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**DO YOU SEE WHAT I MEAN? AN ENTREPRENEURSHIP PERSPECTIVE ON
THE NATURE AND BOUNDARIES OF THE FIRM**

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ABSTRACT In answering the questions "why does the firm exist?" and "what determines its boundaries?", established theories of the firm have focused on boundary choice in a context of relatively easily identified and evaluated alternatives. This paper starts by asking the kindred question "why does the firm come into existence?", shifting attention to the circumstances and choices surrounding new firm formation and the exploitation of new and untried business ideas. It proceeds to delineate an entrepreneurship perspective on the nature and boundaries of the firm, where boundary decisions are driven by the difficulty of implementing new, subjective means-ends frameworks in sometimes very unreceptive markets. A set of propositions developing the concepts of cognitive incongruence and cognitive incompleteness suggests that activities are internalized when other market participants are unable to accept or understand the entrepreneur's subjectively perceived means-ends framework. In conclusion, the paper supports the development of theory that explains choice of modes of action based on subjective world views and the emerging notion of a distinctive entrepreneurship-based theory of the firm.

INTRODUCTION

The theory of the firm has generated a vigorous stream of research on the existence, boundaries, and internal organization of the firm. Significant contributions have been made on the basis of various forms of transaction costs and the nature of principal-agent relationships. More recently, evolutionary theory, the resource-based view, as well as knowledge-based theories have all suggested alternative conceptions of the nature and boundaries of the firm. With few exceptions, existing theories have been concerned with boundary decisions in a context of established firms and relatively easily identified and evaluated alternatives. Boundary decisions have been framed as a choice between arm's length contracts and internal organization under stable or slowly changing technological conditions, whether the determining factors be transaction costs (Coase, 1937; Williamson, 1985, 1991)¹, the costs of coordinating diverse production skills (Conner and Prahalad, 1996), or the ability to effectively combine and recombine related sets of knowledge (Kogut and Zander, 1992).

Because of their preoccupation with already established firms, existing approaches to the theory of the firm have diverted attention from the analytically interesting period surrounding new firm formation. This is unfortunate, because new firm formation encompasses particular conditions and processes that appear to have a direct bearing on the choice between markets and internal organization. Specifically, the founding of new firms takes place in a context of changing technological conditions, sometimes extreme ambiguity, and incomplete or slowly emerging markets for materials, products and services. Under these conditions, general resistance to the logic and consequences of new ideas can become a critical obstacle to the development of new ventures. New firm formation also involves the presence of individuals or entrepreneurs whose personal convictions and subjective opinions play a central role in the recombination and reorganization of existing resources and exchange relationships.

The central thesis of this paper is that the problems associated with the introduction of new and untried business ideas in unreceptive markets represent a critical and currently overlooked element in determining why markets are sometimes superseded by internal organization. Drawing upon insights from Austrian economics, cognition

theory, and entrepreneurship research, the paper formalizes a set of propositions on how subjective means-ends frameworks and cognitive incongruence and cognitive incompleteness among market participants influence the entrepreneur's decision to carry out activities within firm boundaries. Generally, the propositions suggest that internalization is the result of the inability of other market participants to either accept or understand the entrepreneur's subjectively perceived means-ends framework, which to his or her mind spells out the preferred or "best way" of implementing the entrepreneurial idea in the marketplace.

The paper makes two contributions to the existing literature and academic debate. First, it responds to the call for further investigations of modes of action or organizational alternatives in the entrepreneurship literature (Venkataraman, 1997; Shane and Venkataraman, 2000), particularly with respect to theory that connects the discovery of opportunities and the formation of firm boundaries (Bruyat and Julien, 2001; Busenitz et al., 2003). Specifically, it develops the concept of a subjective means-ends framework, and differentiates between cognitive incongruence and cognitive incompleteness as conceptually distinct sources of inefficient markets and the lack of intersubjective agreement (Dew et al., 2004). The formalized propositions are primarily concerned with new firm formation and the introduction of new combinations, as opposed to mere imitation of ideas and business concepts which have already been pioneered and proven by others. However, it is suggested that the fundamental mechanisms may also extend into later stages of firm growth, whenever new business initiatives are taken and existing markets are deemed inadequate to promote the development of a particular business idea.

Second, by focusing on the period of new firm formation, the paper addresses a void in the existing theory of the firm and probes the universal relevance and boundary conditions of existing theories. Building on the original insights by Silver (1984) and Langlois (1988, 1992a), it offers theoretical formalizations to support the emerging notion of an entrepreneurship-based theory of the firm (Foss, 1994, 1997; Witt, 1999; Alvarez and Barney, 2004; Dew et al., 2004; Foss and Klein, 2005). The theory is consistent with those contributions that question the universal relevance of moral hazard as an explanation for the establishment of firm boundaries (Kogut and Zander, 1992; Conner and Prahalad, 1996; also, Coase, 2000), yet offers a different and distinctive

interpretation of the mechanisms determining firm boundaries. Although it will not be attempted to compare and evaluate competing theories of the firm at length, the concluding discussion contrasts the different perspectives and reflects upon their possible co-existence in explaining the formation of firm boundaries.

The paper is structured into three main sections. The first section delineates the fundamentals of entrepreneurship and describes how the entrepreneur discovers new business opportunities and translates this discovery into a subjective means-ends framework. The section that follows focuses in on boundary decisions, identifies cognitive incongruence and cognitive incompleteness as two conceptually distinct drivers of firm boundaries, and formulates a set of propositions on how they influence the entrepreneur's choice between markets and internal organization. While focusing on the formation of firm boundaries in the context of new combinations, it also reflects upon boundary decisions in the maturing firm. The third and final section contains a summary and conclusions, including reflections on the distinctive properties and complementarities of entrepreneurship-based and alternative theories of the firm.

ENTREPRENEURSHIP AND THE DISCOVERY OF NEW BUSINESS OPPORTUNITIES

An entrepreneurship perspective on the nature and boundaries of the firm rests on two fundamental assumptions about the nature of business activity: profit-seeking individuals and asymmetrically dispersed knowledge across economic actors. It embraces continuous change and the existence of genuine uncertainty in the introduction and exploitation of new business ideas, fundamentally disputing equilibrium approaches to the functioning of the economic system (Mathews, 2006).

The quest for profit or wealth plays an important motivational role in the entrepreneur's pursuit of new business opportunities (Baumol, 1990, 1993). It may be that enterprising individuals ultimately aim at goals other than profit alone, such as social respectability, power, personal freedom, or securing an outlet for creativity (e.g. Reynolds and White, 1997), but earning and protecting profits still play an important role in reaching these ultimate goals. Moreover, the quest for profit takes place in a context

where time is of the essence. In the eyes of the entrepreneur, “windows of opportunity” are open only during limited periods of time, and being the first to exploit an opportunity is perceived to be associated with significant first-mover advantages.

Asymmetrically dispersed knowledge implies differentiated sets of information and knowledge held by individual decision-makers (Menger, 1871; Hayek, 1937, 1948; Mises, 1949), which in the business context causes variation in the ability to identify and assimilate new information and events. Individual decision-makers tend to notice information that relates to and can be integrated with what they already know, and the value attributed to new information and events depends on prior knowledge of the market for resources and customer needs (Witt, 1992; Shane, 2000)². As a result, a “given” opportunity is not recognized by all potential entrepreneurs, and the same opportunity may be interpreted differently depending on the individual. Strictly speaking, opportunities become real in the creative mind of the entrepreneur, as he or she uses observations and impressions from the external environment to activate unobserved or latent combinations of resources and customer demand.

Asymmetrically dispersed knowledge is accompanied by incomplete information about the variables that affect market conditions, and unanticipated change caused by the plans developed and implemented by other market participants. It means that in some areas the individual’s knowledge is scant, negligible or lacking and consequently subject to guesswork or incomplete estimation. In this context of genuine uncertainty, the entrepreneur, like any individual, will act on the basis of what he or she thinks rather than objective information supplied through existing market relationships or signaled through market prices (Kirzner, 1997). The pursuit of a new business opportunity is partly an act of faith, which by definition involves incomplete perception of current and future states of the world and the role of any prospective business therein.

The unpredictability of market conditions is reinforced by the imaginative or creative element in entrepreneurial decision making. The creative element contains the unexpected and perhaps surprising association between observations and sets of data, or even speculation and dreams about possible attributes and events of the future. Shackle (1973, p. 39) suggests that:

...what individuals, thinking individuals, do springs from their thoughts, and those thoughts are not regular continuations and outgrowths of their immediate past but are subject to sudden mutations, even originations, as new suggestions are noted and interpreted by the individual in the course of deciding his actions.

In subsequent work, Shackle (1979) develops the proposition that entrepreneurial action involves choice and commitment based on feelings, anticipation and an element of surprise, which puts within reach a good state of mind.

The creative element in entrepreneurial decision making lies partly in the discovery of new business opportunities through recombination or analogical reasoning (Ward, 2004), and partly in the ingenuity and resourcefulness which may be shown in the process of reorganizing or creating new market structures and relationships (Whiting, 1988; Amabile, 1997). Similar to the consequences of asymmetrically dispersed knowledge and incomplete information, the imaginative or creative element of entrepreneurship sustains market disequilibrium and denies any objective certainty with respect to future developments of markets and states of the world.

Asymmetrically dispersed knowledge and the creative element in entrepreneurial decision making represent a double-edged sword. On the one hand, it permits the entrepreneur to discover and pursue a particular business opportunity, expecting that the uniqueness of insight can be turned into sizable profits. On the other hand, it tends to create problems because other individuals and firms affected by and needed in the exploitation process are unlikely to see and understand the logic of the new idea, or to share the same expectations, and as a result may resist or even actively oppose it. In the words of Schumpeter (1934, p. 87), this resistance manifests itself first of all in the groups threatened by the innovation, then in the difficulty in finding the necessary cooperation, and finally in the difficulty in winning over customers. As will be discussed presently, resistance and opposition play an important and critical role in the entrepreneur's decisions concerning where to draw the boundaries of the firm.

The Discovery and Exploitation of New Business Opportunities

In the entrepreneurial process that results in the founding of a firm, the entrepreneur can be defined as someone who *discovers* or “sees” a new business opportunity. This requires alertness to hitherto unnoticed business opportunities, be it in arbitrage and trading or in business schemes that involve some form of in-house processing (Kirzner, 1973, 1979, 1985; Schumpeter, 1934, 1942). Kirzner (1985, p. 56) suggests that seeing involves perceiving the “unfolding of the tapestry of the future in the sense of seeing a preordained flow of events”, and that it comprises “ways by which the human agent can, by imaginative, bold leaps of faith, and determination, in fact create the future for which his present acts are designed.” Although there have been relatively few investigations of the opportunity-recognition process (Gaglio, 1997; Ucbasaran et al., 2001), there is some evidence that the ability to see a business opportunity may vary systematically among individuals (McCline et al., 2000).

Apart from alertness and the conception of a future-oriented vision, the perception of a new business opportunity involves elements of evaluation and further development, which may occur sequentially but perhaps more often simultaneously or in an interactive process (Long and McMullan, 1984; Herron and Sapienza, 1992; Ardichvili et al., 2003). In the process of evaluating and developing a new entrepreneurial idea, rough concepts are transformed into an increasingly elaborate and explicit notion of how markets are going to be served and resources must be deployed, redeployed, or created. Eventually, but far from always, the evaluation and development process may result in articulation of the entrepreneurial idea in the form of a feasibility study or more or less full-fledged business plan.

In order to exploit the identified business opportunity, the entrepreneur must *act* upon his or her judgment, perhaps with a degree of confidence which to an outsider appears unwarranted. In the words of Knight (1921, pp. 269-270), acting upon judgment is responsible for a system or organization under which the confident and venturesome “assume the risk” or “insure” the doubtful by guaranteeing the latter a specified income in return for an assignment of the actual results. In the case of the trading or pure entrepreneur, this means committing to the purchase of a certain product for re-sale at a later point in time. For the entrepreneur involved in more complex business schemes, it

also becomes a matter of actively mobilizing resources and labor to perform the necessary work.

Recent developments in the entrepreneurship literature suggest that the decision to act upon identified business opportunities depends on the entrepreneur's unique prior knowledge, experience, and social networks. According to intentions-based models (Krueger, 2000; Krueger et al., 2000), the active pursuit of a new business opportunity is preceded of the forming of an intention, the strength of which depends on what the entrepreneur perceives as desirable and feasible. In the model suggested by Krueger (2000), as in parts of the theoretical antecedents (Ajzen and Fishbein, 1980; Ajzen and Madden, 1986; Ajzen, 1987), the entrepreneur is likely to respond to opportunities when believing himself/herself to be in possession of the required personal resources and also of the requisite support from the extended social network.

The entrepreneur's opportunity to act is perceived to be *temporally constrained*, as the passing of time involves changing perceptions of profit opportunities and is seen to open the way for pre-emptive action by other market participants. The entrepreneur considers it necessary to act swiftly and to maintain flexibility to respond to unanticipated change, lest much of the first-mover advantage and profit potential be lost to others. Whenever the entrepreneur can draw sufficiently upon existing markets and resources, he or she will do so in order to speed up the implementation of the entrepreneurial idea (Bird, 1988). Efforts will then focus on those aspects of the entrepreneurial idea that prove particularly difficult to develop and implement. Typically, as will be further elaborated upon below, these aspects challenge conventional beliefs and ways of doing things and require substantial adjustments by other market participants.

The Subjective Means-Ends Framework

The exploitation of a new business opportunity involves the creation of a subjective means-ends framework, which represents a more or less detailed or coherent scenario of the unfolding of future market events. This subjective means-ends framework could be described as a schema or knowledge structure (Markus and Zajonc, 1985; Fiske and Taylor, 1991; Walsh, 1995)³, a cognitive structure that represents perceived knowledge

about a future state of the world, including specific attributes, the relationships between those attributes, and the events and sequences of events that lead up to its realization. The entrepreneur's means-ends framework involves a largely unarticulated estimation of the probabilities of the emergence of particular attributes, events, or sequences of events (perhaps only in terms of expectations that "this is likely to happen" or "this is unlikely to happen"), beliefs about change that can be brought about by the entrepreneur's own actions, and a hierarchy of events in terms of their perceived importance for the successful implementation of the entrepreneurial idea. Parts of the framework, particularly those related to activities and conditions which have to be actively created rather than those which only require modest reconfigurations of already existing market relationships and resources, are only ascertainable within wide limits and are subject to substantial guesswork depending on the beliefs of the individual. These aspects will be more fully revealed through the further development and exploitation of the new business opportunity.

Particularly in the case of new combinations, the subjective means-ends framework may involve only a hazy picture of the future state and the sequences of events that may lead to its realization. As an illustration, Baldwin (1951, p. 77) reiterates King C. Gillette's conception of the safety razor: "As I stood there with my razor in my hand, my eyes resting on it as lightly as a bird settling down on its nest – the Gillette razor was born. I saw it all in a moment, and in that same moment many unvoiced questions were asked and answered more with the rapidity of a dream than by the slow process of reasoning..." In the correspondence preceding the foundation of the firm, co-founder William E. Nickerson wrote: "I am confident that I have *grasped* the situation and can guarantee, as far as such a thing can be guaranteed, a successful outcome. Your knowledge of my long experience with inventions and machine building will, perhaps, cause you to attach considerable weight to my opinion in this matter." (ibid., p. 82, emphasis added).

However, it would be erroneous to conclude that the subjective means-ends framework is based on pure intuition. For example, Passer (1949) illustrates how the inventive genius of Thomas A. Edison coincided with meticulous market analyses in the process of substituting incandescent light for gas illumination in New York City. In 1878,

Edison noted: “I started my usual course of collecting every kind of data about gas; bought all the transactions of the gas engineering societies, etc., all the back volumes of the gas journals. Having obtained all the data and investigated gas-jet distribution in New York by actual observation, I made up my mind that the problem of the subdivision of electric current could be solved and made commercial.” Additional efforts included canvassing the district to obtain information on the number of gas jets burning at each hour up to three in the morning, a house-to-house survey which provided complete data on exactly how many jets were in each building, the average hours of burning, and the cost of this light to the consumer (Edison collected some 24 books containing gas-light bills of consumers in the district). Eventually, Edison was able to calculate the variable and overhead cost component of the gas which sold for \$ 2.25 per 1000 cubic feet, and was confident that he could get one-half of the lighting business in the district by setting the price of electric-light equivalent to gas at \$ 1.50.

The establishment of a subjective means-ends framework, particularly when the entrepreneur believes the business opportunity has few comparable precedents, is susceptible to cognitive biases. Overconfidence may lead the entrepreneur to an over-optimistic assessment of the validity of means-ends framework and his or her own capability to influence attributes and events in the desired direction (Busenitz and Barney, 1997). Specifically, when rough probabilities are assigned to the future occurrence of desirable attributes, events, or sequences of events, they tend to be over-estimated. Because of the planning fallacy associated with future-oriented visions, the entrepreneur is also likely to disregard risks and to overestimate how much can be accomplished in a given period of time (Kahneman and Lovallo, 1993; Baron, 1998). As a consequence, the entrepreneur will often expect earlier and more substantial profits than actually turns out to be the case.

As the entrepreneur converts the discovery of a new business opportunity into practical action, he or she identifies a seemingly most suitable, or “right,” way to proceed given prior knowledge and particular circumstances. The entrepreneur formulates and executes plans that are neither random nor predetermined, and their correctness will only be proven as future events unfold. As the entrepreneur over time gains access to new information, the subjective means-ends framework tends to become more complex,

although the uniqueness of the situation and the absence of comparable cases may not necessarily make it more cognitively compact or accurate (Fiske and Taylor, 1991). The means-ends framework will undergo change as the entrepreneur learns more about external conditions and the entrepreneurial idea itself, but critical underlying assumptions about attributes, events, or sequences of events will remain intact, lest the pursuit of the entrepreneurial idea be abandoned. Strong prior beliefs concerning the subjective means-ends framework may even lead to the denial of mixed or contradictory evidence.

Given the subjectivity of the means-ends framework and a possibly over-optimistic entrepreneur, it is not difficult to understand why the entrepreneur is often seen as irrational. The fact that the entrepreneur sees a new business opportunity, correctly or incorrectly, implies the discovery and exploitation of something which has hitherto gone unnoticed or been neglected by others. Unable to see the future state or to perceive the means to get there, bystanders often have difficulty in relating to the logic underlying the entrepreneurial idea. They may also have considerably different opinions about the true risks involved or the likelihood that certain attributes, events, or sequences of events will materialize. As specified in the following section, this has important implications for the establishment of firm boundaries.

AN ENTREPRENEURSHIP PERSPECTIVE ON THE NATURE AND BOUNDARIES OF THE FIRM

With the fundamental elements of the discovery and exploitation of new business opportunities in place, it is possible to probe more fully into the link between the entrepreneur and the establishment and boundaries of a business firm, or the question why there are “islands of conscious power in this ocean of unconscious co-operation like lumps of butter coagulating in a pail of buttermilk.” (Coase, 1937, p. 388, quoting D.H. Robertson). The critical factor is that the entrepreneur, particularly in the introduction of new combinations (Schumpeter, 1934)⁴, attempts to impose a subjective and largely unknown means-ends framework on the market and must find and activate resources to achieve the desired ends (Stinchcombe, 1965; Aldrich and Fiol, 1994; Aldrich, 1999). In the establishment of the firm, the entrepreneur thereby fulfills the function of creator,

organizer and market-maker in one, albeit often with the help of other individuals and organizations (Schoonhoven and Romanelli, 2001).

In pursuit of the entrepreneurial idea, the entrepreneur is preoccupied with imposing the subjective means-ends framework on the market and with finding various means of eliminating any forces that may erode the profit potential. He or she acts in what may be characterized as a hurry, since expected returns are perceived to be under constant threat of discovery and exploitation by others. In other words, the entrepreneur cannot sit back and wait for markets to develop and converge, and may indeed start the entrepreneurial venture without reference to available information. The aim of preserving the profit potential sometimes impels the entrepreneur to counteract unfavorable bargaining positions vis-à-vis suppliers of critical materials and equipment, as has been demonstrated both theoretically and empirically (Williamson, 1985, 1991; Joskow, 1991). However, concerns about unfavorable bargaining positions may initially be secondary to a larger and perhaps more problematic undertaking – that of convincing other market participants of the value and correctness of the means-ends framework (Aldrich and Fiol, 1994; Lounsbury and Glynn, 2001).

Fundamentally, the entrepreneur's subjective perception of profit opportunities implies that existing markets for materials, equipment, and labor have not been able to converge to produce the intended product or service offering. Specifically, markets may have failed to produce the desired functionality, timing (supplying the product or service at the right time and place), or paths of upgrading that fulfill the perceived needs of customers. The inability of existing markets to converge suggests that the entrepreneur must activate and co-ordinate resources beyond established market relationships. He or she must become involved in the reconfiguration of ongoing business activities and occasionally in the establishment of new ones. In the words of Schumpeter (1934, p. 89), the entrepreneur thereby “leads the means of production into new channels”. Some materials, equipment, or services may be readily available in the market, requiring little adaptation in terms of functionality, timing, or paths of upgrading, while others will require modification along one or several dimensions to fit the perceived means-ends framework. Likewise, some skills may be available in existing labor markets, while others may require development and special training to support the new undertaking.

Explaining the Boundaries of the Firm

In response to institutional expectations and tradition, the entrepreneur in pursuit of a new business opportunity registers a legal entity and proceeds to develop and coordinate its activities and resources. With respect to utilizing existing markets for materials, equipment, or services (including logistics and distribution), the entrepreneur may be confronted with two typical situations. In the first, existing materials, equipment, or services are adequate to fulfill the requirements of the entrepreneur's subjectively perceived means-ends framework, or can be adapted to fit these requirements with limited effort. This situation typically results in external contracting for the required inputs, because it speeds up the implementation of the entrepreneurial idea and maintains the entrepreneur's flexibility to respond to unforeseen and changing circumstances. From the suppliers' point of view, sales are effectuated in the course of already established operations and carry little risk apart from the credit that may be extended to the entrepreneur⁵.

The other situation requires a higher degree of change with regard to existing materials, equipment, or services, and sometimes the initiation of new activities and market relationships. In this case, the ability to understand and share the entrepreneur's means-ends framework becomes much more critical. From the entrepreneur's point of view, introducing actual change in existing activities and market relationships is critical for the successful implementation of the new entrepreneurial idea. Among potential suppliers of materials, equipment, or services, becoming involved in the entrepreneurial idea promises profits from gaining first-mover advantages in a market of new products and services that is yet to develop. Simultaneously, new-investment decisions require closer scrutiny and evaluation of the idea's true market potential, and the forming of an opinion about the probability of overall or partial success of the entrepreneur's undertaking⁶.

The conflicts which may arise in this situation have two conceptually different but similar origins: (1) cognitive incongruence, or disagreement concerning the entrepreneur's means-ends framework or the probabilities assigned by the entrepreneur to

the future occurrence of individual attributes, events, or sequences of events, and (2) cognitive incompleteness, the perceived but in critical respects incomplete understanding of the entrepreneur's means-ends framework. As further specified below, both cognitive incongruence and cognitive incompleteness tend to push the entrepreneur towards the internalization of activities to secure the preferred way of implementing the entrepreneurial idea in the marketplace.

Cognitive incongruence. Potential suppliers of materials, equipment, or services will be reluctant to invest in a new business proposition when they disagree with the correctness of the entrepreneur's means-ends framework. Different opinions may be expressed in the form of alternative means-ends frameworks, which may or may not be linked to successful outcomes, or as different probabilities of critical attributes, events, or sequences of events. Specifically, market participants may have different views on the overall viability of the entrepreneur's means-ends framework, or the possibility that critical technical or market-related problems can be satisfactorily resolved.

When there is disagreement about the entrepreneur's means-ends framework, market exchange will be discouraged by the lack of support from other market participants and by the entrepreneur's perceived costs of having to explain, persuade, or negotiate with potential contractual counterparts (Silver, 1984; Langlois, 1988, 1992a, 1992b; Foss, 1993; Langlois and Robertson, 1995, 1998). While these costs may be subsumed under the general concept of transaction costs, it is notable that explanation and persuasion aim at altering rather than accepting perceived uncertainty and that they in the eyes of the entrepreneur comprise lost revenues due to delayed introduction of the new business idea (Alvarez and Barney, 2004). In some cases, different opinions about the fundamental aspects of the means-ends framework may be so entrenched that any form of persuasion or negotiation will prove futile. In the words of Aldrich (1999, p. 81), entrepreneurs with business plans outside current expectations "may find no one who accepts what they propose to do". In order to pursue the entrepreneurial idea, the entrepreneur will be compelled to internalize those activities where disagreements prove particularly acute and difficult to resolve.

The case of King C. Gillette and the development of the safety razor illustrates the point. In order to launch the new product, Gillette needed access to thin sheets of steel of

sufficient quality to withstand repeated usage. However, established steel-makers unanimously remained skeptical about the potential for producing a quality blade out of sheet steel. Baldwin (1951, p. 78) writes: "... during this period from 1895-1901 Gillette experimented persistently with the key problem of trying to make a blade from sheet steel that would harden and temper suitably for taking a keen edge. In pursuing this idea, Gillette visited "every cutler and machine shop in Boston and some in New York and Newark ... Even [the Massachusetts Institute of] Technology experimented and failed absolutely." Those who knew most about steel and most about razors were the most discouraging, for they unanimously told him that it was not possible to put a keen edge on sheet steel." Ultimately, the industrial manufacturing process had to be worked out in-house.

In cases of less severe disagreements, potential suppliers of materials, equipment, or services may be in accord with the basic aspects of the entrepreneur's means-ends framework, but assign different probabilities to the overall success of the entrepreneurial idea or the likelihood that problems related to certain attributes, events, or sequences of events can be overcome. This situation may exist when market participants apply an outside view on the new venture, involving an assessment of the entrepreneurial idea against what are believed to be prior, similar cases, or a comparative assessment that results in ambiguity avoidance (Fox and Tversky, 1991; Kahneman and Tversky, 1993). Where disagreements are modest or not overly fundamental, the entrepreneur's choice between using existing markets and resorting to internalization is determined by the perceived costs of persuasion and negotiation, constrained by limited resources and the perceived threat of pre-emptive actions by other market participants. These costs are associated with direct expenditures and personal efforts, but also with delayed and what is perceived as impaired implementation of the entrepreneurial idea (perhaps more correctly put, delayed and impaired implementation reduces the income stream of the new venture). They may be considered at the outset or become apparent as the entrepreneurial idea is launched and tested in the marketplace.

Cognitive incongruence is very difficult to resolve even through the use of contingent contracts, because potential suppliers and supporters of the entrepreneurial idea must ultimately commit to investments that involve genuine risk and face the very

real possibility of a potentially insolvent entrepreneur. In contrast to interactions between established firms, potential business partners find little security in the form of accumulated resources that can be reallocated by the entrepreneur and used for selective reputation-saving efforts. Cognitive incongruence is also difficult if not impossible to insure away since entrepreneurial undertakings are typically unique events with relatively few, if any, precedents or comparable cases (Knight, 1921; Busenitz and Barney, 1997).

Generally, cognitive incongruence suggests that the entrepreneur internalizes activities when other market participants understand but to a significant extent disagree with the subjectively perceived means-ends framework:

***Proposition 1a:** In the introduction of new combinations, the entrepreneur internalizes activities when potential suppliers of materials, equipment, or services have different opinions about the correctness of the entrepreneur's means-ends framework.*

***Proposition 1b:** In the introduction of new combinations, the entrepreneur internalizes activities when potential suppliers of materials, equipment, or services have different opinions about critical attributes, events, or sequences of events that are part of the entrepreneur's means-ends framework.*

These two propositions must allow for a certain amount of variation or random factors influencing the formation of firm boundaries. As the entrepreneur follows and implements a subjective means-ends framework, resource and time constraints prevent extensive search for potential suppliers of materials, equipment, or services. Moreover, boundary decisions may reflect the entrepreneur's personal preferences regarding organizational size (sometimes entrepreneurs do internalize activities for which appropriate markets already exist), the perceived need for control and exact implementation of the entrepreneurial idea, as well as cash constraints (Jacobides and Winter, 2007, this issue). In short, boundary decisions may be subject to "errors" which are offset by particular strengths in other aspects of the entrepreneurial idea, and any

explanation for observed organizational boundaries should allow for considerable variation in expected outcomes (Burton, 2001).

Cognitive incompleteness. While cognitive incongruence occurs when the fundamental premises of the entrepreneur's means-ends framework have been understood but then rejected, cognitive incompleteness is the result of the incomplete or only partial understanding of the overall logic of the means-ends framework (or inability to recognize the entrepreneur's ability to influence events in his or her favor). The sources of incomplete understanding may be limited cognitive ability to grasp new business ideas that deviate from existing and established practices, and/or the entrepreneur's inability to articulate and communicate complex and partly intuitively understood business propositions. In the early stages of implementing the novel entrepreneurial idea, it may also be very difficult to articulate and accurately describe requisite and frequently changing product or service attributes or interfaces.

Sometimes, incomplete understanding of the entrepreneur's undertaking may not be accompanied by the establishment of any alternative means-ends frameworks at all, but result in outright rejection of the entrepreneurial idea. To illustrate, Murphy (1966, p. 173, quoting Jerome, 1860) describes the local townsfolk's limited appreciation of Eli Terry's experimentation with large-volume clock manufacturing and distribution techniques in the early 19th century, and summarizes their reactions:

The foolish man, they said, had begun to make two hundred clocks; one said, he never would live long enough to finish them; another remarked, that if he did he never would, nor could possibly, sell so many, and ridiculed the very idea.

Alternatively, potential suppliers of materials, equipment, or services may for various reasons show interest in and support for an entrepreneurial idea, but lack sufficiently detailed and in-depth understanding of critical attributes, events, or sequences of events of the underlying means-ends framework. Specifically, suppliers may differ in their perception of requisite product or service functionality and quality, the timing of investments or accuracy in product and service delivery (creating costs of not having the

requisite capabilities when they are needed), or the paths of upgrading products and services (Foss, 2001). An overheard discussion between a Russian entrepreneur selling bottle caps in the local market and a group of fellow businesspeople may illustrate the point. Responding to the question why the firm did not deal with the quality problems encountered with a Chinese manufacturing partner and instead decided to start in-house manufacturing, the answer was: “We tried to, but they didn’t have a clue what we were talking about.” As in the case of cognitive incongruence, the insufficient understanding of the entrepreneur’s subjective means-ends framework may be evident at the outset, or more typically become apparent as the entrepreneurial idea is launched and implemented in the marketplace.

When other market participants, despite the best of intentions, are unable to supply what the entrepreneur believes are the right products or services at the right time, their limited outlook will be perceived as a threat to the implementation of the entrepreneurial idea. Under such circumstances, the entrepreneur may resort to explanation or negotiation (aimed, for example, at reaching agreement on minimum standards of supplied materials or services), but the perceived costs will ultimately reach a point where activities are internalized and coordinated within firm boundaries. Paradoxically, cognitive incompleteness may therefore result in a situation where intersubjective “agreement” is not necessarily supportive of market exchange (Dew et al., 2004).

Proposition 2: *In the introduction of new combinations, the entrepreneur internalizes activities when potential suppliers of materials, equipment, or services have an incomplete understanding of the entrepreneur’s means-ends framework or critical attributes, events, or sequences of events of that framework.*

While the entrepreneur may resort to explanation, persuasion, or negotiation to implement the entrepreneurial idea, the level of effort is limited by the entrepreneur’s alternative use of time and the perceived need to get the entrepreneurial venture off the ground before profits are eroded by competition. Moreover, because the entrepreneur

tends to move about in limited geographic areas (Zander, 2004), it is unlikely that he or she will be able to survey the entire set of possible suppliers and supporters of the entrepreneurial idea. Negotiation implies unwanted alterations to the entrepreneur's original means-ends framework, and may ultimately reach a point where the entrepreneur perceives that critical elements of the entrepreneurial idea have become compromised and too hollowed-out for its effective implementation. When the entrepreneur internalizes activities that are particularly non-transparent or challenge conventional beliefs in the marketplace, the firm thus becomes a substitute for shared understandings and knowledge of the future (Loasby, 1990)⁷.

It is notable that lack of support for the entrepreneurial idea and the perceived costs of explanation, persuasion, and negotiation are not necessarily a reflection of moral hazard, but the outcome of different opinions or understandings of the entrepreneur's means-ends framework (Hodgson, 2004). Other market participants may be considered as self-interest seeking when following their own convictions, but this does not necessarily imply the stronger form that involves self-interest seeking with guile (Williamson, 1996). As firms emerge and evolve they may thus be seen as *reflections of different opinions* and as such play a central role in technological and economic processes. When challenging conventional beliefs and ways of doing things, the entrepreneur and his or her firm are precursors of what will eventually become established views in the normal course of competition. Indeed, Hayek (1948, p. 106) describes the essence of the competitive process as the formation of opinion and spreading of information, which creates the unity of the economic system which is presupposed when we think of it as one market.

Overcoming the Market Coordination Problem

The entrepreneur's decision to internalize activities for which there is little agreement or understanding among other market participants is accompanied by an active involvement in the coordination of activities and resources. Employees will be hired and tasks organized and interconnected in ways which are believed will best support the realization of the subjective means-ends framework. Likewise, tangible and intangible resources will be acquired, reconfigured and recombined to produce the intended output. In the process

of coordinating activities and resources, the entrepreneur initially uses centralized decision making and directing as a substitute for market coordination. As explained by Knight (1921, p. 269):

... the organization of industry depends on the fundamental fact that the intelligence of one person can be made to direct in a general way the routine manual and mental operations of others... men differ in their powers of effective control over other men as well as in intellectual capacity to decide what should be done.

Centralized decision making and directing allows the entrepreneur to take a shortcut in the formation of agreement and shared understanding concerning new business ideas. While the question “could it often be more productive to let someone else make the decision?” has been answered in the negative (Cheung, 1983), the answer in an entrepreneurial view of the firm is more affirmative⁸. The entrepreneur’s active involvement in coordination and directing is an essential and highly visible aspect of the start-up period, although with some qualifications it is found also in the maturing and ultimately established enterprise (Evans, 1942; Jenks, 1949).

Hiring decisions reflect the ambition to contract individuals who, in contrast to the small number of people whose convictions deny access to other firms’ employees and resources, are willing to contribute to the implementation of the entrepreneurial idea. In the early growth phase, the entrepreneur may typically be looking for people who can grasp and identify with the entrepreneurial idea, have the skills needed to accomplish some immediate tasks, and are willing to accept still undefined positions in future projects (Aldrich, 1999; Burton, 2001). However, many prospective employees, particularly in a newly established firm, will lack a comprehensive understanding of the entrepreneurial idea and the specific tasks they are expected to perform (indeed, this may be seen as one of the factors that prevent employees from assuming the entrepreneurial role themselves). Hence, the entrepreneur will initially attend to and be actively involved in allocating tasks and clarifying interconnections among employees, often beyond what can be explicitly expressed in the original employment contract⁹.

Employment contracts, as opposed to transactional agreements that involve short-term and highly specified exchange of labor for compensation, yield unparalleled flexibility to re-design and adjust operations in the flux of time and competition (Langlois, 2003). They give the entrepreneur the right within reasonable limits to swiftly change the nature of tasks, making it possible to reorganize activities and resources without prior consideration or re-negotiation of contractual terms (Simon, 1951; Conner and Prahalad, 1996; Foss, 1996a). Indeed, the entrepreneur's general resistance to formalizing role assignments or job titles in the early phases of developing a business can be seen as a reflection of the anticipated need to adapt operations to changing circumstances and business conditions.

It has been suggested elsewhere that employment does not allow the entrepreneur fully to control the activities of others, and that there is little difference between directing employees and independent consultants or even representatives of other firms (Alchian and Demsetz, 1972). It is not argued here that employment gives or even should give the entrepreneur absolute control or power, but submitted that the signing of an employment contract generally involves an implicit acknowledgement of the entrepreneur's superior ability to see and act upon profitable business opportunities, and of his or her right to exert authority across a relatively wide range of tasks which may be activated in the course of developing the entrepreneurial idea (Rideout, 1996). Arm's length contracts with external parties, which may of course vary in detail and the implicit understandings of rights to exercise discretionary power (Collins, 2003), are based on the fundamental assumption that authority may not to be exercised except for those instances explicitly and unambiguously stipulated in contractual terms.

There are reasons to believe that labeling or recognition of being employed by a firm has a demarcating effect on individual role perceptions, one of which involves acknowledgement of the founding entrepreneur's authority in business decisions. At a fundamental level, boundary-identifying conditions such as a firm name, an office and mailing address, or identifying symbols distinguish work done as a firm member from individual activities outside boundary conditions (Katz and Gartner, 1988). Reflecting this distinction, role identification has been found to be minimal, or at least less committing, in short-term enactments such as temporary employment (Ashforth, 2001).

Some recent empirical work supports the assumption that salaried employees are more likely to indicate stronger organizational identification, and suggests that the stronger the individual's organizational identification the higher the likelihood of cooperative behavior (Dukerich et al., 2002).

Apart from the directing of employee activities, the entrepreneur is likely to be involved in hands-on teaching (Mintzberg and Waters, 1982), the communication of the means-ends framework, or even the cultural paradigm of the entrepreneurial idea (Schein, 1983), using persuasiveness, patience, and persistence to implement a model of conduct, understanding, and commitment to the business venture (Witt, 1998). These activities support the formation of an overall understanding of the means-ends framework among newly appointed firm members, which will guide the interpretation of new information and events and produce actions that are consistent with the perceived future state of the world. By thus communicating the subjective means-ends framework to firm members, the entrepreneur lays the foundation for further interaction and socialization among employees (Witt, 2001), which as the firm matures reinforces shared understandings and models of behavior (Stinchcombe, 1965; for a review of the literature on organizational knowledge structures, see Walsh, 1995). Eventually, the firm develops the routines and higher-order organizing principles that make it distinctive in the marketplace (Kogut and Zander, 1992), but these routines and organizing principles originate in the perceptions and active directing of the entrepreneur.

When market coordination problems are associated with cognitive incompleteness, internalization and directing allows the entrepreneur to compensate for initially incomplete understandings of the entrepreneurial idea¹⁰. But internalization also has an effect on the individual's ability to discard or change existing cognitive structures, as entering a new organizational context comes with the explicit or implicit recognition that new ways of thinking and acting may be required. This gives the entrepreneur an opportunity to change ingrained and taken-for-granted understandings and models of behavior¹¹. A casual illustration would be the often expressed intentions to "learn the new job" and "get to know how things are done around here" whenever individuals change employment and enter a new work environment. The co-location of activities under the direct auspices of the entrepreneur allows for more frequent interaction and rapid

iterations in the process of establishing desired cognitive structures and models of behavior. Yet, although co-location typically coincides with activities that are carried out within the firm, it is technically possible also in the context of organizationally separate entities and individuals. The benefits of internalization are therefore tightly connected to the demarcating effects employment has on individual role perceptions and the openness towards changing established cognitive structures and models of behavior.

Boundary Decisions in the Maturing Firm

It has been suggested that the entrepreneur's subjectively perceived means-ends framework has a significant influence on boundary decisions when firms are created to exploit new combinations. However, the fundamental mechanisms are likely to persist in later stages of firm growth as well, whenever existing markets and market relationships are deemed inadequate to promote the development of a particular business idea, or, in a more general sense, when attempts are made to significantly change the firm's operations and strategy.

The traditional and most extensively discussed explanation for vertical integration concerns avoidance of unfavorable bargaining positions or "bottlenecks", and is intimately associated with asset specificity and the threat of opportunistic behavior. The alternative view, which has been promoted in this paper, is based on the existence of cognitive incongruence and cognitive incompleteness among market participants, and the entrepreneur's perceived costs of explanation, persuasion, and negotiation in the process of implementing a specific entrepreneurial idea. This view does not assume or depend critically on the existence of moral hazard or opportunistic behavior, but derives from asymmetrically dispersed knowledge, competing or incomplete means-ends frameworks among market participants, and the constraints imposed by the entrepreneur's perceived need to act swiftly upon new business opportunities.

The proposition that difficulties in responding to or understanding subjective means-ends frameworks remain influential even after the firm's early formation period finds support in observations that specifically refer to the *inability* of market participants to produce certain materials, equipment, or services. In his study of the growth of

American enterprises, Chandler (1977) emphasizes the importance of administrative coordination to supplant market exchanges. Although avoidance of unfavorable bargaining positions as well as pre-emptive competitive moves are part of the Chandler's analytical framework, the mental or physical inability to perform required tasks appears in many instances to play an equally important role. Concerning the integration of upstream activities, Chandler (1977, p. 487) notes that: "... marketers went into manufacturing only on those relatively rare occasions when processors were unable to provide the goods at the price, quality and quantity desired." Brown (1989, p. 533) makes a similar observation concerning William Britain's 19th century involvement in the toy-soldier business -- because uniform details and colors were found to be important buyer selection criteria, the company "...made its own paints in order to ensure evenness of quality and accuracy of colour." Other examples are found in the distribution and manufacturing of American dry goods at the turn of the century and trawler ownership among Aberdeen fish-merchants (Evans, 1957; Loasby, 1976).

In terms of downstream investments, Chandler (*ibid.*, p. 486) finds that: "... where the mass marketers were unable to provide the services needed to distribute the goods in the volume in which they could be produced, the enterprise became large." Specifically, mass marketers were found reluctant to make what they perceived as risky investments. Likewise, C.E.L. Brown and Walter Boveri of Brown Boveri found that the sale of equipment in the infant electrotechnical industry was blocked by skepticism concerning the use of electricity and certain legal problems surrounding water rights. To solve this problem, their company set up a separate division, purchased concessions, made the necessary installations, supervised operations, and once the concept had proven itself in the market eventually sold the operations to cities, municipalities and private investors (Ziegler, 1937).

While obviously open to alternative interpretations, these observations are suggestive of the persistent consequences of divergent means-ends frameworks across entrepreneurs and other market participants. If taken literally, the inability of market participants to produce certain materials, equipment, or services can and sometimes should be interpreted as the persistent lack of understanding the tasks that the entrepreneur perceives necessary to exploit and grow a particular entrepreneurial idea.

Reluctance to commit to risky investments may be attributed to different perceptions of the nonmeasurable risks associated with the introduction of new products or services, and may not primarily or necessarily involve consideration of the risks of opportunistic behavior among prospective contractual partners. The essential, but unproven, proposition is that the problem is one of cognitive incongruence and cognitive incompleteness, not of strong bilateral dependency and the lack of credible commitments (Williamson, 1996).

SUMMARY AND CONCLUSIONS

This paper started from the assumption that firms come into existence on the basis of profit seeking individuals, asymmetrically dispersed knowledge, and the subjective means-ends frameworks that “seeing” entrepreneurs establish to exploit new business opportunities. A set of propositions addressing the effects of cognitive incongruence and cognitive incompleteness on the exploitation of new combinations has suggested that decisions concerning firm boundaries are driven by the inability of other market participants to either accept or understand the entrepreneur’s perceived means-ends framework. The extended discussion has elaborated upon how the decision to internalize resources and activities allows the entrepreneur to overcome or alleviate the associated problems of market coordination.

The conceptual development and formalized propositions contribute to the advancement of theory that explains choice among modes of action or organizational arrangements in the entrepreneurship literature (Busenitz et al., 2003), detailing the subjective means-ends framework and identifying cognitive incongruence and cognitive incompleteness as conceptually distinct drivers of firm boundaries. In the case of cognitive incompleteness, one paradoxical conclusion is that intersubjective agreement is not necessarily supportive of market exchange (Dew et al., 2004). In a broader sense, the paper’s focus on new firm formation and the introduction of new combinations resonates and supports recent calls for establishing a distinctive domain of entrepreneurship research, addressing and explaining the “why, when, and hows” of discovering and

organizing the exploitation of future goods and services (Shane and Venkataraman, 2000).

By focusing on the conditions and processes surrounding new firm formation, the paper supports the emerging notion of a distinctive entrepreneurship-based theory of the firm (Foss, 1994, 1997; Witt, 1999; Alvarez and Barney, 2004; Dew et al., 2004; Foss and Klein, 2005). In contrast to established theories, which have been preoccupied with established business entities and relatively stable markets, the entrepreneurship perspective explores the context and consequences of new and creative insights, subjectively perceived means-ends frameworks, and time constraints in the pursuit of new business opportunities. It is a start, and several related issues such as the entrepreneur's use of in-between forms of market coordination or the profit consequences of using different coordinating mechanisms in the exploitation of new opportunities await more focused and extensive treatment in future work.

While sharing the assumption of bounded rationality and uncertainty with the transaction cost view, the entrepreneurship-based theory suggests a more parsimonious explanation for firm boundaries by rejecting strong forms of self-interest seeking as a universal problem in the coordination of markets. In this respect, it concurs with suggestions that the significance of moral-hazard problems in different business situations may currently be overstated (Kogut and Zander, 1992; Conner and Prahalad, 1996; Casadesus-Masanell and Spulber, 2000; Coase, 2000; Freeland, 2000). A different interpretation would be that whereas the transaction cost view emphasizes one particular behavioral assumption (that individuals are given to opportunism), the entrepreneurship perspective emphasizes other behavioral traits -- the individual's tendency and ability to construct and act upon subjective means-ends frameworks, to identify with organizations, and to enact the environment from a particular organizational or firm perspective. In this context, the perceptions and expectations of individuals entering employment are critical for understanding how internalization can overcome problems of market coordination.

The entrepreneurship perspective coincides with the view that firms exist because they know how to perform certain things well (Kogut and Zander, 1992), but it does not reduce boundary decisions to a question of knowledge fluidity and routines for knowledge recombination. To overcome the barriers associated with cognitive

incongruence and cognitive incompleteness, the entrepreneur initially uses centralized decision making and communication to coordinate resources and activities to meet the perceived requirements of the subjective means-ends framework. The directing of activities and alterations of pre-existing cognitive structures will be followed by learnt and increasingly elaborate routines that define the exchange and recombination of knowledge among firm members, but the formation of these routines should be recognized as a consequence of the entrepreneur's initial efforts to introduce cohesion in partially unreceptive markets.

While it is beyond the scope of the present paper to comment extensively upon operationalization and measurement issues, the conceptual development and the formalization of propositions concerning boundary decisions is a first step towards empirical tests. Empirical studies that probe the relationship between cognitive incongruence, cognitive incompleteness and boundary decisions could draw particularly upon work on the measurement and comparison of cognitive maps (Eden et al., 1992; Langfield-Smith and Wirth, 1992; Markóczy and Goldberg, 1995; Wang, 1996). Although direct observation of cognitive structures is inherently difficult, measurement difficulties are shared with other approaches to the theory of the firm, and at least selective aspects of the proposed causal mechanisms could be effectively addressed in experimental settings. Additional insights could be gained from qualitative sources and content analysis of actual statements concerning boundary decisions by practicing entrepreneurs.

As a closing reflection, the parallel existence of conflicting views on the nature and boundaries of the firm is reflective of a dynamic and still elusive phenomenon (Langlois and Robertson, 1989; Langlois, 1992a, 2003; Afuah, 2001). The present paper has suggested cognitive incongruence and cognitive incompleteness as critical determinants of boundary decisions in the exploitation of new combinations, adding that their influence may also extend into later stages of firm growth. Yet, it must be emphasized that it does not purport to replace any existing theories of the firm, assuming that other considerations and explanations may gain in importance as new combinations prove themselves in the marketplace, markets for materials, equipment, or services become more generally recognized and understood, and specialist suppliers increasingly

provide viable alternatives to internally coordinated activities and resources (Alvarez and Barney, 2005). A perhaps bolder proposition would be that decisions concerning firm boundaries routinely reflect a mix of different considerations and decision logics, the full implications of which are yet to be addressed in further conceptual and empirical work.

Returning to the core arguments of the paper, the primary ambition has been to detail the consequences of an entrepreneurship perspective on the nature and boundaries of the firm, and to contribute to the building of theoretical foundations of the domain of entrepreneurship research. The focus on new firm formation, new combinations, and subjective world views concurrently offers a reference point for assessing the universal relevance of established theories of the firm. Although general acceptance of the co-existence of competing theories is perhaps unlikely to emerge anytime soon, discussions that probe the boundaries and general explanatory power of current and new theoretical approaches should become a more prominent element in the debate on the nature and boundaries of the firm in the years to come.

REFERENCES

- Afuah, A. (2001). 'Dynamic boundaries of the firm: Are firms better off being vertically integrated in the face of a technological change?'. *Academy of Management Journal*, **44**, 1211-1228.
- Ajzen, I. (1987). 'Attitudes, traits, and actions: Dispositional prediction of behavior in personality and social psychology'. *Advances in Experimental Social Psychology*, **20**, 1-63.
- Ajzen, I. and Fishbein, M. (1980). *Understanding Attitudes and Predicting Social Behavior*. Englewood Cliffs, NJ: Prentice-Hall.
- Ajzen, I. and Madden, T.J. (1986). 'Prediction of goal-directed behavior: Attitudes, intentions, and perceived behavioral control'. *Journal of Experimental Social Psychology*, **22**, 453-474.
- Alchian, A.A. and Demsetz, H. (1972). 'Production, information costs, and economic organization'. *American Economic Association*, **62**, 777-795.
- Aldrich, H.E. (1999). *Organizations Evolving*. Sage Publications.
- Aldrich, H.E. and Fiol, M.C. (1994). 'Fools rush in? The institutional context of industry evolution'. *Academy of Management Review*, **19**, 645-670.
- Alvarez, S.A. and Barney, J.B. (2004). 'Organizing rent generation and appropriation: Toward a theory of the entrepreneurial firm'. *Journal of Business Venturing*, **19**, 621-635.
- Alvarez, S.A. and Barney, J.B. (2005). 'How do entrepreneurs organize firms under conditions of uncertainty?'. *Journal of Management*, **31** (5), 776-793.
- Amabile, T.M. (1997). 'Entrepreneurial creativity through motivational synergy'. *The Journal of Creative Behavior*, **31** (1), 18-26.
- Ardichvili, A., Cardozo, R. and Ray, S. (2003). 'A theory of entrepreneurial identification and development'. *Journal of Business Venturing*, **18**, 105-123.
- Ashforth, B.E. (2001). *Role Transitions in Organizational Life: An Identity-Based Perspective*. Mahwah, NJ: LEA.
- Baldwin, G.B. (1951). 'The invention of the modern safety razor: A case study of industrial innovation'. *Explorations in Entrepreneurial History*, **4** (2), 73-102.
- Baron, R.A. (1998). 'Cognitive mechanisms in entrepreneurship: Why and when entrepreneurs think differently than other people'. *Journal of Business Venturing*, **13**, 275-294.
- Baumol, W.J. (1990). 'Entrepreneurship: Productive, unproductive, and destructive'. *Journal of Business Venturing*, **11**, 3-22.
- Baumol, W.J. (1993). *Entrepreneurship, Management and the Structure of Payoffs*. Cambridge, MA: The MIT Press.

- Bird, B. (1988). 'Implementing entrepreneurial ideas: The case for intention'. *Academy of Management Review*, **13**, 442-453.
- Brown, K.D. (1989). 'Models in history: A micro-study of late nineteenth-century British entrepreneurship'. *The Economic History Review*, **42**, 528-537.
- Bruyat, C. and Julien, P.-A. (2001). 'Defining the field of research in entrepreneurship'. *Journal of Business Venturing*, **16**, 165-180.
- Burgelman, R.A. (1983). 'A process model of internal corporate venturing in the diversified major firm'. *Administrative Science Quarterly*, **28** (2), 223-244.
- Burton, D.M. (2001). 'The company they keep – Founders' models for organizing new firms', in Schoonhoven, C.B. and Romanelli E. (Eds), *The Entrepreneurship Dynamic – Origins of Entrepreneurship and the Evolution of Industries*. Stanford, CA: Stanford University Press.
- Busenitz, L.W. and Barney, J.B. (1997). 'Differences between entrepreneurs and managers in large organizations: Biases and heuristics in strategic decision-making'. *Journal of Business Venturing*, **12**, 9-30.
- Busenitz, L.W., West, G.P., Shepherd, D., Nelson, T., Chandler, G.N. and Zacharakis, A. (2003). 'Entrepreneurship research in emergence: Past trends and future directions'. *Journal of Management*, **29**, 285-308.
- Casadesus-Masanell, R. and Spulber, D.F. (2000). 'The fable of Fisher Body'. *Journal of Law and Economics*, Vol. **XLIII**, 67-104.
- Casson, M. (1982). *The Entrepreneur - An Economic Theory*. Totowa, NJ: Barnes & Noble Books.
- Chandler, A.D. (1977). *The Visible Hand - The Managerial Revolution in American Business*. Cambridge, MA & London, England: The Belknap Press of Harvard University Press.
- Cheung, S.N.S. (1983). 'The contractual nature of the firm'. *Journal of Law & Economics*, Vol. **XXVI**, 1-21.
- Coase, R.H. (1937). 'The nature of the firm'. *Economica*, **4**, 386-485.
- Coase, R.H. (2000). 'The acquisition of Fisher Body by General Motors'. *Journal of Law and Economics*, Vol. **XLIII**, 15-31.
- Collins, H. (2003). 'Discretionary powers in contracts', in Campbell, D. et al. (Eds), *Implicit Dimensions of Contract – Discrete, Relational, and Network Contracts*. Oxford and Portland, Oregon: Hart Publishing.
- Conner, K.R. and Prahalad, C.K. (1996). 'A resource-based theory of the firm: Knowledge versus opportunism'. *Organization Science*, **7**, 477-501.
- Dew, N., Velamuri, S.R. and Venkataraman, S. (2004). 'Dispersed knowledge and the entrepreneurial theory of the firm'. *Journal of Business Venturing*, **19**, 659-679.

- Dukerich, J.M., Golden, B.R. and Shortell, S.M. (2002). 'Beauty is in the eye of the beholder: The impact of organizational identification, identity, and image on the cooperative behaviors of physicians'. *Administrative Science Quarterly*, **47**, 507-533.
- Eden, C. (1992). 'On the nature of cognitive maps'. *Journal of Management Studies*, **29**, 262-266.
- Eden, C., Ackermann, F. and Cropper, S. (1992). 'The analysis of cause maps'. *Journal of Management Studies*, **29**, 309-324.
- Evans, G.H. Jr. (1942). 'A theory of entrepreneurship'. *The Journal of Economic History* 2, Issue supplement: The tasks of economic history, 42-146.
- Evans, G.H. Jr. (1957). 'A century of entrepreneurship in the United States with emphasis upon large manufacturing concerns c. 1850-1957'. *Explorations in Entrepreneurial History*, **10** (2), 90-103.
- Fiske, S.T. and Taylor, S.E. (1991). *Social Cognition*. New York: McGraw-Hill, Inc.
- Foss, K. (2001). 'Organizing technological interdependencies: A coordination perspective on the firm'. *Industrial and Corporate Change*, **10** (1), 151-178.
- Foss, N.J. (1993). 'Theories of the firm: Contractual and competence perspectives'. *Journal of Evolutionary Economics*, **3**, 127-144.
- Foss, N.J. (1994). 'The theory of the firm: The Austrians as precursors and critics of contemporary theory'. *The Review of Austrian Economics*, **7** (1), 31-65.
- Foss, N.J. (1996a). 'Firms, incomplete contracts, and organizational learning'. *Human Systems Management*, **15**, 17-26.
- Foss, N.J. (1996b). 'More critical comments on knowledge-based theories of the firm'. *Organization Science*, **7**, 519-523.
- Foss, N.J. (1997). 'Austrian insights and the theory of the firm'. *Advances in Austrian Economics*, **4**, 175-198.
- Foss, N.J. and Klein, P.G. (2005). 'Entrepreneurship and the theory of the firm: Any gains from trade?', in Alvarez, S.A. et al. (Eds), *Handbook of Entrepreneurship Research: Disciplinary Perspectives*. Springer.
- Fox, C.R. and Tversky, A. (1991). 'Ambiguity aversion and comparative ignorance'. *The Quarterly Journal of Economics*, **110**, 585-603.
- Freeland, R.F. (2000). 'Creating holdup through vertical integration: Fisher Body revisited'. *Journal of Law and Economics*, Vol. **XLIII**, 32-65.
- Gaglio, C.M. (1997). 'Opportunity identification: Review, critique and suggested research directions', in Katz, J.A. (Ed), *Advances in Entrepreneurship, Firm Emergence, and Growth*, Vol. 3. JAI Press Inc.

- Grossman, S.J. and Hart, O.D. (1986). 'The costs and benefits of ownership: A theory of vertical and lateral integration'. *Journal of Political Economy*, **94**, 691-719.
- Hayek, F.A. (1937). 'Economics and knowledge'. *Economica*, **4**, 33-54.
- Hayek, F.A. (1948). *Individualism and Economic Order*. The University of Chicago Press.
- Henderson, R.M. and Clark, K.B. (1990). 'Architectural innovation: The reconfiguration of exiting product technologies and the failure of established firms'. *Administrative Science Quarterly*, **35** (1), 9-30.
- Herron, L. and Sapienza, H.J. (1992). 'The entrepreneur and the initiation of new venture launch activities'. *Entrepreneurship Theory and Practice*, **17** (1), 49-55.
- Hodgson, G.M. (2004). 'Opportunism is not the only reason why firms exist: Why an explanatory emphasis on opportunism may mislead management strategy'. *Industrial and Corporate Change*, **13** (2), 401-418.
- Jacobides, M.G. and Winter, S.G. (2005). 'Entrepreneurship and firm boundaries: The theory of a firm'. Mimeo.
- Jenks, L.H. (1949). 'The role structure of entrepreneurial personality', in *Change and the Entrepreneur - Postulates and Patterns for Entrepreneurial History*. Cambridge, MA: Harvard University Press.
- Joskow, P.L. (1991). 'Asset specificity and the structure of vertical relationships: Empirical evidence', in Williamson, O.E. and Winter, S.G. (Eds), *The Nature of the Firm – Origins, Evolution, and Development*. Oxford University Press.
- Kahneman, D. and Lovallo, D. (1993). 'Timid choices and bold forecasts: A cognitive perspective on risk taking'. *Management Science*, **39** (1), 17-31.
- Katz, J. and Gartner, W.B. (1988). 'Properties of emerging organizations'. *Academy of Management Review*, **13**, 429-441.
- Kirzner, I.M. (1973). *Competition and Entrepreneurship*. Chicago and London: The University of Chicago Press.
- Kirzner, I.M. (1979). *Perception, Opportunity, and Profit - Studies in the Theory of Entrepreneurship*. Chicago and London: The University of Chicago Press.
- Kirzner, I.M. (1985). *Discovery and the Capitalist Process*. Chicago and London: The University of Chicago Press.
- Kirzner, I.M. (1997). 'Entrepreneurial discovery and the competitive market process: An Austrian approach'. *Journal of Economic Literature*, Vol. **XXXV**, March, 60-85.
- Knight, F.H. (1921). *Risk, Uncertainty and Profit*. Reprinted in 1964 by Augustus M. Kelley, New York.

- Kogut, B. and Zander, U. (1992). 'Knowledge of the firm, combinative capabilities, and the replication of technology'. *Organization Science*, **3**, 383-397.
- Krueger, N.F. Jr. (2000). 'The cognitive infrastructure of opportunity emergence'. *Entrepreneurship Theory and Practice*, **24** (3), 5-23.
- Krueger, N.F., Reilly, M.D. and Carsrud, A.L. (2000). 'Competing models of entrepreneurial intentions'. *Journal of Business Venturing*, **15**, 411-432.
- Langfield-Smith, K. and Wirth, A. (1992). 'Measuring differences between cognitive maps'. *Journal of the Operational Research Society*, **43**, 1135-1150.
- Langlois, R.N. (1988). 'Economic change and the boundaries of the firm'. *Journal of Institutional Theoretical Economics*, **144**, 635-657.
- Langlois, R.N. (1992a). 'Transaction-cost economics in real time'. *Industrial and Corporate Change*, **1** (1), 99-127.
- Langlois, R.N. (1992b). 'Orders and organizations: Toward an Austrian theory of social institution', in Caldwell, B.J. and Boehm, S. (Eds), *Austrian Economics: Tensions and New Directions*. Kluwer Academic Publishers.
- Langlois, R.N. (2003). 'The vanishing hand: The changing dynamics of industrial capitalism'. *Industrial and Corporate Change*, **12** (2), 351-385.
- Langlois, R.N. and Robertson, P.L. (1995). *Firms, Markets, and Economic Change: A Dynamic Theory of Business Institutions*. London: Routledge.
- Langlois, R.N. and Robertson, P.L. (1989). 'Explaining vertical integration: Lessons from the American automobile industry'. *The Journal of Economic History*, **49** (2), 361-375.
- Loasby, B.J. (1976). *Choice, Complexity and Ignorance – An Enquiry into Economic Theory and the Practice of Decision-Making*. Cambridge: Cambridge University Press.
- Loasby, B.J. (1990). 'The firm', in Creedy, J. (Ed), *Foundations of Economic Thought*. Oxford: Basil Blackwell.
- Long, W. and McMullan, W.E. (1984). 'Mapping the new venture opportunity identification process', in Hornaday, J.A. et al. (Eds), *Frontiers of Entrepreneurship Research*. Wellesley, MA: Babson College.
- Lounsbury, M. and Glynn, M.A. (2001). 'Cultural entrepreneurship: Stories, legitimacy, and the acquisition of resources'. *Strategic Management Journal*, **22**, 545-564.
- Markóczy, L. and Goldberg, J. (1995). 'A method for eliciting and comparing causal maps'. *Journal of Management*, **21**, 305-333.
- Markus, H. and Zajonc, R.B. (1985). 'The cognitive perspective in social psychology', in Lindzey, G. and Aronson, E. (Eds), *Handbook of Social Psychology*, Vol. 1. New York: Random House.

Mathews, J.A. (2006). *Strategizing, Disequilibrium and Profit*. Stanford, CA: Stanford University Press.

McCline, R.L., Bhat, S. and Baj, P. (2000). 'Opportunity recognition: An exploratory investigation of a component of the entrepreneurial process in the context of the health care industry'. *Entrepreneurship Theory and Practice*, **25** (2), 81-94.

Menger, C. (1871). *Principles of Economics*, translated by J. Dingwall and B.F. Hoselitz, 1981. New York and London: New York University Press.

Milgrom, P. and Roberts, J. (1992). *Economics, Organization and Management*. Englewood Cliffs, NJ: Prentice Hall.

Mintzberg, H. and Waters, J.A. (1982). 'Tracking strategy in an entrepreneurial firm'. *Academy of Management Journal*, **25** (3), 465-499.

Mises v. L. (1949). *Human Action - A Treatise on Economics*. New Haven: Yale University Press.

Murphy, J.J. (1966). 'Entrepreneurship in the establishment of the American clock industry'. *The Journal of Economic History*, **26** (2), 169-186.

Passer, H.C. (1949). 'The electric light and the gas light: Innovation and continuity in economic history', reprinted in Aitken, H.G.J. (Ed), 1965, *Explorations in Enterprise*. Cambridge, MA: Harvard University Press.

Penrose, E.T. (1959). *The Theory of the Growth of the Firm*. New York: John Wiley & Sons Inc.

Reynolds, P.D. and White, S.B. (1997). *The Entrepreneurial Process – Economic Growth, Men, Women, and Minorities*. Westport, CT: Quorum Books.

Rideout, R. (1996). 'Implied terms in the employment relationship', in Halson, R. (Ed), *Exploring the Boundaries of Contract*. Dartmouth: Dartmouth Publishing Company Limited.

Schein, E.H. (1983). 'The role of the founder in creating organizational culture'. *Organization Dynamics*, Summer, 13-28.

Schoonhoven, C.B. and Romanelli, E. (Eds) (2001). *The Entrepreneurship Dynamic – Origins of Entrepreneurship and the Evolution of Industries*. Stanford, CA: Stanford University Press.

Schumpeter, J.A. (1934). *The Theory of Economic Development: An Inquiry into Profits, Capital, Credit, Interest and the Business Cycle* (7th printing, 1961). Cambridge, MA: Harvard University Press.

Schumpeter, J.A. (1942). *Capitalism, Socialism, and Democracy*. Harper & Brothers.

Shackle, G.L.S. (1973). *An Economic Querist*. Cambridge at the University Press.

Shackle, G.L.S. (1979). *Imagination and the Nature of Choice*. Edinburgh University Press.

- Shane, S. (2000). 'Prior knowledge and the discovery of entrepreneurial opportunities'. *Organization Science*, 11, 448-469.
- Shane, S. and Venkataraman, S. (2000). 'The promise of entrepreneurship as a field of research'. *Academy of Management Review*, 25, 217-226.
- Simon, H.A. (1951). 'A formal theory of the employment relationship'. *Econometrica*, 19, 293-305.
- Silver, M. (1984). *Enterprise and the Scope of the Firm - The Role of Vertical Integration*. Oxford: Martin Robertson & Company Ltd.
- Stinchcombe, A.L. (1965). 'Social structure and organizations', in March, J.G. (Ed), *Handbook of Organizations*. Chicago: Rand McNally.
- Tushman, M.L. and Anderson, P. (1986). 'Technological discontinuities and organizational environments'. *Administrative Science Quarterly*, 31, 439-465.
- Ucbasaran, D., Westhead, P. and Wright, M. (2001). 'The focus of entrepreneurial research: Contextual and process issues'. *Entrepreneurship Theory and Practice*, 25 (4), 57-80.
- Venkataraman, S. (1997). 'The distinctive domain of entrepreneurship research', in Katz, J.A. (Ed), *Advances in Entrepreneurship, Firm Emergence, and Growth*, Vol. 3. JAI Press Inc.
- Walsh, J.P. (1995). 'Managerial and organizational cognition: Notes from a trip down memory lane'. *Organization Science*, 6, 280-321.
- Wang, S. (1996). 'A dynamic perspective of differences between cognitive maps'. *Journal of the Operational Research Society*, 47, 538-549.
- Ward, T.B. (2004). 'Cognition, creativity, and entrepreneurship'. *Journal of Business Venturing*, 19, 173-188.
- Whiting, B.G. (1988). 'Creativity and entrepreneurship: How do they relate?'. *The Journal of Creative Behavior*, 22 (3), 178-183.
- Williamson, O.E. (1985). *The Economic Institutions of Capitalism - Firms, Markets, Relational Contracting*. The Free Press.
- Williamson, O.E. (1991). 'The logic of economic organization', in Williamson, O.E. and Winter, S.G. (Eds), *The Nature of the Firm - Origins, Evolution, and Development*. Oxford University Press.
- Williamson, O.E. (1996). 'Economic organization: The case for candor'. *Academy of Management Review*, 21, 48-57.
- Witt, U. (1992). 'Turning Austrian economics into an evolutionary theory', in Caldwell, B.J. and Boehm, S. (Eds), *Austrian Economics: Tensions and New Directions*. Kluwer Academic Publishers.

- Witt, U. (1998). 'Imagination and leadership – The neglected dimension of an evolutionary theory of the firm'. *Journal of Economic Behavior & Organization*, **35**, 161-177.
- Witt, U. (1999). 'Do entrepreneurs need firms? A contribution to a missing chapter in Austrian economics'. *Review of Austrian Economics*, **11**, 99-109.
- Witt, U. (2001). 'Changing cognitive frames – changing organizational forms: An entrepreneurial theory of organizational development'. *Industrial and Corporate Change*, **9** (4), 733-755.
- Zander, I. (2004). 'The micro-foundations of cluster stickiness – Walking in the shoes of the entrepreneur'. *Journal of International Management*, **10** (2), 151-175.
- Ziegler, W.H. (1937). *Die wirtschaftliche Entwicklung der A.G. Brown, Boveri & Cie., Baden, des Brown-Boveri-Konzerns und der A.G. Motor-Columbus*. Dissertation der hohen juristischen Fakultät der Universität Bern.

NOTES

¹ Also, Casson (1982), Grossman and Hart (1986), and Milgrom and Roberts (1992).

² As suggested by Baron (1998), entrepreneurs may also disregard large parts of the information available from past experiences, instead focusing on their enthusiastic visions of the future.

³ Related concepts, which involve the articulation of causality, include cognitive maps or cause maps (Eden, 1992; Eden et al., 1992).

⁴ These new combinations largely correspond to the technological discontinuities and radical innovations discussed by Tushman and Anderson (1985) and Henderson and Clark (1990).

⁵ The context is that of multiple suppliers with diversified sales who add an insignificant buyer to their existing customer base. To the extent existing markets are skewed or imperfect, for example due to the existence of patents or firms with dominant positions that have been historically determined, the entrepreneur will need to take these factors into account when estimating the potential success of the new business venture. In the long term, the entrepreneur may be able to act strategically to mitigate the effects of imperfect markets, for example by attempting substitution or forging coalitions with other firms.

⁶ The problem may be re-framed as one of suppliers contemplating investments that are characterized by high degrees of asset specificity and thus subject to the risks of opportunistic behavior. The situation initially (and in the absence of additional assumptions also in the long run) will be one of balanced bilateral dependence, and outcomes sensitive to any credible commitments the parties may be able to make. Yet, as argued by others (e.g. Alvarez and Barney, 2005), transaction cost theory is yet to address decision outcomes under conditions of genuine uncertainty. It will be maintained in the following that decisions concerning firm boundaries can be explained without evoking assumptions about opportunistic behavior.

⁷ Although in some cases explanation, persuasion and negotiation increase the risk of imitation (Alvarez and Barney, 2004), the extent to which other actors can use the information opportunistically should not be overestimated. The inclination and ability of others to act upon the received information depends on a set of factors that affect the feasibility or desirability to engage in imitative behavior (Krueger, 2000). For example, external parties may not be in possession or control of the skills or personal networks of the entrepreneur, and sometimes patents effectively prevent outright imitation. Other limiting factors include preconceived notions of the potential scope of the existing business (similar to the notion of core strategic areas; Burgelman, 1983), reputational effects (imitation may damage the ability to conduct business with other parties and create bad-will among customers), or the relative size of the new venture compared to already established businesses. Clearly, the possibility of opportunistic behavior remains a factor to be considered in explaining new business ideas to others, the point is that it is not the only or necessarily overriding consideration in all cases.

⁸ Foss (2001) makes the same point from a property rights perspective.

⁹ It is beyond the scope of this paper to investigate why some individuals are willing to bet on the uncertain future of new ventures or why they decide to take up employment rather than work independently or start their own firm. Answers may be found in the entrepreneur's charismatic leadership, rational utility-maximizing behavior (Simon, 1951), differences in the inclination to act upon insight or judgment (Knight, 1921), a clearing process which separates those who inspire from those who get inspired (Witt, 1998, 1999), or even the suggestion that firms offer an arena for social belonging which conveniently combines with monetary rewards (thereby connecting the extra-economic with the economic; Foss, 1996b).

¹⁰ Along the same lines, Alvarez and Barney (2004, p. 628) note: "The craftsman 'knows more than he can tell'...and thus cannot simply explain to the apprentice all that must be known to create valuable works of art. However, to the extent the apprentices are willing to subject themselves to the direction of the craftsman, over time they can begin to learn the skills necessary to create great works of art."

¹¹ The entrepreneur's relative advantage in changing taken-for-granted understandings and models of behavior includes both cases of acquired firms (although factors such as the degree of hostility in the take-

over process may complicate matters) and newly employed individuals. It is temporally constrained, as over time learning on the job and socialization tend to solidify new cognitive structures.