Dear colleagues, ladies and gentlemen,

It is an honour and a great pleasure to be here together with Prof. James March, not only because we are fully aware that we have the rare opportunity to converse with one of the founding fathers of the contemporary science of organisation, but also because of the deep influence that his works, ideas, and thought have had on a large number of scholars of our University.

In this short introduction, I will not make any attempt to put all his writings into a full, coherent analytical frame; nor I will pursue an exhaustive reconstruction of his thought: this would be a huge task beyond my capacities and not in keeping with the spirit of this ceremony.

More modestly, I will try to focus on some ideas, from his intellectual path, that has been highly influential on the research issues of many of us (here today); ideas that have enriched and directed our views as economists encouraging us to move beyond our specific disciplines, toward a more comprehensive approach to the social sciences.

The Theory of the Firm during the 1950s


These books were conceived in the 1950’s, when March was working at Carnegie, and participating in the development of a new Graduate School of Industrial Administration. At the Graduate School, March, along with Richard Cyert and Herbert Simon developed a new approach to the understanding of human behaviour in organisation, and institutions; their work opened the black box of organisations, proposing a new vision and allowing a deeper understanding of the organisational life. New ideas, today considered “classic”, such as bounded rationality, problem solving, ambiguity, organisational learning, and standard operating procedures, were created and explored.

To understand the impact of these two books on the traditional approach, it is necessary to remember that the economic theory at that time was really poor and limited in its capacity to explain human behaviours within organisations.

The theories inherited from the past that attempted to explain the nature of organisations were on the ground: on the one hand, there was Taylor’s so-called “scientific” management approach; on the other, the theory of planning, based on the Walras general equilibrium theory and Barone theorems on welfare economics. Finally, the theory of bureaucracy originated by Max Weber, and later developed by Merton and others.

In the first approach organisations were depicted as mechanical processes, in line with the historical effort to rationalise and mechanise large parts of the economic production at the beginning of the century. Charlie Chaplin’s “Modern Times” (1936) give us the vivid imagine of this vision of the modern organisations. This way of depicting organisations was to some extent coherent with the second view, namely the neo-classical theory of the firm: a technological approach in which firms actions and size were explained on the basis of optimal decisions made on the ground of known and given technologies.
But, despite these limits, neo-classical economics gave a strongly influential contribution to the organisational analysis, with the debate of the efficiency of planned systems: the relation between centralisation and decentralisation of economic activities, and the limits of the “invisible hand”, were the key issues of this question.

From Planning to Organisational Learning

The debate began in the early years of this century, when the dilemma concerning the feasibility of a collectivist planned economy was raised by the appearance on the European political scene of parties inspired by socialism as an ideology and a political Utopia. The problem was to answer to the question whether a socialist (collectivist) economic system based on the public ownership of the means of production and on planning could work.

The controversy in part took the form of a clash between the two rival economic camps of neoclassical theory and Marxian theory, but this contrast seemed to loose much part of its relevance when it was shown by Barone, that a planned economy can be treated with the analytical tools of general economic equilibrium theory, and in consequence that it was possible formally to prove the workability of a planned economy; that is, the viability of the ‘pure logic of socialism’ and particularly the existence of equilibrium in planned economies. Barone employed the Walrasian model to give formal demonstration of the fact that equilibrium can exist in a planned economic system.

His position therefore implicitly assumes that the distributed (and unconscious) computation of equilibrium performed in the markets by the ‘invisible hand’ can be replaced by calculation performed directly and consciously by some alternative institution within planned organizations; that is, by what we may call the ‘Central Planning Office’.

This raised the question of whether or not a planned system could be made to work - provoked heated debate in the neoclassical school. The Austrian branch of the marginalist school, Menger, in particular, argued that planning was theoretically impossible, and claimed that the Plan Office could never possess all the knowledge and information required to calculate artificially what the market calculated ‘naturally’ via price movements. In the opposite camp, O. Lange (1937) responded to the impossibility argument with a model of socialist planning based on decentralised decision-making which seemed to settle the question in favour of the socialist position (Keizer 1994). And some years later, in *Capitalism Socialism and Democracy*, Schumpeter argued that not only was an artificial calculation entirely feasible, but the introduction of an extensive bureaucracy would render the system more straightforward than was the case in a market economy. ¹

Hayek wrote a critical rejoinder to Schumpeter’s position (Hayek, 1980: 90) in which he noted that Pareto himself, while suggesting that the problem of calculation was essentially the same in socialist and market economies, had sustained the practical impossibility of socialist calculation, due to the astronomically high number of equations that must be computed.

¹ It would eliminate the decisional uncertainty created in market systems by the existence of a large number of subjects deciding independently (for example, small entrepreneurs competing in the same industry) and reduce unpredictability in managerial decisions (Schumpeter, 1942: 175).
It is clear that all the key elements in the debate on socialist planning can be fully transferred to the question of the feasibility and efficiency of planning in large business organisations. Here again the question of decentralisation is relevant to understand the working of business organisations.

In “Organizations” March and Simon, after an accurate discussion of the comparative advantages of decentralisation over centralisation, note that even Hayek was right in asserting that “given realistic limits on human planning capacity the decentralized system will work better than the centralized”, the existence of external economies could reverse the relative advantage of decentralisation. Therefore, they suggest that, if we limit our analysis to a definition of planning that is essentially static, the question of the degree of decentralisation in organisation cannot be settled once and for all from a priori considerations. They claim that only in dynamic condition (and today we would prefer to say in evolutionary conditions) the question of decentralisation may be clearly set.

The key to moving away from the concept of programming as computation based on static conditions was provided by the acknowledgement that most of managerial decisions take place in conditions of highly unstructured form and very incomplete information.

In 1956 Cyert, Simon and Trow carried out an empirical analysis of managerial decisions which revealed an evident ‘dualism’ of behaviour: on the one hand, a behaviour leded by a coherent choice among alternatives, typical of structured and repetitive conditions; on the other, behaviour characterised by highly uncertain and ill-defined conditions, where the predominant role was played by problem solving activity. 2

The core of the decision making process is therefore the activity of searching and learning that furnishes participants with the information and knowledge they require to achieve their goals. The conditions for standard choice theory to be applied are entirely lacking, because the preferences orderings are highly incomplete, decisions are simultaneously inconsistent and choices are largely ineffective in relation to the goals to be pursued. The most important part of the process is driven by the ability of the subjects to formulate and solve problems.

Bounded rationality, unprogrammed decisions and learning are the key aspects of human behaviour in organisations under ill-defined conditions.

This new vision leads March and Simon to a completely redefined description and analysis of “planning”: planning is no longer a static and mechanic activity based on rational decisions immersed in a world of complete information. Planning is now based on “organisational learning”. In “A Behavioral Theory of the Firm” and subsequent works, March arrives at a definition of organisations as decentralized structures that adapt to external change through an internal process of modifications, coping with uncertainty in the every-day decisions.

Search therefore becomes a key activity in organisation, as well as being a resource that can be differently improved within different organisation, giving rise to differentiation in organisational performances. Adaptation is the crucial element that may generate differentiation and sub-optimalities. Let me cite a short statement from “A Behavioral Theory of the Firm” p.174

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2 In this last set of conditions, not only must subjects gather information, they must also be able to select the information and knowledge that is effectively relevant to their purposes and to assimilate it into the system of knowledge that they already possess. To do so, they must have a ‘level of competence’ adequate to the situation of their choice; they must, that is, implement skills of learning and problem solving.
Adaptation in search rules If we assume that search is problem-oriented, we must also assume that search rules change. Most simply, what we require in the models are considerations of the following type: when an organization discovers a solution to a problem by searching in a particular way, it will be more likely to search in that way in future problems of the same type; when an organisation fails to find a solution by searching in a particular way, it will be less likely to search in that way in future problems of the same type. Thus, the order in which various alternative solutions to a problem are considered will change as the organization experiences success or failure with alternatives.

In a similar fashion, the code (or language) for communicating information about alternatives and their consequences adapts to experience. Any decision-making system develops codes for communicating information about the environment. Such a code partitions all possible states of the world into a relatively small number of classes of states. Learning consists in changes in the partitioning. In general, we assume the gradual development of an efficient code in terms of the decision rules currently in use. Thus, if a decision rule is designed to choose between two alternatives, the information code will tend to reduce all possible states of the world to two classes. If the decision rules change, we assume a change in the information code, but only after a time lag reflecting the rate of learning. The short-run consequences of incompatibilities between the coding rules and the decision rules form some of the more interesting long-run dynamic features of an organisational decision-making model. [Cyert and March, 1992, p. 174]

Organisations therefore evolve through problem solving and problem-solving activities lead to modifications in the internal division of work. Categorisation is the basic driver for the generation of a division of problems and therefore the source of the correlated errors and biases in decision making.

Therefore, a relevant conceptual improvement is that not only do organisations learn, but they make errors during this process, and – as the March behavioural description shows – since adaptation may easily lead to sub-optimal organisational configurations, errors may be systematic and stable in the long run.

In recent years, a large number of results deriving from experimental economics has demonstrated that human decisions display systematic deviations from fully rational ones, and that in many cases ‘errors’ persist even when the rational solution has been explicitly shown to the subjects. This happens both in individual and team decision-making. In the case of teams and organisations, it may happen that systematically erroneous decisions are made by organisations, and that they remain trapped in sub-optimal routinised strategies, which are not changed even when they are highly sub-optimal.

In a paper co-written with Levinthal, March singles out a number of ‘traps’ into which an organisation may fall during the process of organisational learning, and among them he analyses the ‘success trap’. In this case the tendency of organisations to focus on success may induce them to persist excessively in the use of procedures and actions that have been associated with successes in the past. Consequently, an organisation that falls into this trap tends to anchor its activity in processes of organisational exploitation, to the detriment of research and innovation. Moreover, this tendency may induce organisations not to adapt, or to adapt with difficulty, to changed environmental conditions.

Therefore, the vision of the modern business firm at the same time moves more closely towards a realistic approach based on experience, and to the building of a new robust conceptual frame, with which to understand and explain it.

Far from being the perfect machines depicted by tradition, that optimally decide their strategies using all relevant information, business organisations adapt to evolving reality,
trying to build up their strategies under conditions of highly unstructured decisional frames. Despite their uninterrupted process of learning, they can be sometimes locked-in persistent sub-optimal conditions.

Even though the original notion of “planning” as static computation is overcome by this new theoretical approach, there remains an important question raised by Hayek in the original debate to be taken in consideration.

**Incentives, motivations, conflict: the business organisations as social creation.**

Hayek’s polemic against the possibility of a planned system to work as a market economy was not based solely on the complexity of economic calculation; he contended that, since a planned system lacked competition, the incentives that would ensure its efficient functioning were absent.

‘To assume that it is possible to create conditions of full competition without making those who are responsible for the decisions pay for their mistakes seems to be pure illusion ’ (Hayek 1980: 186)

Therefore Hayek viewed the role of competition very differently from Walras, and considered the missing allocation of responsibilities as a crucial reason for the inefficiency of planning, beyond the question of calculation complexity. In his polemic, Hayek was suggesting that the limits of planning process were rooted in the impossibility to allocate responsibilities and incentives; an issue that has received serious attention in the contemporary economic theories, and mainly during the 1980’s, when Arrow, by proposing the principal-agent theory, explicitly accepted the idea of information asymmetries and focused on the reduction of conflicts among agents. His view is based on the consideration that, given the asymmetries in knowledge and information between individuals within business organisations, the “principal” is prevented from observing directly the abilities and performances of the “agent”.

Therefore the strategy suggested is to design a system of incentives for reducing the discrepancies among the principal's and the agent’s goals. This approach, developed more than thirty years after “Organizations” and “A Behavioral Theory of the Firm”, while responding in a very ingenious way to an important question raised in these books, namely the management of conflict, limits the nature of the problem and in my opinion does not respond fully to the question of the reasons of the feasibility and efficiency of planned organisations in market economies.

Cyert, March and Simon frame this question in a more rich and open way: whilst in fact in the classical economic approach individuals are supposed to pursue their own interest in a egoistic way, and sometimes in opportunistic way, March’s view presupposes a more varied and richer depiction of human beings: humans in organisations have motivations, they are capable of participating in organisational life and goals, not uniquely as consequence of an efficient design of incentives, but also for reasons related to the share of organisational values, sometimes involving altruism.

This leads us to the idea of organisations as social creations and as institutions. In my view, this is the spirit of Rediscovering Institutions, that March published with Johan Olsen in 1989.

I will not discuss this book that I warmly recommend to my fellow economists, because provides rich intellectual instruments to re-visit the role of economic institutions.
From organisation as a mechanical process to integrated institutions

Before concluding, let me focus on some final considerations: March’s picture of organisations works at two different levels: at the first level, mainly analysed in “A Behavioral Theory of the Firm”, organisations are characterised by bounded rationality, adaptation, unresolved conflicts, and sometimes permanent sub-optimalities. At this level, decisions may be affected by high uncertainty and ill-defined conditions but rights and responsibilities are supposed to be clearly allocated and incentives reasonably well defined.

What happens, if rights, rules and responsibilities are also not distributed in a clear pattern? Explorations in this direction characterise some of the March publications in the 1970’s and 80’s. Among many of them, let me quote from “A garbage can Model of Organizational Choice”, written in 1972 jointly with Michael Cohen and Johan Olsen. The model represents in my view the “second level” of March’s analysis, in which rights and preferences are also poorly defined.

Rather than describing the conditions, on which the “Garbage can” model is based, referring to institutions like universities, an exercise that I will not pursue in order to avoid bitterness, let me apply these conditions to an institution which is supposed, on the contrary, to resemble very closely the principles of so-called “scientific management”: the army.

Contrary to the common sense that sees the army as a perfect organisation, where all relevant information is available to the commanding officers and where decisions are optimally taken and orders are promptly executed I propose to interpret it as an organisation affected by high internal and external uncertainty, to which March’s view reasonably applies.

I will do it by reading a page from Book Eleven of Leo Tolstoy’s War and Peace.

WAR AND PEACE by Leo Tolstoy
Book Eleven
CHAPTER II, part 2

On the evening of the twenty-sixth of August, [the commander in chief] Kutuzov and the whole Russian army were convinced that the battle of Borodino was a victory. Kutuzov reported so to the Emperor. He gave orders to prepare for a fresh conflict to finish the enemy and did this not to deceive anyone, but because he knew that the enemy was beaten, as everyone who had taken part in the battle knew it.

But all that evening and next day reports came [in one after another of unheard-of losses,] of the loss of half the army, and a fresh battle proved physically impossible.

It was impossible to give battle before information had been collected, the wounded gathered in, the supplies of ammunition replenished, the slain reckoned up, new officers appointed to replace those who had been killed, and before the men had had food and sleep. And meanwhile, the very next morning after the battle, the French army advanced of itself upon the Russians, carried forward by the force of its own momentum now seemingly increased in inverse proportion to the square of the distance from its aim. Kutuzov’s wish was to attack next day, and the whole army desired to do so. But to make an attack the wish to do so is not sufficient, there must also be a possibility of doing it, and that possibility did not exist. It was impossible not to retreat a day's march, and then in the same way it was impossible not to retreat another and a third day's march, and at last, on the first of September when the army drew near Moscow- despite the strength of the
feeling that had arisen in all ranks - the force of circumstances compelled it to retire beyond Moscow. And the troops retired one more, last, day's march, and abandoned Moscow to the enemy.

For people accustomed to think that plans of campaign and battles are made by generals - as any one of us sitting over a map in his study may imagine how he would have arranged things in this or that battle - the questions present themselves: Why did Kutuzov during the retreat not do this or that? Why did he not take up a position before reaching Fili? Why did he not retire at once by the Kaluga road, abandoning Moscow? and so on. People accustomed to think in that way forget, or do not know, the inevitable conditions which always limit the activities of any commander in chief. The activity of a commander in chief does not all resemble the activity we imagine to ourselves when we sit at ease in our studies examining some campaign on the map, with a certain number of troops on this and that side in a certain known locality, and begin our plans from some given moment. A commander in chief is never dealing with the beginning of any event - the position from which we always contemplate it. The commander in chief is always in the midst of a series of shifting events and so he never can at any moment consider the whole import of an event that is occurring. Moment by moment the event is imperceptibly shaping itself, and at every moment of this continuous, uninterrupted shaping of events the commander in chief is in the midst of a most complex play of intrigues, worries, contingencies, authorities, projects, counsels, threats, and deceptions and is continually obliged to reply to innumerable questions addressed to him, which constantly conflict with one another. Learned military authorities quite seriously tell us that Kutuzov should have moved his army to the Kaluga road long before reaching Fili, and that somebody actually submitted such a proposal to him. But a commander in chief, especially at a difficult moment, has always before him not one proposal but dozens simultaneously. And all these proposals, based on strategies and tactics, contradict each other. A commander in chief's business, it would seem, is simply to choose one of these projects. But even that he cannot do. Events and time do not wait. For instance, on the twenty-eighth it is suggested to him to cross to the Kaluga road, but just then an adjutant gallops up from Miloradovich asking whether he is to engage the French or retire. An order must be given him at once, that instant. And the order to retreat carries us past the turn to the Kaluga road. And after the adjutant comes the commissary general asking where the stores are to be taken, and the chief of the hospitals asks where the wounded are to go, and a courier from Petersburg brings a letter from the sovereign which does not admit of the possibility of abandoning Moscow, and the commander in chief's rival, the man who is undermining him (and there are always not merely one but several such), presents a new project diametrically opposed to that of turning to the Kaluga road, and the commander in chief himself needs sleep and refreshment to maintain his energy and a respectable general who has been overlooked in the distribution of rewards comes to complain, and the inhabitants of the district pray to be defended, and an officer sent to inspect the locality comes in and gives a report quite contrary to what was said by the officer previously sent; and a spy, a prisoner, and a general who has been on reconnaissance, all describe the position of the enemy's army differently. People accustomed to misunderstand or to forget these inevitable conditions of a commander in chief's actions, describe to us, for instance, the position of the army at Fili and assume that the commander in chief could, on the first of September, quite freely decide whether to abandon Moscow or defend it; whereas, with the Russian army less than four miles from Moscow, no such question existed. When had that question been settled? At Drissa and at Smolensk and, most palpably of all, on the twenty-fourth of August at Shevardino and on the twenty-sixth at Borodino, and each day and hour and minute of the retreat from Borodino to Fili.
Therefore, the question we have been discussing from the beginning is now completely reversed: instead of considering organisations as mechanical processes, in which decisions take place optimally, we wonder how it is possible that organisations define and achieve their goals when facing conditions of high uncertainty and unclear allocations of rights, rewards and responsibilities.

This question is, in my view, a core problem in the background of many of March’s publications since the 1970’s. Here he assumes a new and more radical vision of organisational phenomena. Beyond the vision of large business organisations as coalitions of interests incapable of resolving completely the internal conflicts, by introducing the distinction between aggregative and integrative institutions, March leads us to understand the fragility of economic and political institutions, and the caducity of the human actions based merely on egoistic interests.

One lesson to be learned from the evolutions of his ideas is that the intellectual instruments inherited from economic theories are insufficient to cope with the complexity of the modern market and non market organisations. In order to explain economic phenomena, and specifically human activities in organisations and institutions, we need to set aside our specific disciplines and accept the lessons, which derive from other social disciplines: sociology, political economy, and psychology. This is the difficult and exciting challenge that economists and social scientists have to face. A challenge that leads to an extension of the domain of economics provided that we are able to incorporate and enrich our discipline with the ideas coming from the other social disciplines.

It is because we fully recognise the outstanding contributions made by Professor James March in this sphere that we consider it a privilege to propose him to become a member of our Faculty of Economics.
References


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