to coopetition (VPR, VP, VPC, VCI and VCN). They were validated by a discriminant analysis, through determining the contribution of the variables which explain the membership of individuals in the groups.

Two discriminant functions were revealed by the analysis of canonical correlations (Wilks' Lamda) and an analysis of variance (ANOVA). A multiple step-by-step regression analysis was conducted in order to reveal the links between the independent and the dependent variables. The dependent variables tested, in turn, the relative value of coopetition: propensity to compete (VPR), performance (VP), propensity to cooperate (VPC), capacity to influence (VCI) and capacity to negotiate (VCN). The independent variables relate to the various personality traits: thinking (VR), creativity (VC), conscientiousness (VCC), emotional instability (NEU), extraversion (EXT) and agreeableness (AGRE).

2.3 VARIABLES

The questionnaire consists of eleven variables. All the tests of convergent and discriminating validities carried out on these scales of measurements proved to be valid.

2.3.1 Dependent variables: Measures of coopetition

The macro-variable “Competition”: MVCo (Table 1) is made up of 2 variables. “Propensity to compete” (VPR) measures the competitiveness on an actor in a relationship with others. “Performance” (VP) measures the level of performance wanted by the actors.

Insert table 1

The macro-variable “Cooperation”: MVCoo (Table 2) is made up of 1 variable. “Propensity to cooperate” (VPC) measures the cooperative capacity that an actor has in relation to another. We did not take into account one variable because of the weak Cronbach’s alpha of ($\alpha<0,5$).

Insert Table2

The macro-variable “Influences”: MVI (Table 3) is made up of two variables. “Capacity of influence” (VCI) measures the influence of an actor over others in terms of achieving his objectives. “Capacity to negotiate” (VCN) measures the negotiation skills.

Insert Table 3

2.3.2 Independent variables: measures of personality traits

The scales of the big five have been validated many times in the literature. The IPIP (International Personality Item Pool http://ipip.ori.org/ipip/), developed by principal researchers in the field, gathers the translations of items generally used in many languages, of which French is one. We wished to integrate only six items, so as not to overload our questionnaire and thus to maximize the response rate, because the target population has little time available for completing questionnaires. The second readings by eight researchers in the management sciences and by ten managers, ensured a good understanding of the selected items.

Openness to experience characterizes inquisitive individuals, who are in search of new experiences and wish to explore original ideas. An individual with a strong score on this dimension is creative, innovative, imaginative and unconventional. The macro-variable "Openness to experiences": MVO (Table 4) is made up of two variables. "Thinking" (VR) measures the capacity of the individual to conceptualize and think about difficult problems. "Creativity" (VC) measures the potential of innovation of the individual, his aptitude to conceive new solutions.

Insert Table 4

The "conscientious" macro-variable: MVC (Table 5) is made up of only one variable. "Conscientiousness" (VCC) measures the degree of organization of the individual, his perseverance and motivation to work towards specific goals. People with a weak score on this variable are disorganized and quickly become discouraged. The variable is not retained, because the Alpha is lower than 0.5.

Insert Table 5

The variable "Neuroticism": NEU (Table 6.) measures anxiety. Individuals with strong scores on the neuroticism dimension are prone to anxiety, depression, and impulsiveness. People with a weak score on this dimension are reliable, calm, and moderate.

Insert Table 6

The variable "Extraversion": EXT (Table 7.) measures the tendency of people to turn to the outside world. Extroverted individuals are conspicuous, dominant, energetic, active, talkative and enthusiastic; they like the life of groups and seek stimulation through contact

with others. People who are less extroverted prefer to spend more time alone and are rather reserved and independent.

Insert Table 7

The variable “agreeableness”: AGRE (Table 8.) measures altruism. People with a strong score on agreeableness are characterized by trust towards others, are altruists and care about others. On the other hand, individuals with a weak score on this dimension are described as manipulators, self-centered, wary and have little compassion.

Insert Table 8

2.3.3 Control variables

We introduced three variables of control in order not to under-specify the model: the sex, age and duration of work experience of respondents.

3. RESULTS

3.1 CONSTITUTION OF 3 GROUPS

The typological analysis is based on the five variables measuring coopetition: performance (VP), propensity to compete (VPR), propensity to cooperate (VPC), ability to influence (VCI) and capacity to negotiate (VCN).

Group 1 (n=38) represents the “coopetitors”. Such people have a propensity to compete (VPR) and to cooperate (VPC), which is high, compared to the average of the other

groups (respective barycenters 0.692 and 0.250). The capacity to negotiate (VCN) and the capacity to influence (VCI) yield the highest scores, compared to the total sample (respectively 0.855 and 0.578). The performance (VP) of these respondents is negative (- 0.178). The firms in the group are thus simultaneously competitive, co-operative, influential, negotiators, but they do not yield a high level of performance (see Figure 2).

Insert figure 2

Group 2 (n=46) represents the "competitors". These individuals have a strong propensity to compete (VPR; 0.498) and a low propensity to cooperate (VPC), compared to the other groups (- 0.948). The capacity to negotiate (VCN) is effectively equal to the averages of the other groups (0.074). The ability to influence (VCI) is at the lowest level, compared to the total sample (- 1.016). The performance (VP) of these individuals is negative (- 0.054).

The individuals in the group are competitive, not very cooperative, not very influential, fairly good negotiators, but they have a low performance level. (see Figure 3).

Insert Figure 3

Group 3 (n=75) represents the "cooperators". These individuals have the lowest propensity to compete (VPR; -0.636) and the strongest propensity to cooperate (VPC), compared to the other groups (0.452). The capacity to negotiate (VCN) is low (- 0.456), while the capacity to influence (VCI) is high (0.343). The performance (VP) of these individuals is positive.

The individuals in the group are not very competitive, but they are cooperative. They are influential, good negotiators and have perform strongly (see Figure 4).

Insert Figure 4

The analysis of variance (ANOVA) indicates that the variables relative to the propensities to compete and cooperate, and with the capacities to negotiate and to influence, differentiate clearly and significantly between the groups ($p<0,001$). The variable related to performance is not significantly different ($p>0,05$).

The weakest Wilks' lambda indicates that the capacity to negotiate (capacity to negotiate with the students - influ_negoetud: 0.627 and the capacity to be listened to - influ_opi: 0.689) is relevant for differentiating between the groups. It is the capacity to negotiate which leads to competitive behavior. Moreover, the tests F are significant ($p<0,001$). Thus, these variables discriminate well between the groups.

Two axes were determined ($p<0,001$ for all the χ^2) whose combination has a strong discriminatory power (0.851):

- a function referred to as "Collaborative Relations", is relatively positively associated with the propensity to cooperate and the capacity to negotiate. With a discriminatory power of 51.3%, this function is allocated to the groups of cooperators, and to a lesser extent with the coopetitors (respectively centroid of 1.075 and 0.479).

- a function called "Coopetitive Relations" is fairly positively associated with the propensities to compete and cooperate, as with the capacity of influence. With a discriminatory power of 33.84%, this function is allocated exclusively to the groups of coopetitors (centroid of 1.979).

The analysis of variance (ANOVA) indicates that the variables relating to agreeableness ($p<0,01$), extraversion ($p<0,001$), and neuroticism ($p<0,05$) distinguish between the groups. For agreeableness, only the cooperators have a positive score (0.270), compared to the other groups (coopetitors: -0.127, competitors: -0.357). H1 should thus be rejected. For extraversion, only the competitors yield a negative score (- 0.619), contrary to the other groups (coopetitors: 0.370, cooperators: 0.193). H3 therefore seems to be validated. For neuroticism, only the competitors yield a positive score (0.322), contrary to the other groups (coopetitors: -0.149, cooperators: -0.179). Hypothesis H4 seems to be validated.

The analysis of variance (ANOVA) indicates that the variables relating to conscientiousness ($p>0,05$), with thinking (VR) ($p>0,05$) and with creativity ($p>0,05$) do not differentiate between the groups. For conscientiousness, only the coopetitors yield a negative score (- 0.189) compared to the other groups (competitive: 0.022, cooperators: 0.114). Hypothesis H2 seems to be rejected. For thinking, the competitors have a negative score (- 0.118) compared to the other groups (coopetitors: 0.017, cooperators: 0.030). For creativity, only the cooperators have a negative score (- 0.080) compared to the other groups (coopetitors: 0.286, competitors: 0.013). Hypothesis H5 seems to be validated. In order to validate the hypothesizes definitively, an analysis of regression is necessary.

3.2 DETERMINANTS OF COOPETITION: PERSONALITY TRAITS

For the group of "coopetitors", no variable is related to performance, or to the propensities to compete and cooperate. On the other hand, extraversion explains the capacities to negotiate and to influence (respectively $p<0,05$ and $p<0,01$). The pleasant and agreeableness measures explain the capacity of influence of the individuals ($p<0,05$).

For the group of "competitors", extraversion, agreeableness and conscientiousness explain the performance of individuals (respectively $p<0,01$; $p<0,05$ and $p<0,01$). Extraversion also positively explains the propensity of the individuals to cooperate ($p<0,01$). Lastly, neuroticism has a negative impact on the capacity to negotiate of the actors ($p<0,05$).

For the group of "co-operators", thinking explains the performance of individuals ($p<0,01$). By contrast, thinking has a negative impact on the propensity to compete ($p<0,01$). Neuroticism also has a negative impact on the propensity of individuals to cooperate ($p<0,01$). Extraversion explains the capacity to negotiate ($p<0,05$).

Insert Table 9

DISCUSSION

Previous research has focused on inter-organizational approaches and attempted to categorize companies according to common profiles (Lado et al., 1997; Bengtsson and Kock, 2000). Other studies analyzed inter-individual relationships in order to determine the personality traits of individuals in competitive and cooperative interactions (Simmons et al., 2001; Ross et al., 2003; Ciavarella et al., 2004). Our results indicate that the study of coopetition, as presented in the inter-organizational literature, can be analyzed meaningfully at the individual level. This present study thus makes a contribution to closing the theoretical gap on coopetition, by supplementing the literature with three approaches: intra-organizational, inter-organizational and inter-individual.

In order to deal with this simultaneity of competitive and cooperative behaviors, (Nalebuff and Brandenburger, 1995; Bengtsson and Kock, 2000), groups of actors are used to demonstrate that coopetition has several dimensions (Walley, 2007). We identified three groups, namely: competitors, cooperators and coopetitors.

Competitors compete substantially, but cooperate little. Average negotiators, who have little influence are, of course, not very powerful actors. Nevertheless, three variables have an effect on the desire of individuals to perform: extraversion, agreeableness and conscientiousness. Indeed, in order to achieve their performance objectives, managers will open up to others (extraversion) and project positive signals to them (agreeableness). These two dimensions are related to the performance of the actors, since they make it more easy to obtain resources. These results are different from those of Ross et al. (2003), for which the agreeableness of young adults is negatively correlated with “hypercompetition” (the actor does not want to be in situation of high competition), and does not correlate with competition. This is due to a difference in sample (adult young people *as opposed to* future managers) and to our degree of analysis which distinguishes the profiles of actors from one another. Moreover, we show that manager musts be conscientious in their work in order to be powerful. The work of Mount and Barrick (1991) and Barrick and Mount (1991) show the

constancy of this variable in various situations of work performance. Clarke and Robertson (2005) demonstrate a negative relationship between not being conscientious and the occurrence of work accidents. Lastly, neuroticism has a negative impact on the capacity of managers to negotiate. Indeed, a stressed manager will be less able to negotiate effectively, than a manager who is not stressed (Lazarus, 1993).

The cooperators cooperate substantially, but compete little. Being very influential, they negotiate little and remain powerful. The relationships between independent and dependant variables are varied. Thinking has a positive effect on manager performance, but a negative impact on the desire to compete. Indeed, the spirit of these actors is such that it is the performance which counts, and not being better than others. Accordingly, neuroticism has a negative effect on cooperation between individuals. This personality trait does not support individual relationships, which require substantial confidence between the actors, so that they can be linked to one another. Lastly, the extroverted cooperators are more willing to negotiate than those who are introverted.

The coopetitors prove to be individuals who simultaneously undertake both competitive and cooperative actions with other rivals (Gulati, et al., 2000). Coopetition is the joint-meeting of competitive and cooperative behaviors. These actors are influential, tend to negotiate and are not very powerful. The model of the coopetitors indicates an asymmetry of power. In this coopetitive view, competing relations are more important than cooperative relations. The capacity of the individuals to influence people is explained by two traits: extraversion and agreeableness. This result is in conformity with previous studies (Ciavarella et al., 2004). Extraversion also has an impact on the capacity to negotiate. In other words, when the manager has a coopetitor profile, he is more able to negotiate and influence others when he is extroverted and agreeable, i.e. centered on others.

Our theoretical contributions lie in the construction of a typology of actors according to the propensity to cooperate. Validated statistically, the managerial profiles were identified according to their degree of competition, cooperation and coopetition. Our research is applied to inter-individual relationships, thus departing from former research which is more centered around inter-organizational approaches. The study sheds light on the specific personality traits

which support certain behaviors related to the propensity to compete, cooperate, strive for performance and is related to the capacities to negotiate and to influence. In addition to this theoretical application, a manager can, in practice, define the capacity to adopt the coopetitive behavior of these teams according to the personality traits of his members. Accordingly, it will be easier to choose competitive, cooperative or coopetitive collaborators.

Our study has a number of limitations. First of all, we chose a quantitative method using a questionnaire. The sample chosen is limited to junior managers only. This study is not easily applicable to other types of managers, specifically top managers, and other leaders. Moreover, this static study should be supplemented by a dynamic approach and, in particular, by case studies. The analysis of mechanisms and processes relating to the coopetition between individuals seems essential and should constitute an important future channel for investigation. The study of levels of centrality *within* teams could have a strong influence on coopetitive behavior. Thus, what are the relevant processes, both cognitive and social which encourage individuals to adopt coopetitive behavior? Are some individuals predestined to coopetitive behavior, for example, through social networks? Are there individual multiple behaviors enabling cooperation on some points and competition on others?

In order to overcome these limitations, the authors plan to continue this research using other populations which have already been tested in greater detail. Moreover, it will be important to integrate control variables in futures quantitative researches such as: company size, type of industry, financial situation, etc.

Finally, more qualitative work on types of coopetitors in projects groups within the space industry has already commenced to have a dynamic approach of coopetitive relationships.

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TABLES

Table 1: Macro-variable « Competition » (MVCo)

Propensity to compete Variable (VPR)				
Items	**Labels**	**Cos^2**	**Var(*)**	**α**
I regard the students in my class as competitors	concu_UB	0,705	50,28 %	0,760
I perceive the other students as rivals	concu_rivaux	0,739		
I never share knowledge and information with other students	concu_partpas	0,793		
There is strong competition between myself and the other students in the class	concu_rivalite	0,557		
Performance Variable (VP)				
I want to be the most powerful student in the class	concu_perf	0,888	17,21 %	0,783
I compete with certain students in my class	concu_competUB	0,555		
My aim is to earn better grades than the other students	concu_note	0,868		

(*) Variance explained

Table 2: Macro-variable « Cooperation » (MVCoo)

Variable - propensity to cooperate (VPC)				
Items	**Labels**	**Cos²**	**Var(*)**	**α**
I regard other students as collaborators	col_etud	0,738	46,11%	0,851
Other students constitute my personal network for my future job search	col_emploi	0,767		
I share knowledge and information with other students	col_part	0,712		
My aim is to work as much as possible in a team	col_equi	0,794		
I like working in a group	col_gpe	0,674		
My fellow students today are my professional partners of tomorrow	col_part	0,777		
Group work improves my individual performance	col_perf	0,661		
For me, working with other students is an asset (division of labor, etc)	col_atout	0,687		
Variable non-retained because α<0,5				
I am used to working with the same students	col_mmetu	0,719	13,50%	0,439
I have a particular field of expertise (for example, fluency in a foreign language, a particular type of software, etc) which other students can draw on	col_expert	0,733		

(*) Variance explained

Table 3: Macro-variable « Influence » (MVI)

Capacity to influence **variable (VCI)**				
Items	**Labels**	**Cos^2**	**Var(*)**	**α**
I try to get students to accept my opinions	influ_manip	0,787	52,94 %	0,872
The students regard me as an influential person	influ_persinflu	0,595		
I carry out specific actions to influence the decisions of other students	influ_action	0,819		
I try to get the other students to adopt my point of view	influ_point	0,822		
I influence the decision making of other students	influ_decis	0,806		
Capacity to negotiate **variable (VCN)**				
In general, other students listen to my opinions	influ_opi	0,826	14,32 %	0,708
I can negotiate well with the professors	influ_negoprof	0,701		
I can negotiate well with other students	influ_negoetud	0,742		

(*) Variance explained

Table 4: Macro-variable « Openess to experience » (MVO)

Variable Thinking (VR)				
Items	**Labels**	**Cos²**	**Var(*)**	**α**
I have a rich vocabulary	ouv_voca	0,713	40,11%	0,545
I am quick to understand things	ouv_rapid	0,625		
I spend time reflecting on things	ouv_refle	0,657		
Variable Creativity (VC)				
I have a vivid imagination	ouv_imag	0,713	22,44%	0,560
I have excellent ideas	ouv_excelid	0,625		

(*) Variance explained

Table 5: Macro-variable « Conscientiousness » (MVC)

Conscientiousness Variable (VCC)				
Items	**Labels**	**Cos²**	**Var(*)**	**A**
I am always prepared	cons_aff	0,767	48,68%	0,856
I pay attention to detail	cons_detail	0,589		
I often forget to put things back in their proper place[1]	cons_chose	0,718		
I like order	cons_ordre	0,729		
Non retained variable because α<0,5				
I follow a schedule	cons_horaire	0,691	20,25%	0,460
I am exacting in my work	cons_trav	0,641		

(*) Variance explained

[1] Some items are reverse-coding.

Table 6: Variable « Neuroticism » (NEU)

Items	Labels	Cos^2	Var(*)	α
I get stressed out easily	instab_stress	0,713	66,50%	0,748
I am relaxed most of the time	instab_tps	0,625		
I worry about things	instab_chose	0,657		

(*) Variance explained

Table 7: Variable « Extraversion » (EXT)

Items	Labels	Cos^2	Var(*)	α
I do not talk a lot	extra_parlepas	0,527	58,50%	0,820
I keep in the background	extra_ecart	0,656		
I start conversations	extra_conv	0,558		
I talk to a lot of different people at parties	extra_parlebcp	0,655		
I do not like to draw attention to myself	extra_attent	0,527		

(*) Variance explained

Table 8: Variable « Agreeableness » (AGRE)

Items	Labels	Cos^2	Var(*)	α
I am interested in people	agre_intaut	0,558	62,62%	0,800
I sympathize with other's feelings	agre_sentiaut	0,646		
I take time out for others	agre_tpsaut	0,689		
I feel others' emotions	agre_emotaut	0,612		

(*) Variance explained

Table 9 : Results of regression

β & sig.	Performance (VP)			Competition (VPR)			Cooperation (VPC)		
	Coopetitors	**Competitors**	**Cooperators**	**Coopetitors**	**Competitors**	**Cooperators**	**Coopetitors**	**Competitors**	**Cooperators**
Constant		0,372(**)				-0,638(***)			
Neuroticism (NEU)									-0,279(**)
Extraversion (EXT)		0,487(**)						0,369(**)	
Thinking (VR)			0,315(**)			-0,146(**)			
Creativity (VC)									
Agreeableness (AGRE)		0,411(*)							
Conscienciousness (VCo)		0,389(**)							
R^2		0,335	0,113			0,077		0,131	0,109
Adjusted R^2.		0,284	0,101			0,064		0,109	0,096
Estimated Std Error		0,811	0,934			0,536		0,898	0,745
F		6,554(***)	9,056(**)			5,911(**)		6,162(**)	8,654(**)

(***) p<0,001; (**) p<0,01; (*) p<0,05; (ns) none significant

β & sig.	**Negotiation (VCN)**			**Influence (VCI)**		
	Coopetitors	**Competitors**	**Cooperators**	**Coopetitors**	**Competitors**	**Cooperators**
Constant	0,773(***)	0,191(ns)	-0,515(ns)	0,469(***)		
Neuroticism (NEU)		-0,324(*)				
Extraversion (EXT)	0,268(*)		0,223(*)	0,377(**)		
Thinking (VR)						
Creativity (VC)						
Agreeableness (AGRE)				0,219(*)		
Conscienciousness (VCo)						
R²	0,121	0,096	0,057	0,466		
Adjusted R².	0,095	0,073	0,044	0,435		
Estimated Std Error	0,631	0,929	0,852	0,505		
F	4,783(*)	4,341(*)	4,297(*)	14,845(***)		

FIGURES

Figure 1: Theoretical Model

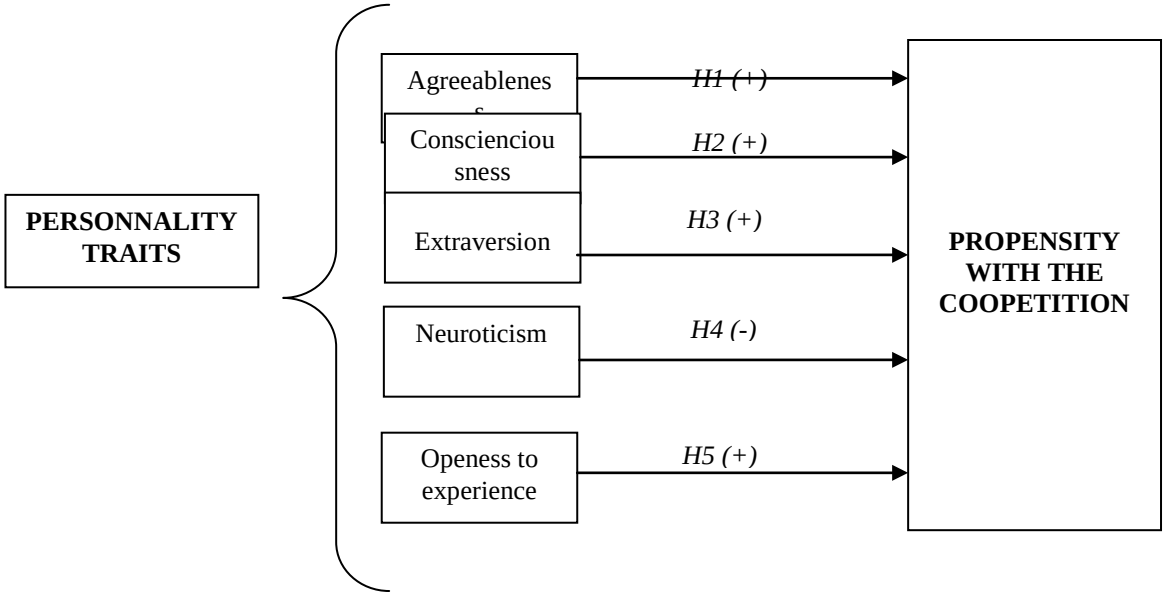
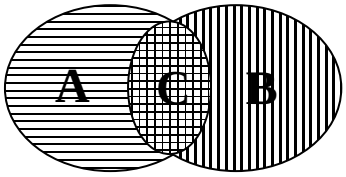
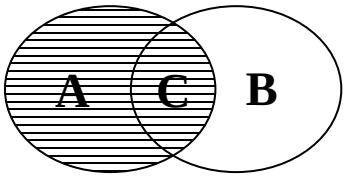


Figure 2: The « coopetitors »



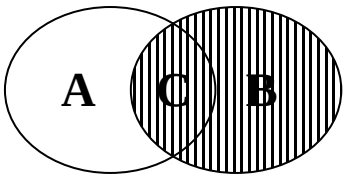
A: competitive actions, B: cooperative actions, C: coopetitive actions

Figure 3: The « competitors »



A: competitive actions, B: cooperative actions, C: coopetitive actions

Figure 4: The « cooperators »



A: competitive actions, B: cooperative actions, C: coopetitive actions