Bryan Collings

BEHAVIOR THEORY OF THE FIRM

Cyert and March (1963) produced a book on a behavioral theory of the firm that appears to be both seminal and ahead of its time. They noted the serious issues, problems and disagreements at the time in using the theory of the firm and organizational theory to explain and predict the behavior of the firm. This behavior is seen in the context of economic decisions such as output, price, investment and internal resource allocation. By 1963 there was already significant debate over the theory of the firm as postulated in economic theory and the real-world behavior of a firm. The debate over the theory of the firm was centered around three primary issues: (a) what the theory is, (b) the extent to which the theory is defective, and (c) appropriate methods for improving the theory.

On the *first* issue, *firm theory* suggests that the objective of the firm is to maximize net revenue given prices and a technologically determined production function. Thereafter, maximization of profit is accomplished by determining the optimal mix of outputs (products) and inputs (factors), or equilibrium. The above seems to be the closest consensus theory of the firm at that point in time. Cyert and March note that the theory was also extended to include imperfect markets, and monopolistic/oligopolistic environments. However, the theory of monopolistic/oligopolistic firms, as revisions of the broader theory of the firm, created some dissatisfaction among scholars and resulted in a re-examination at the time of the theory of the firm itself.

Cyert and March identified the two primary difficulties that economists held regarding the theory of the firm. *Firstly*, the motivational and cognitive assumptions of the theory appear unrealistic. Profit maximization is only one goal of the firm, in reality. From a cognitive perspective, having knowledge of the probability distribution of future events was challenged. *Secondly*, the 'firm' in the theory was regarded as unrealistic. It had no complex organization, no problems of control, no standard operating procedures, and no management aspirations inter alia.

In addition, the basic assumptions of rationality were challenged, and those assumptions were two-fold: (a) firms seek to maximize profits, and (b) firms operate with perfect knowledge. With respect to the first assumption, there were two challenges, namely that the maximization of profit is not the only objective of a firm, and further that the maximization of profit may not actually describe the firm's intentions regarding profit. These challenges led to revisions and the introduction of a two-valued utility function and a search theory approach. Regarding perfect knowledge, it was generally accepted that this is unrealistic, but alternative ideas were proposed and summarily rejected by scholars.

On the *second* issue of *defective theory*, Cyert and March noted that there was no consensus on the theory of the firm. The theory, for example, ignores the reality of large-scale firms. The way the theory described decision making processes was also criticized. It was noted that firms do not equate marginal cost and marginal revenue, but rather follow a 'rule of thumb' approach. Interestingly Gordon, in 1948, made the following observations about the theory of the firm: (a) theory should reflect the manner in which costs are apportioned in a firm,(b) the treatment of uncertainty in a firm is materially different to how the firm operates in reality, (c) there exists a material difference between theoretical time and real time, and (d) the executive deals with only a subset of the decisions postulated in theory and the rest are beyond his control. Gordon and numerous scholars subsequently, have pointed to the defective theory of the firm in this manner and based on these principles.

However, these criticisms of the theory have not gone unchallenged. Many defenders of the theory have questioned the methodological relevance, factual premise, and the theoretical

utility of the proposed theory revisions. Some argue that the validity of the theory assumptions is irrelevant, and that it is only the predictive power of the theory that is relevant as a crucial test of the theory. Indeed, some argue that the assumptions are defendable in reality. *Firstly*, the argument is the assumptions are 'reasonable' in the absence of any other. *Second*, some of attempted to empirically show the assumptions are valid to establish a generalized reasonability. The *third* argument holds that firms do not follow the marginal principle consciously, however in the long run they do in order to survive. That is, the theory will predict the viable firms. Finally, it has also been argued that the proposed changes cannot be administered analytically. While new assumptions may be desirable, the mathematical tools and data available for justification were not in existence at the time.

To sum up on the first two issues, it appears that the controversy surrounding the theory of the firm is primarily based on a fundamental misunderstanding regarding what the theory of the firm was initially designed to answer. The design was to support an explanation, very generally, how resources are allocated by a price system. One could thus argue that if this general attempt is successful, the assumptions of the theory are justified. Clearly there exist questions about firm behavior which the theory cannot explain, nor was it designed to explain. These questions relate to the internal allocation of resources and the process of setting prices and output levels. These levels are aggregated to form a view of the economic system. There was no interest in the actual process of firm decision-making.

Regarding the *third* issue, organizational theory may provide a *revised theory* of the firm. Cyert and March suggest that there were three distinct branches of organizational theory: sociological, social psychological, and administrative. However, the authors suggest that the theory focusses on problems that are different from the theory of the firm. The problems studied are not specifically economic. Output levels, for example, are not considered. Only the third branch of organizational theory, administrative, considers decision-making. Unlike the theory of the firm, organizational theory does not consider aggregation. Thus, organizational theory, at the time, only provided a very partial potential for a revised theory of the firm. The seminal work of Cyert and March set about bridging the gap described above. The task was to construct a theory that considers: (a) the firm as a basic unit, (b) the prediction of firm behavior regarding price and resource allocation, and (c) an explicit emphasis on the actual process of organizational decision making.

Existing theory was not equipped to cope with the above questions. The authors suggested further research in creating new theories of organizational goals, expectations, choice, and control. These would form the basis of the critical sub-theories of the theory of the firm. It is not surprising that Cyert and March named their book '*A* Behavioral Theory of the Firm'. *The* Behavioral Theory of the Firm would have been very presumptuous at that point given the embryonic state of the research.

Argote and Greve (2007) analyzed and reviewed Cyert and March's seminal book described above. It was essentially a 40-year anniversary review and reflections on the consequences of the book for the field of study and beyond. They indicated that the book had 'inspired and legimated' new approaches, become a 'foundation element in organizational studies' and social science generally, 'produced a set of hypotheses' that are being used today. They also note, however, that the book was more noteworthy for its breadth, rather than depth. The authors also note that the book has resulted in researchers having a more coherent outlook and approach toward organizational research, even if opinions are diverse. The direct result of the book are the two research fields: organizational learning theory and evolutionary economics.

The authors note that Cyert and March made major contributions in the book and in the following areas: a *behavioral approach*, a behavioral *foundation for theory*, two behavioral *research traditions*, behavioral *hypotheses* and a behavioral *agenda*. Argote and Greve also provide an overview of the principles of the theory of the firm, and an analysis of the key concepts introduced by Cyert and March.

Regarding the behavioral approach and *firstly*, Argote and Greve cite the four commitments of Cyert and March that remain important in current research regarding the theory of the firm: (1) Focus on a small number of key economic decisions; (2) Develop process-orientated models of the firm; (3) link models of the firm as closely as possible to empirical observations; and (4) Develop a theory with generality beyond the specific firms studied. The first and last commitment paralleled the economic theory of the firm at the time (1963). However, the second and third were departures from the theory and resemble significant turning points in organizational theory.

Second, the simulation models in the book have inspired work that was published even recently. Simulation is key for understanding the properties of process models.

Third, arguably the weakest part of the book is the empirical models and quantitative testing. Consider that the book was published in 1963, thus decades ahead of rigorous testing and computer power. Nevertheless, the book did underscore the necessity of empirical justification.

Fourth, the book made an important methodological point that theory should model organizational processes in actual organizations. Organizational theory should *not* oversimplify. For example, using a maximization assumption rather than an actual process model is not useful.

Regarding the behavioral foundation for theory, the book made several theoretical advancements through proposing unique concepts and mechanisms. Key concepts and mechanisms include bounded rationality, problemistic search, the dominant coalition, standard operating procedures, and slack search. These have been used in several organizational theories including institutional theory, population ecology and organizational economics.

The book also produced two behavioral research traditions, namely evolutionary economics and organizational learning theory. Evolutionary economics examines organizations that change through routines that change incrementally through search rather than maximization/optimization. Organizational learning theory has also been influenced, particularly in recent times through learning from experience at all levels of analysis. It is more fine-grained than historical research but emanates from the work of Cyert and March. Another trend is in analyzing how organizational context interacts with experience to affect learning processes and outcomes. How it is captured and coded in the organization, and how it is shares with other units is also receiving attention.

The book also contains several hypotheses and theoretical mechanisms that produce hypotheses. Areas that have built on the work in the book are routines, problemistic search, and slack search.

Finally, the work produced an agenda of sorts for further study. The authors aimed to open the ‘black box’ of organizational theory and the internal workings of an organization. It departed from models prevalent in economics that had limited vision of the theoretical firm. The work also analyses the interaction between the firm and the external environment. They

also encouraged the notion that decisions in organizations are not just through standing groups and committees, but more informal groups as well (the dominant coalition).

The Behavioral Theory of the Firm is clearly one of the most influential management books in history, and Argote and Greve have done a satisfactory job in justifying this. The building blocks of new theory and the time enduring propositions clearly point to a work that was ahead of its time. The article by Argote and Greve was informative and concise in its conclusions given the context of its intent. While descriptive and providing cursory examples of the impact of the book, more tangible examples of research emanating from the work undertaken by Cyert and March would have been useful and more scholarly. For example, the work undertaken by Dosi and Marengo (2007) on the impact on evolutionary economics, discussed briefly above. A further example is potentially including the work of Cohen (2007) who describes how the book builds on the administrative behavior and decision-making processes first outlined by Simon. This additional detail may have been in line with the detail and 'scholarly habits' explicitly encouraged by Cyert and March, but was not included in the paper by Argote and Greve.

SOCIAL CAPITAL

Bryan Collings

Since the late 1990's, the concept of social capital and its role in organizational theory has been receiving much attention. This essay briefly and primarily reviews the seminal work of **Moran and Ghoshal** (1996), and then the later work based on the above by **Nahapiet and Ghoshal** (1998), **Tsai and Ghoshal** (1998), **Coleman** (1988) and **Yli-Renko et al** (2001).

The term 'Social Capital' originally emanated from *community studies* and according to **Jacobs** (1965) was broadly described as the 'networks of strong, crosscutting personal relationships developed over time that provide the basis for trust, cooperation and collaborative action'. However, over the subsequent decades there has not been a concise and consensus-based definition for social capital. Some refer to the 'network', but others refer to both the 'network' and the 'assets' that are created as a result of the network.

Coleman, as a sociologist, introduced the concept of 'social capital' to social theory while taking cognizance of financial capital, human capital and physical capital. He characterized social capital as the relations between people. While analyzing high school drop-outs, he introduced concepts, which have been used in subsequent studies frequently, some of which are discussed below. These concepts are related to the forms of social capital: *obligations and expectations* (which depends on trustworthiness), *information channels*, and *social norms* (accompanied by sanctions). He also introduces the concept of *closure* in the social structure that facilitates the three forms above.

Coleman suggests that social capital is defined by its function (like a chair) and it is not a single entity but many potential entities, but with two characteristics in common: they consist of some aspect of social structures, and they facilitate certain actions within the structure. Social capital is productive and allows for goals to be met that would otherwise not be achieved. Social capital may not be fungible, but activity specific. Social capital differs from other capital in that it inheres in the structure of relations and is likely the least tangible of all forms of capital.

As early as 1975, **Oliver Williamson** argues the broad proposition that economic organizations were effectively a coordinated substitute for the structuring of transactions when markets fail. That is, that transactional based theory or transaction-based economics (TCE) was the basis used for two decades to both explain organizational behavior and influence management. The work, aptly named 'Bad for Practice…', by **Moran and Ghoshal** was courageous in that if produced an alternative viewed and espoused the strong opinion that Williamson and transactional theory more generally was bot incorrect and dangerous in its conclusions as to how organizations and management behave. Moran and Ghoshal argue that organizations possess unique characteristics and advantages for economic activities that differ substantially from the markets. They concluded that TCE was 'bad practice', primarily because it failed to acknowledge these differences. It was on this work that scholars built a very different theory to that of TCE. Scholars initiated research on the sources and conditions of the organizational advantage, rather than the causes of market failure. The creation and sharing of knowledge became the focus. Indeed, Kogut and Zander contradicted TCE by suggesting that the firm is best understood as a 'social community specializing in speed and efficiency in the creation and transfer of knowledge'. Moran and Ghoshal indicate that theory was moving from a focus on value appropriation to value creation.

Nahapiet and Ghoshal's' principle contribution to the body of literature was based on their argument that (a) social capital creates new intellectual capital;(b) organizations are conducive to high levels of social capital; and (c) firms, because of the density of social capital, have an advantage over markets in creating and sharing intellectual capital. They

believe that the particular capabilities of a firm to create and share knowledge is based on a range of factors including (a) creation and transfer of tacit knowledge; (b) the organizing principles by which expertise if structured, coordinated and communicated; and (c) the nature of organizations as social communities.

Despite the new insights at the time, Nahapiet and Ghoshal pointed out that there was no coherent theory to explain them. Social capital is not a unidimensional concept and Nahapiet and Ghoshal attempted to undertake the following: (a) integrate the multiple facets of social capital into three distinct dimensions; (b) describe how each dimension creates and exchanges knowledge and; (c) argue that organizations can develop high levels of social capital as a result. The dimensions referred to above are: the structural, the relational, and the cognitive. These dimensions are also interrelated. The *structural* dimension refers to the veal pattern of connections between people – 'who you reach and how you reach them'. The *relational* dimension refers to the type of relationship that exists (e.g. respect, friendship). The *cognitive* dimension pertains to those resources providing shared interpretations and meaning between the parties. These three dimensions have at least two characteristics in common: (a) they constitute some aspect of the social structure, and (b) they facilitate the actions of the parties in the structure. Furthermore, and unlike other capital, social capital is owned jointly, and no individual can have exclusive rights. In addition, social capital has value, but cannot be traded easily. Social capital makes possible the attainment of certain goals that would be impossible or costly to achieve in the absence of it.

Nahapiet and Ghoshal point out that the consequences of social capital are that is (a) increases the efficiency of action, and (b) when trust is elevated social capital reduces opportunism and costly monitoring processes.

Aside from the dimensions described above to frame the theory, there are two important issues to note with respect to the special advantage of organizations in the development of intellectual capital. Firstly, the debates about different types of knowledge, and second, the level of analysis in knowledge processes. Intellectual capital can be broadly described as the knowledge and knowing capability of a collective. However, there may be multiple sub-categories of knowledge. **Polanyi** identifies *explicit* and *tacit* knowledge. He distinguishes tacit knowledge in terms of its incommunicability. Nahapiet and Ghoshal note the importance of tacit knowledge, particularly when specific and individual skills are required, together with explicit knowledge which can be shared.

The existence of tacit knowledge creates a split in the knowledge assessment. For example, Nahapiet and Ghoshal acknowledge the *limitations* of their study by only analyzing social tacit and social explicit knowledge, while ignoring individual tacit and explicit knowledge contributions to the intellectual capital of an organization.

It is broadly accepted that intellectual capital is created through two processes: combination and exchange. Combination refers to the notion that new knowledge can be created through change and from existing knowledge. Exchange refers to when resources are held by different parties and exchange is obviously a prerequisite for combination. Teamwork is critical. **Moran and Ghoshal** note *three conditions* for effective combination and exchange: opportunity, parties avail themselves, and motivation. They also note a fourth condition: combination capability.

Nahapiet and Ghoshal attempt to wrap a theory for the creation of intellectual capital. Essentially, Social Capital affords the existence of the combination and exchange of intellectual capital and thus the creation of new intellectual capital. Their three dimensions all include the combining and exchanging of intellectual capital. In addition, they further

breakdown the three dimensions into sub-categories. Within the structural dimension, there exists *network ties, network configuration,* and *appropriable organization*. Within the cognitive dimension there exists *shared codes and language,* and *shared narratives*. Finally, with the relational dimension, there exists *trust, norms, obligations,* and *identification*.

Nahapiet and Ghoshal also suggest that the above theoretical social capital framework can explain the organizational advantage of firms. Social capital is jointly owned by the parties. The conditions of *time, interaction, interdependence,* and *closure* are inherent if the firm and less so in the market. This is the basis of the advantage. Social capital is accumulative in nature and thus depends on time. Social capital increases with relational interaction and interdependence, and firms foster these interactions both deliberately and by coincidence. Closure refers to the social, legal and economic boundaries within which the parties interact and are also the bedrock of strong communities. Thus, closure and strong boundaries foster the trust and interaction required for effective development of intellectual capital. Firms have closure, markets tend to be open networks.

The authors conclude that it is the coevolution of social and intellectual capital that forms the basis of organizational advantage. Through the cultivation of connections in an organization and the notion a of a shared identity lead to an organization to grow and retain its intellectual capital. Intellectual capital and organizational advantage lie in social relations, not transactional theory. Nahapiet and Ghoshal also note that their approach is also consistent with resource-based theory in that it highlights the importance of resources: physical, human and organizational.

The authors approach does bear *limitations*, and this could be the basis of further and future research. *Firstly,* their analysis has only concentrated on how social capital develops intellectual capital. Social capital can also have negative consequences. For example, the social environment could be antagonistic or opportunistic and thus not conducive to intellectual capital development. Also, relational and cognitive dimensions can be costly to maintain. The size and complexity of the social structure is important. *Secondly,* the authors only considered the creation of intellectual capital, not its diffusion and exploitation. This need to be analyzed for a fuller understanding of intellectual capital formation. *Third,* the notion of closure is considered critical in the firm advantage, but there is no detail on how such closure works in reality and the extent to which it does contribute to intellectual capital development.

Tsai and Ghoshal note the theoretical framework above, attempt to formulate specific hypotheses on the model and empirically test them based on a survey of 15 business units within one firm. The use of an individual firm is important given the critical issues of closure and existence of boundaries and thus the ‘control’ of the study. The units were decentralized and largely independent, such was the culture of the firm. Interactions were thus voluntary. The date was collected through a questionnaire in 1996 and three managers of each business unit responded. Relational data was acquired through sociometric techniques. Non-relational data were acquired though Likert-type scales.

The study focused on the linkages between the dimensions related to social interaction and the interorganizational arrangements, and testing the hypotheses associated with those phenomena. This included linking structural and relational dimensions, linking relational and cognitive dimensions, linking cognitive and structural dimensions, social capital and resource exchange/combination, trust and trustworthiness, shared vision, and resource exchange/combination and value creation.

The findings support the theoretical framework of Nahapiet and Ghoshal. Generally, support was strong for the argument that social capital facilitates value creation. The three dimensions of social capital assessed: social interaction, trustworthiness, and shared vision had significant effects on resource exchange and combination. There also existed a strong association with product innovation.

Future research could focus on how social capital is accumulated in an organization, non-product innovation growth, and interorganizational evidence for the theory.

The relational view suggests that competitive advantage lies in the difficult to imitate network relationships. **Yli-Renko, Autio and Sapienza** extend this RBV into younger more entrepreneurial firms. Relation-specific assets, knowledge sharing routines and effective rational governance allow small firms to leverage their relationships to acquire knowledge and exploit it. They believe this partially explains why some small firms are successful and others not.

They analyzed a sample of 189 entrepreneurial high-tech firms in the UK to examine the effects of social capital in key customer relationships on knowledge acquisition and exploitation.

Their hypothesized model included social interaction, relationship quality and customer network ties at factors that support knowledge acquisition. They also that knowledge acquisition leads to new product development, technological distinctiveness and lower sales costs (as the independent variables). They ensured appropriate levels of data validity and reliability by pretesting the survey with ten executives and revising any confusing questions in the survey. They also increased the reliability and validity by using multiple, time variant measures like sales, employee and other cost data. They also resurveyed the respondents after a 2-year lag using a shortened and reformatted survey to reduce recall, consistency bias and to increase the response rate. To ensure consistency of sample they included control variables, namely firm age, firm size, economic exchange, internalization, and industry sector.

The results were in line with expectations, except for the impact of relationship quality on knowledge acquisition. Interestingly, this variable had a negative association and the authors surmise that this may be a result of ‘overembeddedness’. That is, very close relationship can isolate small firms from other sources of information. Another explanation is that a very close relationship increases trust and thus potentially reduces the perceived need for monitoring and intensity of information processing. The authors results support the intersect of entrepreneurship and strategic management.

The value of the analysis is that the authors show that each of the dimensions, mentioned by Nahapiet and Ghoshal, are distinct and have different impacts on knowledge acquisition even when analyzed within the same study (rather than as a single dimension). They also show that knowledge acquisition and competitive advantage can be facilitated by relational assets.

Nevertheless, the study had limitations. Being limited to five specific technology sectors in the UK limits its results and analysis *portability* to a broader global economy. It is unclear whether the results would hold in low-tech, less entrepreneurial, and/or older firms. There is also the *methodological limitation* of measurement difficulty inherent in knowledge-based research. The authors also only surveyed those firms that survived, not the failures and as a result *survivorship bias* may be a factor.