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**COOPETITION RESEARCH
LANDSCAPE – A SYSTEMATIC
LITERATURE REVIEW 1997-2010**

Abstract

This paper adopts the approach of systematic review and provides a synthesis of the literature on coopetition in management and strategy. Our review focuses first on the phenomenon features, and offers a consensus-based definition. Next, we address the theoretical frameworks used by researchers and examine the linkage with related fields in order to outline the distinctive lines of coopetition versus alliances. Then we review the empirical foci adopted in published work to identify both preferred and underexplored areas of extant academic attention. We draw a research agenda oriented at further exploration of coopetition morphology, elucidating the stability issue and examining coopetition along the antecedents-process-outcomes trail.

Keywords: *coopetition, management, strategy, literature review.*

Introduction

Coopetition has enjoyed a sustained rise to recognition across management literature (Yami, Le Roy, Castaldo, Dagnino, 2010; Gnyawali, Park, 2011). The term refers to the simultaneous use of cooperation and competition in order to achieve better collective and individual results. Coopetition helps firms to improve performance (Le Roy, Marques, Robert, 2009), increase market share (Meade, Hyman, Blank, 2009) or to develop new technologies and products (Quintara-Garcia, Benavides-Velasco, 1996). Theoretical contributions suggest that coopetition is the best strategic option for firms (Brandenburger, Nalebuff, 1996), and takes account of both competitive and collaborative advantages (Lado, Boyle, Hanlon, 1997).

There are several reasons for undertaking a literature review on coopetition. Firstly, the term has been coined by managers who acknowledge the need to use both cooperation and competition with the same set of firms. Hence, the relevance of coopetition is recognized since its inception. Secondly, the growing body of literature offers the opportunity to develop coopetition theory further than it has been done so far. Thirdly, the delimitation of coopetition versus related concepts remains unclear. Coopetition extensively draws on cooperative interorganizational relationships literature, making the concept's boundaries blurry. Specifically, it remains unclear whether coopetition is a separate phenomenon, with distinctive conceptual and methodological grounds, or whether it

is a combinative concept. Combinations typically draw on concepts from root fields, which inevitably leads to paradigmatic tensions. Fourthly, coopetition phenomenon recognition remains relatively weak in mainstream management literature so that the concept is still promising instead of becoming accomplished.

The aim of this research is to address the state of the art and emerging research topics within the coopetition literature. The paper is organized in four sections. We begin by outlining the systematic review method (Tranfield et al., 2003) and provide key bibliometrics on the reviewed literature. The second section highlights the concept's origins and the features attributed to coopetition in the literature. On that base we propose a coopetition definition, as a literature based consensus. Then, we examine the theoretical lenses used by researchers to study coopetition. This helps to point out to differences against alliances and unveil under exploited approaches. Next, empirical studies extracted from citation databases are reviewed, and an up-to-date analysis of the emerging trend is tabulated. This reveals a number of gaps in terms of industries, levels of analysis, and key topics of scrutiny. Finally, a critical discussion on the emerging research agenda is developed.

1. Method

A growing recognition of literature review rigour's importance stems from recent published works (Lee, 2009). Systematic literature review provides an audit line for reviewing literature, as it uses databases selection and search in order to explicitly demonstrate how relevant literature has been extracted from the existing body of literature. Further, it uses bibliometrics to identify trends and structures within the publications under scrutiny. In this study we draw on frequency analysis in order to identify coopetition features and citation analysis. Then, we exploit critical literature review techniques in order to draw conclusions on coopetition research, identify gaps in current understanding and recommend further research agenda.

Most of the existing contributions acknowledge coopetition as a complex and dynamic phenomenon (Padula, Dagnino, 2007). Importantly for this study, coopetition is being increasingly popular among scholars and managers because it takes account of real-life complexity in inter-firm relationships and expands the strategist's view beyond a single firm scope (Brandenburger, Nalebuff, 1996). Table 1 illustrates the increasing number of coopetition published work ranked in the Social Sciences Citation Index (SSCI) related to strategy and management.

Table 1. Coopetition research publication dynamics

Year	Number of papers published
1997	1
1998	1
1999	2
2000	2
2001	2
2002	3
2003	5
2004	5
2005	3
2006	5
2007	14
2008	14
2009	17
2010	25

The selection of published work for our study consisted of three phases (Tranfield et al., 2003). Firstly, we identified the databases that hold comprehensive citation lists for management and strategy: Ebsco, Elsevier/Springer, Emerald, Proquest, and ISI Web of Knowledge. Secondly, we searched the databases for coopetition studies explicitly related to business and strategy by applying a key word search: coopetition/co-opetition located in the title, abstract or key words of papers published in English from 1997 to 2010. The use of different orthography appeared necessary, as there is still no consensus around the spelling, and authors use both. Thirdly, we have excluded papers which limited the use of coopetition to the keyword, but did not refer explicitly to the concept or did not investigate it further. We have also excluded book reviews and editorial introductions from the initial database, as well as duplicate papers appearing in the databases. Finally, we restricted the study to work published in English, even though a substantial literature is available in French, Spanish, Polish or other European languages.

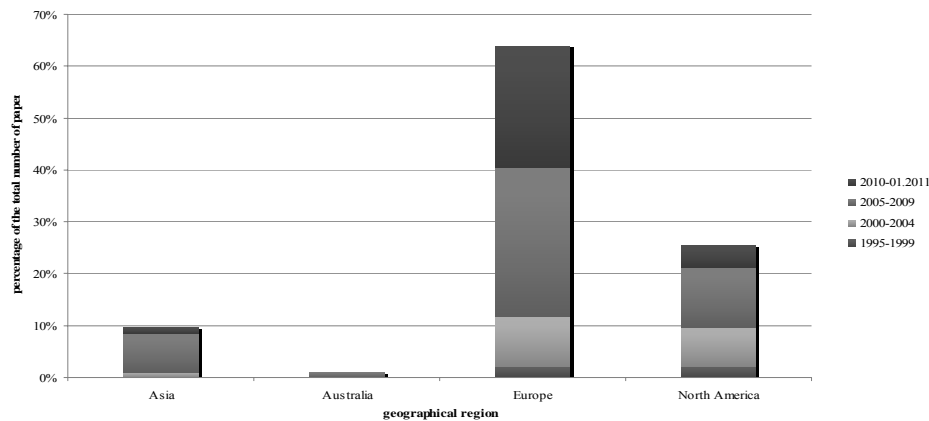
Table 2. Three-phase selection used in the research

	Selection criteria	Number of papers
I selection	identified papers on coopetition	523
II selection	English and full text papers supplemented with additional articles from the external databases	245
III selection	exclude duplicate papers	167
	coopetition issues as a leading research problem	106
	extensively described issues of coopetition	96
	sector approach of the empirical research	82

Thus, from an initial dataset of 523 papers we retained 96 for our study, while for 82 a clear industry focus could have been identified (Table 2). In order to triangulate these results the selection procedure has been conducted independently by another researcher.

Coopetition has been particularly studied by European scholars, as 2/3 of published work is affiliated to European research institutions. American papers, come second with 24% followed by Asia was 9%, and Australia just 1% of all the published papers.

Figure 1. Geographical distribution of coopetition papers affiliation



A forward citation analysis allows to identify the most cited papers, and definitions adopted by researchers (Table 3). While most papers come from the EU, the top 5 papers in terms of citation display US affiliations, with the notable Scandinavian exception (Bengtsson, Kock, 2000). The citation analysis mitigates frequency analysis results. While European publications dominate in number, they appear as less influential in the field. Also, the number of coopetition publications remains quite limited in the top journals.

Table 3. Top 5 cited papers and related views on coopetition nature

Authors	Year published	Number of citations	Coopetition definition
1	2	3	4
Tsai	2002	145	simultaneously cooperative and competitive behaviour
Gnyawali, Madhavan	2001	117	the relevant network consisting of formalized cooperative relationships among competitors that involve flows of assets, information and status

table 3. cont.

1	2	3	4
Bengtsson, Kock	2000	82	This relationship can include both economic and non-economic exchanges. Power in the cooperative side of the relationship is based on functional aspects in accordance with the value chain. In the competitive side of the relationship, power is based on the actor's position and strength.
Luo, Slotegraaf, Pan	2006	28	Joint occurrence of cooperation and competition across functional areas within a firm
Levy, Loebbecke, Powell	2003	21	Simultaneous cooperation and competition may aid competitiveness by knowledge sharing, but any exchanged knowledge may be used for competition.

2. Coopetition – a multifaceted concept

2.1. Coopetition term provenience

The etymology of the term coopetition refers to competition and cooperation appearing in the same time between the same actors. The literature widely locates its origins in the 1990' when R. Noorda a former CEO of Novell (Padula, Dagnino, 2007) used it to grasp the nature of relationships between competitors. Others trace it back to 1913 (Cherington, 1976) when Kirk S. Pickett, who used it to describe the relationships among his 35,000 oyster dealers, stated: “You are only one of several dealers selling our oysters in your city. But you are not in competition with one another. You are co-operating with one another to develop more business for each of you. You are in co-opetition, not in competition”. Then R. Hunt reintroduced “co-opetition” in the Los Angeles Times in 1937, but none of these early introductions received any public attention (Hunt, 1937; Yami, Le Roy, 2010). In the management literature A. Brandenburger and B. Nalebuff (1996) have popularized coopetition. They claimed it to be more than a linguistic blend of cooperation and competition. Inversely, coopetition is to be seen as a new mindset, a process, or a phenomenon combining cooperation in order to create a bigger business pie, while competing to divide it up (Brandenburger, Nalebuff, 1996).

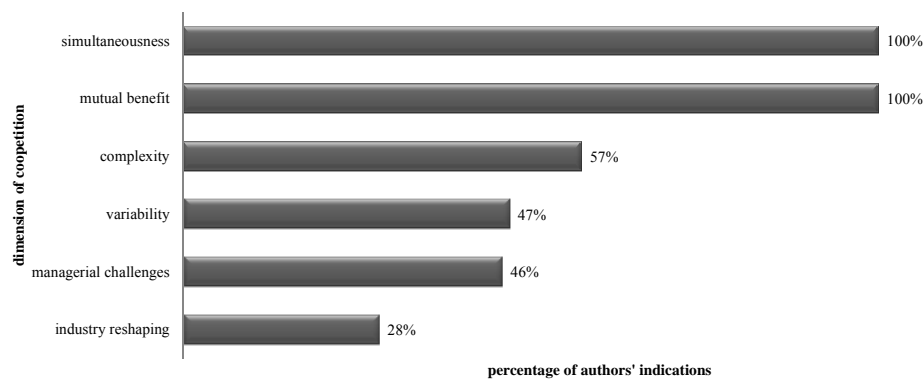
Importantly the term coopetition has been coined by managers, which indicates an empirically grounded need to grasp the complexity of real life relationships between firms in an comprehensive way, beyond competition or collaboration alone.

2.2. Elementary facets of coopetition

We have conducted a frequency analysis in order to identify the most popular facets of coopetition and provide a synthetic view. We focused on coopetition definitions adopted in the papers. Authors's descriptions allowed us to identify the features of coopetition, and coded them. This part of our analysis was conducted by two researchers separately. Finally, the frequency analysis was conducted. In result, we have identified six distinctive features attributed to coopetition.

Interestingly all 136 authors of the 96 papers we analysed unanimously recognized (1) simultaneous cooperation and competition, and (2) mutual benefits stemming from competition, as the key characteristics of the phenomenon of coopetition. Authors also referred to additional features such as: (3) complexity with 57% of indications, (4) dynamics with 47%, and (5) managerial challenges scoring 46%. Finally, 28% of the authors identified (6) industry reshaping as a trait of coopetition (Figure 2).

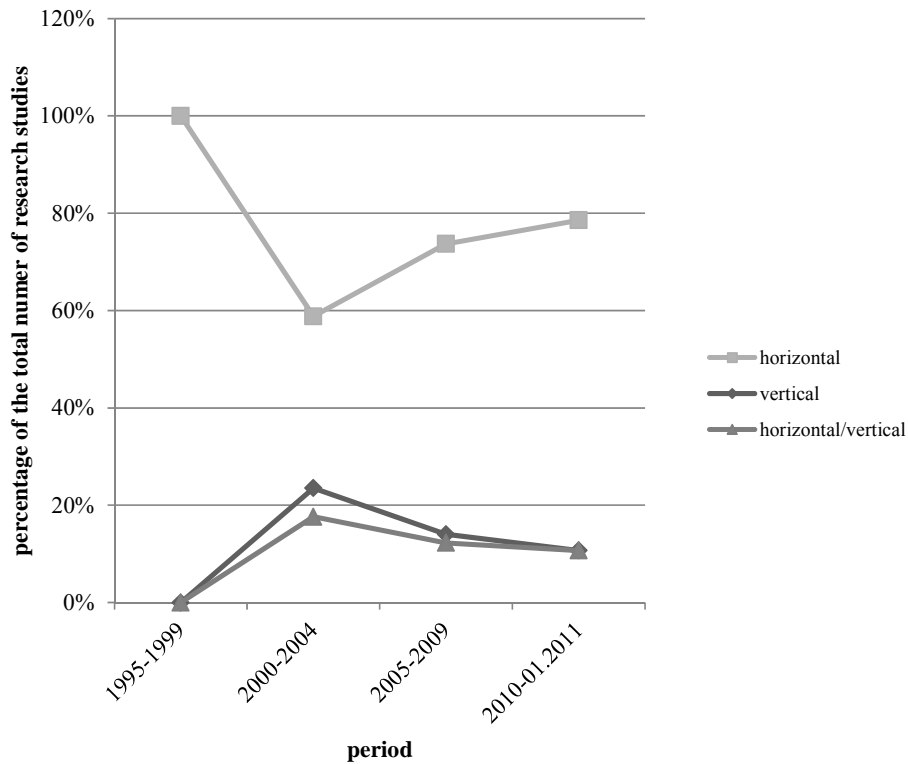
Figure 2. Coopetition concept features frequency distribution



The frequency analysis allows to draw a generally accepted definition of coopetition, focused on the key traits of a distinct class of phenomena. We believe that our systematic literature review justifies the claim that coopetition is a mutually beneficial for involved actors, simultaneous cooperation and competition interplay. Our data indicate a shared view of researchers that coopetition is ontologically distinct through these two features, which are not found in any other concept. It clearly delineates coopetition from other types of interorganizational relationships. We discuss each feature appearing in the literature below.

A fundamental feature of cooptation is the simultaneity of competitive and cooperative relations between actors (Luo, 2007). Cooptation is therefore distinct from sequential cooperation and competition, where one relationship follows the other between the same firms, but not in the same time. Consequently, the study of horizontal relations between cooptitors dominate in number of papers, achieving 74% of the total. Just 14% deal with vertical relations. This stands in contradiction to M. Galvagno and F. Garraffo (2010), who claim that “most research and theory building on cooptation has focused on vertical relationships among firms (that is, channel relationships), ignoring horizontal relationships (that is, direct competitors)”.

Figure 3. Type of cooptation under study



Extant research suggest that the competitive and collaborative behaviors strongly impact each other (Mariani, 2007; Tidstrom, 2008). For instance, the upsurge of competition within a collaborative agreement alters the relationship

and hampers its performance. Similarly, fostering collaboration within competitive relationships alters market structure and provides advantages to competitors. These influences follow each other. Untangling the reciprocal influence requires a process approach, event story building and path identification.

The aim of coopetition is to provide benefits for all actors involved. Most frequently, through pooling resources competitors are able to achieve a competitive advantage over other market actors (e.g. Bengtsson, Kock, 2000, p. 424; Wang, Krakover, 2008, p. 128; Walley, 2007, p. 17; Luo, 2007, p. 130). “Coopetition emphasizes the mixed-motive nature of relationships in which two or more parties can create value by complementing each other’s activity” (Bonel, Rocco 2007, p. 71). Beyond the synergistic use of resources and complementarity advantages, restricted access to resources provides coopetitors with an edge over other market players.

The strategic behavior of coopeting firms is oriented both at the advantages of stimulating competition and complementary resources access through cooperation (Robert, Marques, Le Roy, 2007). This facet of coopetition captures rent maximization by managers who basically want to 'have the cake and eat the cake' at the same time. Game theory offers theoretical explanations that a repeated game can provide better yields for players if they exchange information and align behaviors (Okura, 2007). While researchers provide theoretical insights and empirical evidence on how coopetition generates value, the rent appropriation process remains relatively underexplored. Few studies (Bonel, Pellizzari, Rocco, 2008) have explored the risks rising from cooperative relationships. Yet, it holds promise of a better understanding of the phenomenon. There is a clear gap in our understanding on why coopetition is stable over time between the same actors despite rent appropriation related tensions, typical to interorganizational relationships.

Researchers have recognized in more than half of published work that “coopetition strategy is a multidimensional and multifaceted concept that assumes a number of different forms and requires multiple levels of analysis”. (Chin, Chan, Lam, 2008). Therefore, different levels of analysis can be identified in the literature: network (Gnyawali, Madhavan, 2001), supply chains and value networks (Peng, Bourne, 2009), firms level for direct competitors (LeTourneau, 2004), and groups/departments/subsidiaries (Tsai, 2002) for firms. There is also a distinction of internal coopetition, within business ecosystems, versus external, which occurs between business ecosystems (Gueguen, 2009).

A clear majority of existing research is focused on the interorganizational level of analysis achieving 73% of analyzed papers, while dyadic relations are introduced in 42% of the total. Both of them are also divided into simple or

complex relations (Padula, Dagnino, 2007; Robert, Marques, Le Roy, 2009). Inversely, network level studies, as well as firm level studies remain relatively few. This leaves network roles, the impact of interfirm linkages structures or processes beyond the scope of understanding. Also, intrafirm issues such as capabilities (Quintana-García, Benavides-Velasco, 2004), systems (Levy, Loebbecke, Powell, 2003) or communication are relatively underexplored. Interestingly cooperation has been found at different levels of analysis, which suggests it is disconnected from any particular type of relationship. This manifestation at various levels makes cooperation a phenomenon, much more than just a relationship feature.

Cooperation relations are by nature constantly evolving, which generates a significant interest in cooperation dynamics. This concerns both the intensity of cooperation relationships and the length of period for which they are concluded. The market environment in which firms operate has significant impact on cooperation dynamics (Rusko, 2011; Luo, 2007). “[...] the content of a relationship can change from competition at one point of time, to cooperation, or coexistence, or co-competition at another. Moreover, some relationships can grow stronger, leading to a termination of weaker relationships” (Bengtsson, Kock, 1999).

The literature often labels cooperation as paradoxical (Lado, Boyd, Hanlon, 1997). Much more than a dialectical perspective of opposing forces balance or *coincidentia oppositorum* (Padula, Dagnino, 2007), paradoxes refer to understanding what the equilibrium really is, and call for a clear identification of the many different forces which may impact cooperation. The equilibrium approach resides on an ideal state of relations between actors, in spite of forces impacting on them. In fact “theorist focus on equilibrium arguments in order to more fully understand the dynamics of systems that are not in equilibrium” (Barney, 2001). For instance, the initially proposed nature of cooperation generates positive-sum games for firms (Brandenburger, Nalebuff, 1996). Theoretical models offer ideal-type behaviors, allowing for empirical studies to unveil why this ideal equilibrium is not achieved (Okura, 2008), as well as descriptive empirical studies which exemplify success stories of cooperative action (Gueguen, 2009). In sum, this approach assumes a predefined, or anticipated equilibrium which is compared to actual interorganizational relationship dynamics.

Interestingly, 23% of papers in our study highlight relationship dominance within cooperation. No balance between competition and cooperation is implied, be it in terms of intensity or magnitude. Notably cooperation has been categorized as: (a) cooperation-dominated relationship, (b) equal relationship, (c) competition-dominated relationship (Bengtsson, Kock, 2000; Rusko, 2011). Ritala,

Hallikas and Sissonen (2008) name them as intensive competition cooperation or intensive cooperation competition. Luo (2005) expands this typology by adding to dominated relationships two types of balanced ones: low-low and high-high intensity of collaboration and competition (Table 4).

Table 4. Coopetition types regarding relationships intensity and balance

		Collaboration	
		<i>high</i>	<i>low</i>
Competition	<i>high</i>	high intensity cooperation	competition dominated
	<i>low</i>	cooperation dominated	low intensity cooperation

This simple classification of possible cooperation types calls for more detailed studies. One thread of research should focus on the relationship intensity. Beyond a measurement challenge, more intermediate intensity degrees can be identified: medium, semi-strong and so on. As a result the typology matrix would expand to cover nine, sixteen or more theoretical cooperation manifestations, to be further empirically examined. A second thread of further scrutiny needs to explore cooperation stability issue over time. While equilibrium perspective appears as useful for balanced (hi-hi or low-low) cooperation studies, there is a gap in our understanding of unbalanced relationships. Dialectical perspective would suggest them to be inherently unstable or short-term, but empirical evidence shows that firms may remain in unbalanced or dominated cooperation for extended periods of time.

The nature of cooperation is reflected in considerable managerial challenges that competitors have to face in order to succeed. Researchers (Zineldin, 1998) underline that adequate competence and ambidexterity of the management team are key factors in the success of a cooperation strategy. "Co-opetition involves two different logics of interaction. On the one hand, there is a hostility due to conflicting interests and, on the other hand, it is necessary to develop trust and mutual commitment to achieve common aims" (Quintana-García, Benavides-Velasco, 2004).

Moreover, some authors add a high level of managerial involvement in the process of the preparation, implementation and coordination of the cooperation as equally important factors in the success. What seems to be undervalued here is the matter of trust between cooperating competitors. Despite their long-term habits, on the one hand managers have to make room for cooperative relations which, without trust and a general positive atmosphere, cannot exist, while on the other they have to know the lines that they cannot cross as regards the close-

ness of the relationship (e.g. protection of trade secrets) (Chin, Chan, Lam, 2008). Similarly to firm level studies, managerial challenges address the relevance of coopetition research in terms of success or failure factors. While theoretical directions of scrutiny have been indicated in the literature, empirical studies remain few.

While coopetition has originally been related to the value creating network (Brandenburger, Nalebuff, 1996), only a limited number of papers address this feature. Coopetition strategies are used by firms in response to increasing environment volatility (Baumard, 2009). Also, if a firm creates cooperative relations, others imitate this strategy. Similarly, market/industry regulations, customs, or the environment can push market participants to launch coopetition strategies (Mariani, 2007; Zineldin, 1998). Thus, industry reshaping is characterizes coopetition: “managers must monitor and analyze environmental changes to assess the need to engage in co-opetition, and if co-opetition is intensifying in the industry, they should explicitly consider competitors when pursuing technology intensive alliances” (Gnyawali, Park, 2009). The creation of a new industry structure, either by including complementors or by reshaping the inter-firm relationships is theoretically a feature of coopetition. However, very few studies adopt industry level of analysis, leaving this particular coopetition feature underexplored.

3. Theoretical lenses for coopetition studies

Emerging research threads typically exploit more established theoretical frameworks. Drawing heavily on related fields might be a ‘Faustian bargain’, “if a research community fails to estimate the consequences of becoming too bound with related fields” (Agarwal, Hoetker, 2007). We examine in this section the links of coopetition studies with theoretical frameworks addressing relationships between firms. We extend prior research on interorganizational literature (Oliver, Ebers, 1998) by analyzing how coopetition studies exploit theoretical references. The distribution of underpinning theoretical perspectives, according to what authors themselves claim is illustrated in Table 5.

Table 5. Coopetition theoretical background

Back-ground	Game Theory	Alliances	TCE	RBV	Networks	Competition	Evolutionary Economics	Other
% of articles	39%	83%	8%	35%	23%	24%	9%	3%

Note: The sum exceeds 100% as authors typically use more than one theoretical framework in their studies.

A closer analysis of the theoretical frameworks adopted by authors shows that three perspectives are prevailing: alliances, competition and network theory. We devote less attention to the resource based view and to game theory, as authors use those reference frameworks as auxiliary. More specifically resource based rationale is mostly deployed to justify interorganizational relationship formation and competitive advantage achievement. Game theory in turn provides a strong rational choice assumption to model collaboration between rivals as the best strategic option.

3.1. Alliances perspective on coopetition

The alliances literature appears a prevailing background, scoring more than 83% of all studies. Alliances are defined as voluntary arrangements between firms involving exchange, sharing or co-development of products, technologies or services (Gulati, 1998). The body of alliances literature focuses on: the formation rationale, the dynamics, and the outcomes – specifically performance of alliances and involved firms (Oliver, Ebers, 1998). Coopetition research can be analyzed along those axes.

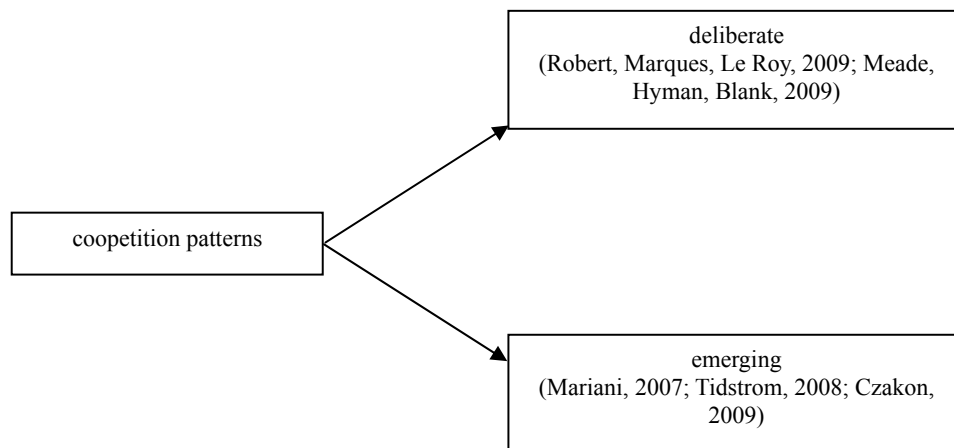
The literature provides several explanations for coopetition use by firms, such as resource access, joint resource exploitation or competitive pressures. There is evidence of positive relationship between cooperative strategies in jointly bidding for resources and financial performance (Robert, Marques, Le Roy, 2009). An empirical study of the soft drink industry promotions shows that brand interdependence shapes market structure. Strong bottlers' promotions allow to increase a relative market share of the promoted brand, and at the same time to increase the relative market share of strong bottlers at the expense of weak bottlers (Meade, Hyman, Blank, 2009). Technology development in the LCD panel industry has proven to yield for collaborating competitors: Sony and Samsung. Their combined market share has risen from challengers into market leaders thanks to coopetition in R&D (Gnyawali, Park, 2011).

The view that coopetition focuses on the interplay between cooperative and competitive actions of the value network members implies a dynamic approach and encourages the study of development patterns. Two distinct epistemological stances are widespread in management studies for elucidating dynamic phenomena: equilibrium, and evolutionary theories (Barney, 2001). Equilibrium stance has been described in detail in Section 2.2.

The evolutionary approach to coopetition dynamics study adopts a different view, aiming at identifying patterns of change. Extant research has unveiled

evolutionary patterns in cooperative relationships: a) deliberate development characterized by intentional rent seeking at both individual and collective level, where competitor's actions are relatively clear or even announced; b) emerging, which refer to the upsurge of unilateral rent seeking behaviors within cooperative settings, mostly unplanned before the cooperation start.

Figure 4. Competition strategy development patterns



The deliberate thread of research suggests that cooperation is a strategy aiming at above average earnings. Typically those are referred to as competitive advantage, yet studies provide evidence that focal actors performance improve whenever competitors are able to generate positive interdependency.

The second patterns of cooperation between firms is emergence. Development paths identification uses longitudinal case studies unveiling series of events. Under this assumption competition emerges between partners when cooperative relationships are subject to tensions, conflict or discrepancies. There is evidence that cooperation can be imposed on otherwise competing actors by the institutional environment, such as a policy maker (Mariani, 2007). Actors find themselves strongly encouraged to forge a more cooperative value chain model, where resources and information are better shared. Inversely, there is also evidence that power asymmetries and unfair value distribution among actors, may lead to the emergence of competition within a cooperative framework, as shown in two Finnish industries: transportation and natural product (Tidström, 2008), and the Polish banking franchise system case (Czakon, 2009). The starting point of those empirical studies is a cooperative settings, where opportunism, conflict

or instabilities emerge. So far deliberate and emerging paths have been scrutinized, both from competitive and cooperative starting points which allows for a matrix typology of cooperative behaviors along those two axes (table 6).

Table 6. Coopetition strategies empirical typology

Development path Starting point	Deliberate	Emerging
Competitive	<ul style="list-style-type: none"> ⤴ collective competition against others, ⤴ collective resource acquisition 	<ul style="list-style-type: none"> ⤴ induced cooperation, ⤴ resource sharing, ⤴ cooperative value chain model
Cooperative	<ul style="list-style-type: none"> ⤴ competition for the “share in the pie”, ⤴ value sharing agreement, ⤴ rent appropriation 	<ul style="list-style-type: none"> ⤴ opportunism, ⤴ conflict, ⤴ unilateral rent seeking

Coopetition outcomes have mostly been scrutinized from firm-level perspective, with some notable interorganizational level exceptions. At firm level there is growing evidence that coopetition fosters innovativeness and technology development (Ritala, 2011). Also, firms entering cooperative relationships may expect positive market performance impact (Meade, Hyman, Bank, 2009; Gnyawali, Park, 2009), as coordinated action provides an edge over other firms. The impact of coopetition strategies on financial performance has been found positive (Robert, Marques, Le Roy, 2009), yet other studies suggest that it is limited or even absent depending on the number of competitors (Ritala, Hallikas, Sissonen, 2008). While firm level impact is generally positive with some ambiguities, the collective level of analyses has been used much less frequently. There is a gap in the literature referring to what we call ‘the cooperative advantage’, a clear benefit arising from cooperative relationships.

3.2. Competition perspective on coopetition

Competition frameworks come second in reference frequency with 24% of papers. Competitive relationships exist when firms seek out the same limited resources, or target the same market or customers (Gimeno, 2004). If competition arises from niche overlap, then coopetition studies examine the extent and the impact of this overlap (Kotzab, Keller, 2003). Studies referring to competition perspective display a less structured use of competition theory, than those

which refer to alliances. Instead of mobilizing a theoretical framework researchers rather use some concepts, such as: competitive manoeuvring, competitive advantage, value chain, and exploit game theoretical explanations (Brandenburger, Nalebuff, 1996; Rusko, 2011). Competitive manoeuvring explores how inter-competitor dynamics intensity impact rivals and firms performance. Similarly, cooptation studies show that competitive advantage captures above average earnings achieved by one firm against its competitors. A restrained use of competition may be linked to their narrow focus on one type of relationship between firms. The rise of alliances in management literature has primarily been a reaction to this argument.

Several studies show cooptation to be a successful strategy when applied by firms to individual value chain activities: procurement, marketing or R&D. Firms are involved in various interorganizational relationships with others along the value chain in the same time (Solitander, Tidström, 2010). Bengtsson and Kock (2000) have shown that firms tend to cooperate within activities that are more far away from the customer, while they compete within activities closer to the customer. Some studies explore: a) upstream cooptative activities: R&D, buying, processing of raw materials; b) downstream cooptative activities – distribution, services marketing (Bengtsson, Kock, 2003; Rusko, 2011), and Mariani (2007) adds the midstream aspect – production. Cooptation is simultaneously cooperating and competing, but on different activities (Bengtsson, Eriksson, Wincent, 2010). Two or more competitors can cooperate in product development or technology upgrades and at the same time compete in taking orders, attracting customers, or expanding market share (Gnyawali, Madhavan, 2001; Tsai, 2002). The separation of activities that are jointly carried out from those, which are individually operated by firms contributes to alleviate tensions between collaborative and competitive logic. Therefore a clear thread of research is opened for further cooptation studies, focusing on each and every activity along the value chain: logistics, operations, human resource or even firm infrastructure.

3.3. Network perspective

The network approach is referred to in 23% of papers. A distinctive feature of network studies is that firm performance is dependent on whom interacts with whom (Håkansson, Snehota, 2006). In other words the organization-environment interface can be scrutinized along network structures, positions and roles played by actors involved. We combine it with evolutionary economics because both approaches adopt a collective level of analysis and use either structural variables or descriptive dynamics (Luo, 2005; Czakon, 2009; Bengtsson, Kock, 1999).

Interestingly network related issues, such as ecosystem competition or internal dynamics leading to coopetition strategies have been relatively popular among scholars (Chien, Peng, 2002; Gueguen, 2009; M'Chirgui, 2005).

A majority of the existing research is focused on the network perspective of coopetition (41%), while dyadic relations are introduced in 7% of the total. Interestingly, a substantial number of papers has opted for the interorganizational level of analysis, which is broader than a dyad, but still not a network. Those studies account for roughly half the sample (49%). Networks are assumed to consist of participants trying to achieve common benefits, whether they are internal value networks (organizations) or networks between different organizations (Solitander, Tidström, 2010). Firms in networks develop a set of relationships through connected activities, linked resources and related actors, all of these elements being interconnected and interdependent. Researchers focus on the roles of the participants involved in the relations (Table 7). Theoretical models suggest that coopetitors can have different roles within value networks. Yet, there is very few empirical studies examining them in detail. Notably, recent empirical evidence shows that third-party actors may have an enabling role in coopetition (Castaldo et al., 2010). A more detailed identification of coopetition network roles and their impact on the coopetition process is therefore necessary.

Table 7. Roles in Network Coopetition – some examples

Source	Identified roles in network coopetition
Chin, Chan, Lam, 2008	contender, adapter, monoplayer, partner
Luo, 2007	estranger, contender, partner, and integrator
Rusko, 2011; Bengtsson, Eriksson, Wincent, 2010	competitors, complementors, suppliers, and customers
Chien, Peng, 2005	direct & indirect partners, current or potential competitors
Luo, 2005	aggressive demander, silent implementer, ardent contributor, network captain

Future research should undertake the challenge of studying the relationship between network structural variables: density, betweenness, centrality or size and coopetition. Also roles played in networks have impact on coopetition which still calls for empirical investigation.

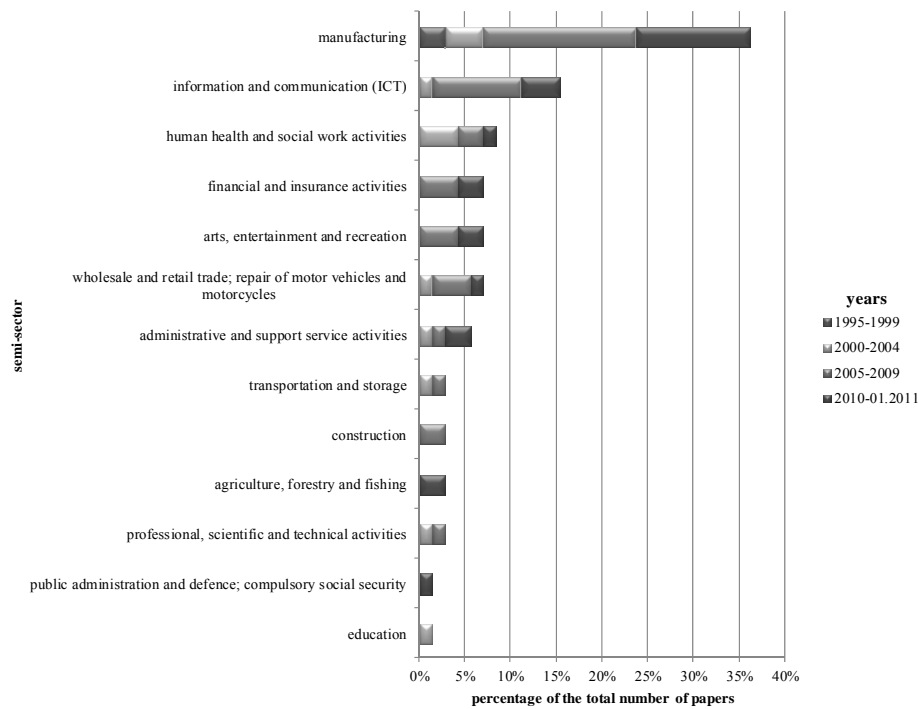
A diverse theoretical background suggests that coopetition has not been scrutinized in a consistent way. Consequently, the research findings might be difficult to integrate into a coherent body of knowledge. Similarly to the interorganizational dynamics literature (Bell, Den Ouden, Ziggers, 2006), com-

peting hypotheses arise from a rapidly growing body of empirical findings. Yet, those findings are drawn from various paradigms and therefore cannot be directly confronted in terms of better explanatory power. There is a growing need to develop a more coherent theory of cooptation.

4. Empirical research foci

Recently a substantial increase in cooptation empirical studies number can be noticed, bringing rich insights into the phenomenon. Using frequency analysis we identify cooptation research by sector, semi-sector and industry (Figure 5).

Figure 5. Semi-sectors in papers over time



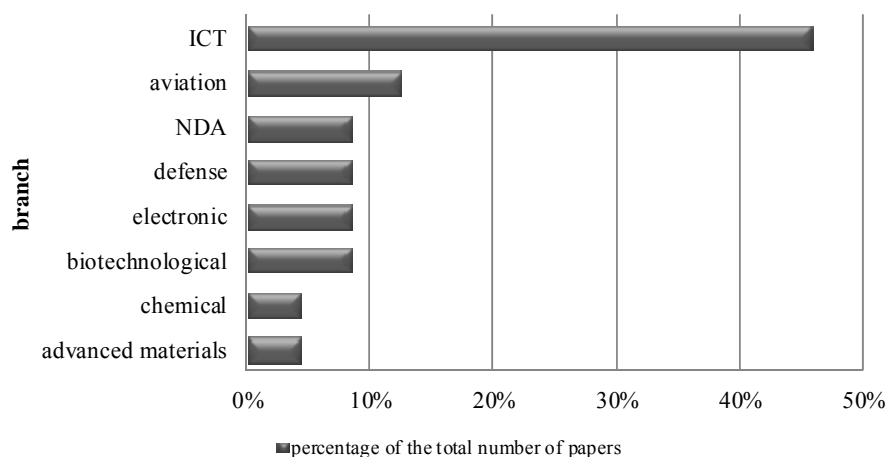
Firstly, following C. Clark and J. Fourastie, we distinguish three economic sectors (Wolfe, 1955): agriculture, manufacturing, and services. For detailed analyses, the European statistical classification NACE Rev2 has been adopted: it specifies of 21 types of economic activity, which are henceforth called semi-

sectors (Eurostat, 2011). 72 papers have been identified in accordance with our classification. Additionally, the High-Tech semi-sector has been added, classified in accordance with the product method of the classification of High-Tech goods by the OECD. A substantial attention is paid to services sector, which was dealt with by a total of 58% of research. Industry comes next with 39% of published work, while agriculture is last, capturing a marginal attention of 3%. An imbalance in the research also emerged inside each sector, where extremely different proportions fall to particular semi-sectors, and strong variations of academic interest can be observed over time.

In the case of the first sector, half of the papers concern forestry (50%) and the second one fishing (50%). In the second sector, a vast majority was focused on manufacturing (93%), with just 7% dealing with construction. Research in the third sector was dominated by the ICT semi-sector (26%) and human health and social work activities (14%). A scant number of analyses concern activities relating to education and widely defined public administration.

Similarly, the High-Tech semi-sector receives the most of academic attention in coopetition studies with a total of 33% of published work (Figure 6). Within high-technology, the most frequent research subject was ICT economic activity (this represents 46% of the total number of papers) and then aviation industry (13%). Pharmaceutical, chemical and biotechnological spheres were less explored by scientists. Nevertheless, the High-Tech semi-sector with a result of 33% of the research has been the most scientifically explored business activity so far.

Figure 6. High-Technology industries in papers

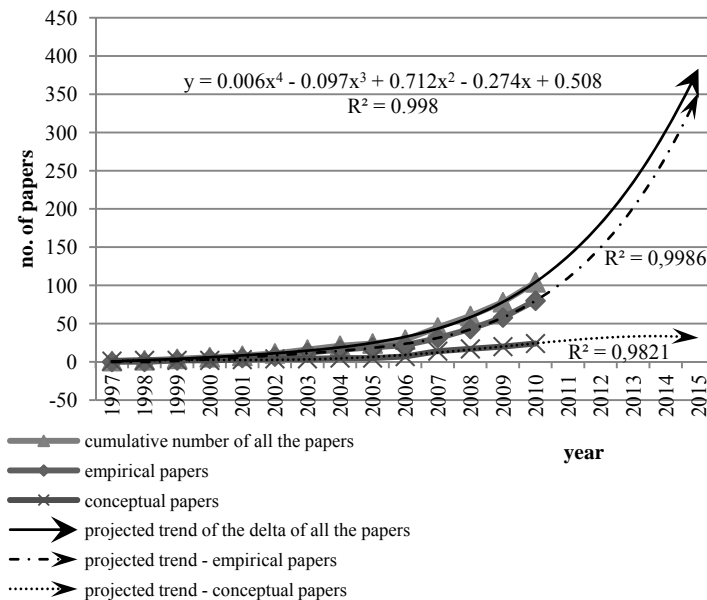


To summarise, cooptation appears here as an industry related phenomenon, especially concerned with complex products, rapid technology change (Ritala, 2011), intensive competition (Robert, Marques, Le Roy, 2009), and high uncertainty (Gnyawali, Park, 2009). Yet, there is a visible failure to address more established industries, or less dynamic sectors of activity. Researchers so far opted for sharply observable empirical settings leaving a substantial part of businesses beyond focus. Further research needs to take an increasingly detailed account of the context, and by expanding the focus of interest onto industries so far under-researched.

5. Discussion and implications for further research

Our study shows that cooptation is perceived by scholars as a novel object of study. The rising interest in tackling cooptation displays a surge in total number of studies, and more recently of empirical papers. For a century this phenomenon labelled by managers did not attract academic attention, then for a decade since its introduction in the literature it has been of interest for a restricted community of researchers. Yet, if the current trend would be sustained, cooptation has all chances to go beyond a community of researchers into a key issue in management (Figure 7).

Figure 7. Estimated increase in number of papers on cooptation



Source: Based on M. Rogalski (2011).

Most of expected growth should be attributable to empirical papers, where authors refer to clearly defined features of coopetition. The upsurge of empirical work and relative decrease in theoretical frameworks suggest a widespread adoption of a grounded theory approach. Fragmentation and growing detail in studies comes into light. Further insights will strongly be dependent on whether authors opt for convergent theoretical stances, and thus avoid the pitfall of paradigmatic tensions, or not.

Our study suggests that the prolific heterogeneity reported in empirical studies has not unveiled any clear morphology of coopetition so far. While a common understanding of what coopetition is clearly emerges in the literature, researchers have failed so far to provide a detailed picture of the different forms coopetition may take. One reason might be that coopetition is more a principle for human action than a strategy. Theory building subsequent effort shall take account of different coopetition contingencies, which suggests that formulating a set of principles for competing could be a valuable starting point (Chin, Chan and Lam 2007).

The other reason might be connected with the need to expand the empirical body of literature. For this effort to be fruitful to the discipline, some basic lines of further inquiry should be drawn. A few key issues remain out of coopetition studies scope, although in related fields those concerns have been investigated. This refers to the reasons: a) why a firm does have ambiguous and opposing behaviors? b) what makes managers so willing to act for the sake of others in complex and risky ways? and c) what makes competitive and cooperative rents achievable in the long run? We organize further research agenda following Oliver and Ebers (1998) in order to address those questions in Table 8. It allows both to extend current research threads by filling existing gaps, and develop some research foci so far missing in the literature.

Table 8. Further research agenda antecedents – processes – outcomes

Theoretical challenge	Research question	Observation needs
1	2	3
Antecedents	What exogenous factors induce or facilitate coopetition? What endogenous factors or propensities facilitate coopetition? How do factors impact coopetition behaviors?	Need for an evaluation of factors which make coopetition a first choice strategy, or more likely to appear in specific settings. Need to observe life cycle dependencies of interfirm competitive relationships

table 8 cont.

1	2	3
Process	What coordination mechanisms contribute to coopetition success? What is the morphology of a coopetition process? What capabilities need to be mobilized for successful coopetition? Why is coopetition stable over time? How does the coopetition process unfold over time?	Need to identify and evaluate governance forms and leadership roles in coopetition behaviors. Need to identify the sequences of events that intertwine collaboration with competition, as patterns. Need to explore the dynamics and balance within coopetition. Need to discern coopetition development patterns
Outcomes	What advantages come from bringing together competition and collaboration? How to operationalise rents arising from coopetition? How does coopetition impact performance, innovation or survival?	Need to identify and evaluate rents attributable to coopetition. Need to observe the extent to which coopetition is difficult to imitate, in sustainable advantage terms. Need to examine the strength and shape of the relationship between coopetition and dependent variables

However up-to-date empirical investigation of coopetition antecedents has so far been fragmented and descriptive, it has also the merit to open ways for more articulate and systematic scrutiny. Industry related antecedents have been outlined only very recently (Ritala, 2011), while the size of firms has been brought only a few years earlier (Gnyawali, Park, 2001). In other words some exogenous factors inciting managers to adopt coopetition have been examined. Empirical evidence shows the pivotal role of regulatory bodies in adopting coopetition in health care (Barretta, 2008). Further research can be expected to deeper analyze such exogenous factors as deregulation (Depeyre, Dumez, 2010), globalization (Luo, 2004) or social networks. One of key questions within coopetition research is whether the rationale for anti-competitive legislation is still valid. The regulators have long been assuming so far that any form of collaboration between competitors is anti-competitive, collusive and harmful for the customer (Vonortas, 2000). Coopetition as a revolutionary mindset (Brandenburger, Nalebuff, 1996) and the value network concept bring positive-sum into the competitive game, which stands in opposition with the traditional view. This calls for research on the impact of regulation and deregulation on coopetition adoption by firms. Globalization in turn brings an increased competitive pressure, which may induce firms into coopetition as a response to perceived external threats. Similarly, social networks can convey mimetic pressures between managers, which otherwise would not be adopted. All in all, extant research suggests that

coopetition is adopted as a reaction to external stimuli, but the list of those exogenous factors is far from being exhaustive.

Also, endogenous factors require further attention. More commonly resource or capability contingencies have been examined in the perspective of resource interdependency of firms (Mariani, 2007). There is a substantial literature explaining why competitors collaborate, but it still fails to address the question why all competitors do not collaborate? Other endogenous factors such as: managerial propensities for individual or collective action, corporate level strategies, communication issues can shed more light on coopetition.

Compared to antecedents, the coopetition process is far better understood. However, the majority of authors use alliance references. This raises a key question on how different coopetition is from alliances? The epistemological assumptions are clearly different. While competition, tension or instabilities in alliances literature are considered as nuisance and source of concern (Das, Teng, 2000), within coopetition studies they are sources of success. When a tension appears in the time span of a collaborative agreement in the alliances literature, this very coincidence of competition and collaboration consumes the whole time span of coopetition studies. If alliances consider a single, ideal-type relationship at a time and observe its morphology empirically, coopetition studies deliberately opt for a complex, dialectical and holistic approach to consider a real life phenomenon and draw propositions from the business reality. Also, the alliance literature on competitor collaboration is ambiguous. Indeed prior studies show high failure rates which might lead to zero or even negative-sum games (Ritala, 2011). For instance, direct competitor alliances in the airline industry studies provide negative evidence on effectiveness (Gimeno, 2004). In our view, the synchronicity, ontological and epistemological stances clearly differentiate coopetition from alliances.

Coopetition manifestations differ across industries, levels of analysis and scope of study. Within such a variety a more systematic recognition of distinct types has been missing so far. We believe that coopetition typologies constitute a promising thread of study. Theoretical typologies, based for instance on the collaboration and competition relative intensity would unveil a set of ideal types. Further empirical scrutiny would confirm that firms adopt them, or fail to. The degree of intensity has also the merit to open ways for a detailed examination of internal balance and dynamics within coopetition.

Nevertheless the majority of literature adopted an interorganizational level of analysis has become the preferred level of scrutiny. Inversely, firm or activity level considerations are relatively under researched. This opens ways for inves-

tigating both cooperation for each and every single value chain activity firms carry out, but also articulations between cooperation on some activities while competing on others. Managerial ambidexterity is to be found at this level of analysis, as a critical success factor for cooperation. Ambidexterity refers to the capability of organizations to simultaneously manage opposite competencies. Initially ambidexterity has been introduced to capture the capability to explore and exploit knowledge (Raich et al., 2009). A very similar challenge emerges when firms are engaged in cooperation, as they need to display the capability to manage competitive and collaborative behaviors (Herzog, 2010). Ambidexterity raises the issue of developing different or opposite capabilities, and to handle the tensions arising from its difference. Therefore, studies which focus on capabilities required to successfully cooperate may shed light on factors fostering cooperation process.

Similarly, network level or industry level empirical studies are still few. This level of analysis takes account of market structure contingencies, ecosystems competition, collective growth strategies, etc. Therefore cooperative dynamics for competing ecosystems yield promise of providing important insights. Networks imply various roles played by firms. The literature has very seldom used structural variables to explain cooperation or even to identify it. A clear methodological gap emerges here as far as the use of social network analysis techniques is concerned.

Finally, cooperation outcomes have so far been examined for a limited number of variables. Innovation performance (Quintara-Garcia, Benavides-Velasco, 1996), market performance (Meade, Hyman, Blank, 2009) and financial performance (Ritala, Hallikas, Sissonen, 2008) have been frequently used as outcome variables to demonstrate, that cooperation strategies are beneficial for the firm. However, those studies provide ambiguous results suggesting different impact depending on the number of competitors. Empirical evidence unveils mediating variables between cooperation strategies and financial performance, such as market learning (Luo, Slotegraaf, Pan, 2006) or efficient consumer response (Kotzab, Keller, 2003). Prior findings encourages replication or larger sample studies in order to confirm the positive impact and explore boundary conditions, such as the size of firms involved, their heterogeneity, technology life cycles, etc. Also, it seems useful to explore how cooperation can impact outcomes of interest at different levels of management: market share, risk or entry for functional strategists; performance for business unit managers; growth or profitability for corporate level managers. The paradoxical nature of cooperation, coupled with ambiguous results of performance studies suggests, that the role of cooperation may be different across the firm. Further on, we can test the hypothesis that for some activities cooperation is advisable, while for others it offers less interesting results (Bengtsson, Kock, 2000).

Similarly, there is few evidence on how coopetition is beneficial for the whole value network. Firm level studies provide insights into how one cooperator can take advantage of collaborative rents. Thus, researchers address the question why one firm should use coopetition, but fail to address the question why others should follow. In other words, beyond sharp examples of focal firm success, more attention is required to show how coopetition generates common benefits available to all cooperators. Such studies would aim at isolating the value generated by coopetition for businesses, as a parallel to competitive advantage (Barney, 2001) or collaborative advantage (Dyer, Singh, 1998). If the interplay between competition and collaboration is constitutive for coopetition, then we can expect that the coopetition rent is more than the sum of competitive advantage and collaborative rents. Importantly coopetition has so far been considered as a behaviour of choice, and a difficult one. Should it also be difficult to imitate, then cooperative rents would have their very high rank in strategy literature.

Conclusions

The founding achievement of coopetition research community is much more than coining a term for a complex phenomenon. Researchers agree on its key features, and have identified some development paths: emergent and deliberate. Some initial typologies have followed. Also, coopetition has been presented as optimal, equilibrium strategy, which facilitates the study of under-performing competitive or cooperative strategies. A systematic scrutiny of the literature sheds light on several gaps. A first general issue in coopetition research is its morphology – there is need to expand empirical research beyond high-tech industries, and examine it more in detail along the value chain activities. Secondly, further research should address the stability issue – what is the glue holding opposed or unbalanced competition and collaboration together? Exogenous pressures, separation of collaborative and competitive activities, or organizational ambidexterity hold promise of better explanations than currently available. This thread of research may shed additional light both on coopetition antecedents and on the coopetition process. Thirdly, coopetition outcomes need to be brought into light – what is in it for participating firms? Beyond innovation, market and financial performance other variables such as growth, survival or speed to market can be explored. Future research may also isolate the cooperative advantage, both as common and appropriable benefit.

Coopetition remains of high managerial relevance and draws rapidly growing academic attention. However, it is still more of a recognized concept than a theory, which can mostly be attributed to the early stage of research. For example, alliances investigation started in early 1980's and brought in a consistent and seminal body of research in late 1990's and so forth. By analogy, coopetition would need about 10 years more to address empirical issues with a consistent theory.

Providing it with theoretical grounds or at least comparatively testing available theories for heterogeneous empirical settings may be viewed as a major challenge. Rent seeking behavior seems promising, as it provides explanations for the rationale of simultaneous competitive and cooperative behaviors, for unilateral rent seeking and collective action, as well as for adaptive actions. Indeed coopetition has brought three concepts into strategy research which have long been absent from it or have been considered separately: 1) value maximization in an interorganizational context, 2) rent appropriation as a simultaneous concern, and 3) emergent adaptation to changing operation's circumstances. Given the intellectual challenge coopetition brings to researchers, and the high managerial relevance of the topic further research holds promise of gathering increasing audiences.

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