Rationality, Information Power
and Institutional Theory

Alessandro Morselli ✉
University of Rome Sapienza

Abstract: The aim of this paper is to show both the importance of the role played by 'power' in economic analysis and the way in which it leads to the exercise of economic power of one unit over other units through information asymmetry. This power often derives from inequality in the amount of information possessed. The problem then arises of identifying tools to reduce the asymmetric information that generates the 'domination' effect of one individual over another. Institutional arrangements have been identified as alternative tools to the price mechanism, in order to favour individual decisions in a scenario marked by power, information and cognitive bounds. Thus, it will be highlighted how power is often based on information asymmetry and how institutions can sometimes mitigate the latter, so as to counteract the formation of unbalanced relations.

✉ Address: University of Rome Sapienza, Department of Political Sciences, P.le Aldo Moro 5, 00185 Roma, Italy. Mail: alessandro.morselli@uniroma1.it.

1 Introduction

Focusing the analysis on the laws of market functioning leads to the representation of economics as a science of voluntary and therefore peaceful arrangements (Pantaleoni, 1963, p. 330). But if we enter the historical and institutional field, we move away from voluntary and peaceful arrangements, since we do not encounter any individual subjects as such, but rather groups, classes, nations, as subjects endowed with a power of choice, whose aims are not always compatible (Perroux, 1978, p. 13). And it is precisely the articulation of groups in society that highlights the importance of the role of power in economic analysis.

In his search for a new vision of economic reality, Perroux (1964, p. 91) assumes as a basic unit not the single individual of the perfect competition pattern, but the group understood as a specific combination of subjects, endowed with a certain power to influence the choices of lower groups. Taking into account a ranking of groups, on the basis of the different degree of power, the automatisms of adaptation to the market price (price-takers) are reduced, which requires a reformulation of the way in which equilibrium is established. Thus, we are not faced with a purely passive adaptation of the price mechanism, but with a mixture of exchanges and powers.

Perroux (1965, p. 60) starts from a neo-marginalist position, then moves closer and closer to the neo-institutional approach and sets out to find the general dynamic laws regulating medium-term and long-term changes in economic systems. The most relevant points of this research are represented by the analysis of market forms other than perfect competition, to include the important role of economic power. Thus, equilibrium-related reasoning is modified in terms of a dynamic approach; in fact, dynamics implies the existence of forces and powers that are not analyzed by statics, while highlighting the propagation phenomena arising from technical progress and the effects of domination exercised by individuals over other individuals.

Human behavior is involved here through rational choice theory. According to Elster (1993, p. 43), this theory, which defines human behavior, assumes a three-stage decision-making process: 1) given an individual's beliefs and desires, rational action is the best tool to achieve them; 2) given the available information, beliefs must be optimal, i.e., those that come closest to a true interpretation of reality and the causal links that link phenomena together; 3) given preferences, the amount of information gathered to make the choice must be optimal, so as to minimize the cost in relation to the expected benefit of the choice.

Neo-institutional theory criticizes the neo-classical model of rationality, which only considers the first stage of the abstractly optimizing decision-making process, that of converting given information and beliefs into maximizing decisions. There is criticism on two aspects, which correspond to the other two stages of the decision-making process, namely the formation of thinking patterns for interpreting sensory data and the

processes of acquiring the necessary information. On the one hand, we have to consider the problem raised by Hayek (1945, pp. 519-520), which concerns the information constraints that condition the collection and use of knowledge by agents. All important information is only provided by relative prices in the presence of complete and competitive markets. However, markets are actually neither complete nor perfect and not all the information that individuals need in their market choices is conveyed by prices. Arrow (1971) states that information is insufficient, fragmented, dispersed and expensive to acquire, verify and transfer.

On the other hand, we have to take into consideration the cognitive and computational bounds[1] which prevent a complete application of rational calculation mechanisms (Simon, 1982). In fact, within a complex and uncertain context, the agent has bounded cognitive capacities (Simon, 1958) and is not able to achieve maximization of his welfare function according to the postulates of substantial rationality of standard theory. In a world marked by bounded rationality, agents will be satisfied with a satisfactory level of their objective function, without achieving optimization.

In a scenario where reality is complex, we find individuals with cognitive bounds having different information, developing asymmetric information (when one individual has more information than another). Thus, agents are forced to deal with extraordinarily complex environments featuring bounded rationality and information asymmetries.

Information asymmetry leads us to analyze Perroux's 'domination theory' (1948). Thus, agents relate to each other through asymmetrical relations, not as simple passive units, but as active subjects (Perroux, 1950). All this is compatible with a strategic rationality aimed at exercising strategic power in the context of interactive choices. If relations are asymmetrical, it is clear that one unit exercises a power (domination) to modify behavior and economic results over the other units. This power is determined by inequality in the amount of information possessed[2].

Therefore, individuals need tools to manage the information they need to make their choices. Specifically, institutions represent alternative tools to the price mechanism, thanks to which agents can remedy the bounds of their information management capabilities, so as to simplify rational choice mechanisms and reduce the costs of social interaction. In this paper, we will try to highlight those institutional arrangements make it possible to

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[1] As Broadbent (1958) states, in the first phase of information gathering, the acquisition of information from the environment is selective, therefore it is inevitable that the subject only filters the information that he considers relevant. Moreover, the information acquired remains in the mnestic register for a limited time and in a limited number of information units (Miller, 1956). Finally, the ability to retrieve events from long-term memory is also limited; in fact, an individual often reconstructs rather than remembers (Barlett, 1932).

[2] The heterogeneity of the information structure makes it difficult to achieve a general competitive equilibrium and thus ideal perfect competition.

stabilize and coordinate different and conflicting expectations and goals. The information contained in an institution enables agents with bounded rationality to effectively use the information necessary for their actions, so as to reduce information asymmetries, which produce the 'domination' effect of one individual over another.

Thus, it will be shown when power is based on information asymmetry and under which circumstances institutions are able to mitigate such information asymmetry, also through examples.

2   Uncertainty, Information and Institutions

Information is not obtained through a linear pathway, but through thinking patterns and cognitive structures that reflect the cultural and institutional context. Institutions provide mental structures for the formation and transmission of relatively stable and mutually relatable theories and beliefs, thanks to which individuals are able to reduce the various sources of uncertainty arising from information and cognitive constraints. Simplifying rules and procedures are developed in order to overcome the uncertainties arising from the difficulties of knowing and relating to the environment. The resulting institutional context limits the individuals' field of choice by forcing their relations into a rigid structure (North 1994, p. 51).

In fact, adhering to a general rule or organizational pattern limits the weight of uncertainty in the decision-making process, since less information is needed to make the choice and information processing is simplified (March and Olsen, 1984).

As Heiner (1983) states, any form of rule-driven behavior can be interpreted as the adaptive response to complexity and uncertainty, which arises from the environment in the presence of repeated choices. Moreover, he adds that uncertainty exists because agents are unable to understand the complexity of decision-making problems, presenting them with serious problems in selecting preferred alternatives.

A maximization criterion would produce higher decision costs than the adaptation of a stable model of conduct, given the impossibility of specializing in the collection and processing of all the necessary information. On the other hand, what enables us to take decisions quickly is the existence of a set of institutions that are considered obvious, because the exchange structure has been institutionalized in such a way as to reduce uncertainty (North, 1994, p. 47).

According to Elster (1983), compliance with the rules generates benefits from taking on credible commitments. Self-binding to a model of conduct, making one's commitment known to others, makes it possible to achieve goals that would otherwise be unattainable, according to the famous image of Ulysses who decides to tie himself to the mast to escape the song of the Sirens.

Vanberg (1994, p. 34) affirms that an individual must renounce his own calculation skills in order to follow a rule. He must decide not to be rational, through a rational choice. Imagining a different perspective, rule-following

choices can be examined with a different notion of rationality, i.e., an adaptive rationality that considers the complex and costly ways of acquiring, using and transmitting knowledge.

Institutionalized practices reduce uncertainty by facilitating the transmission of information between social players and creating regularities in everyday life (Hodgson, 1998). The emergence and consolidation of conduct regulation patterns provide other social agents with information about the likely actions of others, supporting the formation of compatible expectations (Schotter. 1981, p. 109).

Langlois (1986) points out that institutions have an informative support function, helping reduce the size of the agent's problematic situations and the degree of knowledge questions he is asked.

Thus, institutions do not represent mere constraints, but are supportive in order to govern the processes of knowledge acquisition and development, by affecting the evolution of the structure of the rules of the game and the identities of individuals.

3 The Information Structure

Imperfect information is very common among economic agents; indeed, it is difficult to imagine a world marked by perfect information. In this sense, let us recall the work of Stigler (1961), who introduced the hypothesis of partial and costly information. Recognition of information imperfection has brought to light the possibility of incomplete knowledge, so that the quest to acquire more information can bring economic advantages. At the same time, since this is an expensive process, the problem of optimal search arises (Stiglitz, 1985).

The turning point in the analysis is not so much to point out that economic agents have incomplete information at their disposal, but to state that it cannot be differently. One never has all the information one needs, because it is difficult to get it. Imperfect information is the inevitable consequence of a condition in which a large part of the information is created by the behavior of individuals and evolution over time.

A second line of research concerns the situation of asymmetric information. The structure of the information possessed by different agents emphasizes the difference with an imperfect information scenario (described earlier). In a context of imperfect information, individuals have a partial view of the economy, but all the information needed to optimise their decisions has a homogeneous content for all. We are only dealing with an information imperfection, and no possible information asymmetry is taken into account.

On the other hand, when asymmetric information is introduced into economic analysis, some agents are better informed than others or have more information than others. Thus, we are faced with heterogeneity in the information structure. Akerlof (1970) drew attention to the hypothesis of asymmetric information and the possibility that the price system is not only a rarity indicator, but also, for example, information on the qualities of a good. Akerlof deals with asymmetric information to refer to situations in

which information is chronically unevenly distributed, such as in the life insurance market or the second-hand car market. In the first case the advantage is the customers', in the second case the advantage is the sellers'. One party is unable to have the necessary information and is aware that the other party has more information (knowledge of the true value of the car or the true health conditions of the person to be insured). As a result, the second-hand car market is not able to discriminate between good and bad products, as it provides poor products; and a life insurance market for people over the age of 65 may not be established.

In the remainder of this paper, it is appropriate to maintain the distinction between the two programs of microeconomic information analysis. In particular, the program studied by Stigler on the imperfect or partial, but homogeneous, information structure in which all agents can potentially dispose of the same information; and the program analyzed by Akerlof in which, on the other hand, we find ourselves in the presence of a heterogeneity of the information structure and therefore individuals cannot benefit from the same information context. Then we are faced with an asymmetry, or substantial inequality, in the possession of information.

In models with imperfection, agents adopt active information seeking behavior, whereas in the presence of asymmetries the strategic interactions of financial players are studied, with the introduction of antagonistic and conflictual behavior (Stiglitz, 1979). In the first case we are in the presence of acquisition of additional information, in order to reduce decision-making uncertainty; in the second case there are agents with different information, and some are in possession of more information. Hence agents will be encouraged to obtain the information possessed by other individuals, since they derive an informational, and consequently economic, advantage from it. This economic advantage is treated in terms of information rent, or information power, i.e., an economic advantage linked to the possession of an information advantage. In this scenario, information is regarded as a strategic variable for determining influence and power in economic behavior (Thepaut, 2002).

4 Information, Information Power and Economic Advantage

Economic advantage, or economic power, can be studied through Perroux's domination theory (1948). Considering two economic units, he states that A exercises a domination effect on B, when A exerts a definite influence on B, without the opposite being possible (B > A). In order to understand the meaning of this, it is sufficient to think of A determining the change in production volumes by also indirectly forcing B to follow him.

The analysis of information power aims at describing the behavior of agents who use information as a strategic power variable to gain an economic advantage. In this context, information assumes the role of a strategic determining variable in the process of production, consumption and distribution (Perroux, 1950). Thus, the study of information power

presupposes the definition of the environmental and behavioral hypothesis of individuals on which the concept is based, especially in order to propose a definition and measure of this power.

The first strategic hypothesis lies in information asymmetry and consists in an inequality in the possession of strategic information between different economic agents. This hypothesis is based on environmental (objective) or behavioral (subjective) conditions, since information asymmetry applies both to specific subjects and to the natural environment in which they operate. It should be noted that the ability to produce, collect, process, transmit and receive any information varies from subject to subject. It is related to individual cognitive capacities, but also to economic factors (Rallet, 2000).

Moreover, as Williamson (1995) states, information asymmetry derives from the behavior of individual subjects. Indeed, if one admits that information is a source of power that can determine an economic advantage for its holder, one can understand why financial players have an interest in permanently generating information, thus determining its asymmetries.

The latter hypothesis is linked to maximum self-interest seeking. According to Diamond (1971), each agent operates according to pre-established rules which everyone must obey and there is no possibility of a discrepancy between this behavior and the rules of the game. However, economic agents do not only seek self-interest as stated by classical theory. With Adam Smith (1776), the individual contributed to the achieve the general interest by pursuing his own interest. In this theoretical conception of self-interest seeking, the exchange between the different agents takes place under conditions of equality between the parties and the interventions in the exchange process achieve all the advantages associated with the specific initial endowments of resources and the incomes of the productive factors possessed. Thus, as we have already said, each agent acts according to pre-established rules.

On the other hand, the pursuit of maximum self-interest concerns another kind of vision. On the one hand we have Georgescu-Roegen's (1971) observation about the continuous search for growth of possible personal advantages, which is also pursued outside the neoclassical context. The growth of what everyone can claim as their own, and it is precisely the pursuit of this end that makes the individual a fully-fledged agent in the economic process.

On the other hand, the distinction made by Williamson (1985) between the levels of self-interest seeking is highlighted: 1) the highest degree, i.e., opportunism; 2) the intermediate degree, i.e., simple self-interest seeking; 3) the lower degree, virtually zero, due to the subordination of dominant rules, which define, on the one hand, individual behavior and, on the other, the systemic conditions that make that behavior practicable. Williamson sees opportunism as something akin to deceptive overpowering. He considers adverse selection and moral hazard as two attitudes that sum up the concept of opportunism. More generally, opportunism implies the dissemination of incomplete or misleading information, leading to inefficient decision-making responses.

Joffre (1999) also states that opportunism characterizes misleading behavior in order to achieve individual benefits beyond the normal exchange-related profits, and the opportunistic agent is ready to use deceit and guile without implying moral judgement. Rainelli (2010) shares the same views - he thinks that manipulation or insufficient information becomes a practice with the aim of pursuing consequent advantages.

The introduction of opportunism into economic analysis makes it unnecessary to establish the degree of intensity with which an agent is willing to implement it, just as the level of acquiescence to which other agents are willing to accept it is unimportant. In any case, problems of systemic organization arise; indeed, we must assume the emergence of activities of research and dissemination of information, as well as of manipulation of the same information. The aim of the agents, therefore, becomes the pursuit of maximum possible profit, and the consequent economic power.

5   Competition and the Domination Effect

If we abandon the market structure marked by pure competition, it is no longer possible to think of an exchange network as independent of an intertwining of forces. These intertwining paves the way for the domination effect (Perroux 1950).

Pure exchange is a borderline case, since any exchange involves a confrontation-clash between private influences and public power. The exercise of the domination effect by institutions can be seen as an important corrective action in the economic scene in which the domination effect arises between companies and private bodies. If we had no doubt that the economy tends spontaneously towards equilibrium, through the automatic movement of prices, we could not deal with the domination effect, and the dominant units could continue using their unilateral influence to their advantage.

The data on which the Pareto equilibrium is based do not represent the domination effects that some social groups achieve over others. In this theoretical system, choices are made by a large number of units, comparable in size and power, whose economic horizons do not overlap and whose economic plans are compared through the price system. Thus, the domination effect cannot be exercised by any economic unit or group of units over others. However, such a pattern is often far from reality, since economic units and groups design plans that are dominant and dominated vis-à-vis each other (Rothschild, 1976, pp. 76-77).

By means of a few examples it is possible to identify contexts where the domination effect arises: 1) P_1 imposes a quantity on P_2, i.e., forces P_2 to modify his maximisation calculations; 2) P_1 imposes on P_2 the maximum and minimum of one of his constituent quantities, which differ from those imagined by the author of P_2; 3) P_1 forces P_2, P_3, … P_n to coordinate before starting their activity, trying to eliminate incompatibilities. In these cases, the dominant plan is either the plan of a state with respect to the plans

of other states, or that of a state with respect to other private groups, or of a private group with respect to individual economic units.

In this context, if we assume a dynamic economy, the possibilities of shifting, stopping or reversing the domination effect are evident. Partial or global adjustments are the consequence of an intertwining of forces between unequally powerful parties. Then the domination effect no longer arises only sporadically, but can be traced in the relations between individual units and between unified groups of production and exchange. Thus, competition is not a system that cancels out economic domination, but one in which the domination effect is kept under control.

The idea of domination is strengthened by the work of Pagano (1999), who examines the possibility of integrating power into economic theory. He claims that power can be a bi-positional good if it implies the domination of one individual over another or a pan-positional good if it implies the domination of a particular individual over all other individuals. Why is power a positional good? If we consider an economy of two individuals, it will be impossible for individual A to consume a positive amount of power if individual B does not consume negative amounts. It is not possible for individual A to dominate if individual B is not dominated. Therefore, power is a zero-sum or positional good [3].

It is pointed out that power can also be analyzed from a legal point of view, for example, through the pioneering work of Hohfeld (1913). A has a power vis-à-vis B if it can alter B's legal situation (extinguish one of its duties, or create one). Thus, according to this approach, a power is compatible with a duty not to carry out the actions that determine the change in legal positions [4].

Hohfeld is considered a forerunner of legal realism, since he offers a paradigmatic taxonomy of legal positions that turns out to be influential for American institutionalism between the two wars (Vatiero, 2020).

6 Information and Bounded Rationality

According to Simon (1982), in a complex scenario dominated by uncertainty, agents have bounded cognitive capacities when making decisions. Economic agents are active subjects of decisions and consequent effects, so they are not neutral, as neoclassical theory claims. In the standard version of the neoclassical theory, atomized agents are not able to act on economic variables (price takers) that represent systemic reference data for decision-action. According to Perroux (1975), each economic agent hypothetically possesses four features that give him the typical attribute of active subject: 1) he is an organization, as a combination of physical and intellectual activity that acts on the context and on the other systemic players; 2) he is an individuality, since each agent is different from the others; 3) he is a member of a group and is included in a system of social

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[3] For more on positional goods see Pagano (1999, pp. 53-61).

[4] For more on legal relations see Hohfeld (1913).

relations; 4) he is a decision-maker, since the information resources that participate in his decision-making function are different from those of the other player-decision-makers.

The individual reacts to everything affecting his activity and adapts to new circumstances, and his adaptation is neither passive nor automatic. Depending on his or her processing capacity, he or she continuously learns within the framework of his or her activity, modifying systemic data more or less effectively. Therefore, individual agents or operational units such as enterprises, relate through asymmetrical relations and not as simple agents or passive units, but as active subjects and units (Chassagnon, 2014).

More precisely, as Perroux (1973) states, a unit has three dimensions: 1) the energy of the agent, or agents, that make up the unit; 2) the structural combination of its instrumental means, namely the organization; 3) the decision, namely the adaptation of means to aims. The unit is defined as active if it is able to change the context, i.e., if it is capable of modifying the behavior of the other units it deals with. It is evident that this aim is linked to its capacity to inform itself and to make anticipations on which to implement informed actions, thus modifying the context. All this is compatible with a "strategic rationality" directed at exercising 'strategic power' in the context of interactive decision making (Dockès, 1999).

We have repeatedly argued that information is imperfect and asymmetric, that its acquisition takes time, that it has a cost, and that it is not conveyed by prices alone. Taking into account all these distortions imply a significant impact that leads us not to consider information as neutral. On the contrary, information plays an active role in the formation of real economic variables and, above all, promotes the emergence of new forms of economic coordination distinct from the market. This position can be argued through the example of the second-hand car market used by Akerlof (1970), which shows how information asymmetry regarding the quality of vehicles can lead to the failure of the market and its disappearance.

Thus, information asymmetry affects the volume of transactions. Information costs are a further factor in determining the sizes and forms taken by economic organizations. They can deter monopolistic enterprises from continually adjusting their prices to market changes, thus leading to decreases in output and the emergence of unemployment if demand falls. Faced with a fall in demand, the enterprise can make quantity adjustments at least in those cases where it can imagine cost constraints exceeding the gains that can be achieved through price changes. Such costs are, for example, attributable to the preparation of new labels or new catalogues and their dissemination. Thus, as Ménard (1990) states, through information costs, it is possible to explain the existence and genesis of organizations and the role of economic coordination as an alternative to the market.

In the light of the above, the conceptualization of economic power turns out to be relational (Eucken, 1944, p. 236; Preiser, 1948), in the sense of evaluating forms of relations involving a conflict of interest between units aiming at economic benefits. If the relations are asymmetric, it is evident

that one unit exerts a power to modify behavior and economic outcomes on the other units; 'power' is determined by inequality in the amount of information possessed. For example, a famous application of information asymmetry can be found in Akerlof and Miyazaki's (1980) study of efficiency wage theory and in implicit contracts. They sought to explain both why the real wage may differ from the marginal productivity of labor and the assumptions of cooperation agreements.

7 Information Power: A Component of Social Action

The scientific knowledge that we define as social science concerns activities and, consequently, those activities that individuals carry out in order to achieve goals, dealing with one another (Locke, 1971).

We can represent a social system by means of an elementary diagram. The circle represents a system, input and output are a sub-system and are related to each other in a transformation relation, the triangles represent a sub-system of three elements. Triangle 1 is an *element of power*: e.g., A's ability to influence B; triangle 2 is an *element of relation*: there is a relation between A and B and mutually between B and A, i.e., an interrelationship; triangle 3 is an *element of rationality*: A adapts the means to achieve his plan to his aims; so, does B.
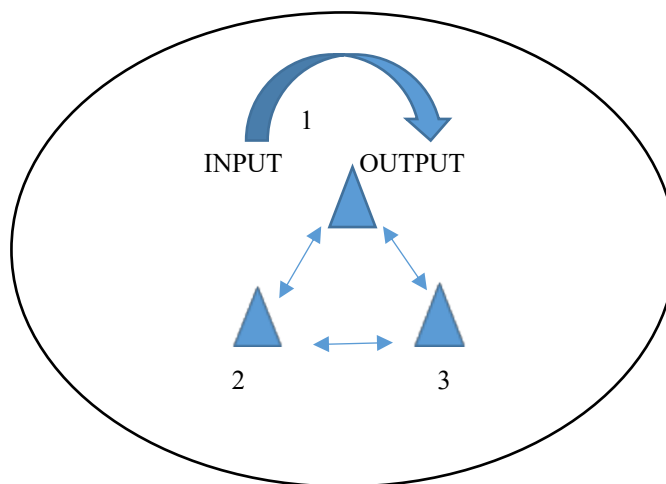

Figure 1. Elements and Functioning of the System

In such a system (Figure 1), an individual is thought of as a system of power, union and rationality, set in a transformation space. Interrelations are established between agents, i.e., between decision-making bodies. The project of each decision-making body is formed by taking into account a certain power, certain interrelations and a certain rationality, in a more or less intuitive or calculated way. One form of interrelationship is the flow of information between agents: they are information senders, transmitters and receivers. This general pattern of social action implies decisive

consequences for the construction of hypotheses, theories and analyses of the economic category, whether one assigns the current meaning or a more elaborate one to the adjective "economic".

Let us now consider the two elementary economic units of production and consumption: the enterprise and the family. The enterprise is defined by the power that an individual or collective decision-making body exercises to administer the enterprise itself (Lainé-Bloch and Perroux, 1966). It draws up a more or less long-term plan, which considers the expected effectiveness of this power, both in external and internal interrelations, following a rationality that goes beyond that of prices and costs. Externalities are not the exception, but the rule; the enterprise is in a network of information, power and counter-power. As for the family, it also depends on a decision-making body. Its program is about hoarding resources and spending them on consumption. These powers depend on social interrelations, such as imitation, pressure from organized groups, and can be understood as part of a social hierarchy of types of consumption and lifestyles.

On the other hand, the enterprise and the family seen as elementary units subject to the action of anonymous forces, where services flow to and from, where goods arrive and pass through, offer an oversimplified image of economic reality. This image eliminates the agent and the organization. The prices recorded could at best be regarded as raw material or unclear results (Marschak and Radner, 1972, pp. 327-333).

The pattern of social action leads us to reinterpret not only the elementary units, but also the relations established between them. It restores the concept of organization to economic thought, seeing it as a reality found at every level that characterizes a large system (Kuznets, 1971). It is at all levels of society that one must identify the search for a purpose for individuals, the hierarchical relation between their activities and the presence of the organization. This is where power comes in. It has an economic nature, a cost and a return. Since economic activity is a social activity, it involves the pursuit of power, balance of power and rationality in the use of power as an aim and as an economic means.

The basic pattern of social action treats power as an ever-present and unavoidable factor. It must be admitted that, at least as a working assumption, power is a fundamental component of economic activity[5].

8   Power and Asymmetrical Relations

Weber (1966) states that power represents the probability that an agent has of making his own will effective within a social relation, whatever the basis on which this probability is founded.

The balance of power is subject to different elements, with regard to the intensity of the power: 1) A modifies B's behavior without forcing him,

[5]   Böhm-Bawerk (1914, p. 230) stated that power exerts its influence not outside and against economic laws, but within and through them.

arouses adherence to his values, provokes imitation of his attitudes and behavior; 2) A forces B, through the use of force or violence, to act or abstain. Coercion (domination) can be partial or full, socially legitimate or not (Perroux, 1972b).

From what has been said, it is evident that power is an intrinsic element of economic activity; it is a factor that constitutes an essential component of its constitution. More specifically, we can represent the economic features of power. Influence is present in the model of the leading enterprise; it imposes a price and this price is followed because the other enterprises have experienced that it is in their interest to do so. Imposition is encountered in all cases of fixed, imposed or administered prices. We can find it in partial monopoly models (large enterprise and many small enterprises in the same industry and also in complex relations between a large enterprise and some of its associated enterprises. Subordination, in the relations between colonizers and colonized, between dominant power and satellites, is observed and analyzed in the influences of economic structure, of national or quasi-national units, some rich and strong, others poor and powerless (Perroux, 1967). The analysis of these cases is set in the context of a general equilibrium theory of general interdependence.

In a given sector, the relative power of one agent vis-à-vis another is a function of his assets, his means of liquidity and his information. His ability to obtain credit depends on the first two parameters. For the third agent, the most modern way of dealing with it is to consider information as a complementary good to all other goods. Accumulated information is regarded as the agent's ability to obtain usable information about the environment in which he operates, about his co-workers and their likely reactions. Each agent refers to a group. Thus, the decision-making body of a production unit, whether individual or collective, exercises hierarchical power whose parameters are not only technical and financial capital, means of liquidity and credit capacity, but also the cohesion of the unit, the ability to resist the forces of internal dissolution and external pressures (Russel, 1938, p. 139).

The desire for power is a feature of the economic agent, since the exercise of power is inherent in economic activity (Hunter, 1958; Ulmer, 1959). The latter is exercised between unequal subjects, who often exercise influence or coercive power. Economic exchange, before being a transfer of things, is a meeting of agents' plans, and must therefore be embedded in a network of powers. The capacity that an agent shows to resist the circumstances that threaten him, or claims that harm him, does not depend on the amount of savings he possesses, but on a kind of savings that is a function of his plan and social coordinates of the person concerned. Capital accumulation is not mechanically a function of the difference between marginal profitability and marginal cost, but of the possibility and desire to acquire capital for the exercise of power (Perroux, 1978, p. 80).

This represents a change in perspective from the view of a universe of agents without any power in the face of the market price mechanism. Complementary goods are those goods whose presence is necessary for the consumption or transformation of other goods. Power, specifically, is a

complementary good. As Perroux (1971) states, without it, objective factors, such as capital and labor, cannot be exploited to the full by the enterprise; the set of goods for use and consumption is deprived of their influence and prestige content. If information is considered as the complementary good of every good, it is possible to accept the hypothesis that power has the same quality. Therefore, information in the context of balance of power is an integral part of economic activity.

9 Power in General Equilibrium Theory

Power is excluded from the premises of pure market and perfect competition, but we can include it as a deepening of general equilibrium. If we assume that there is some interdependence between agents (Cazenave and Morrison, 1972), the utility function for a 1st agent and a good A, is written as follows:

$$U_I f_I(A_I) \tag{1}$$

where A_I represents the quantity of *A* available to the *1st* agent. For the *1st* agent and for *N* goods (*A, B, ... N*), we also write:

$$U_I = f_I(A_I, B_I, ... N_I) \tag{2}$$

For *M* agents (*1st, 2nd, ..., M*) and *N* goods, we write the above function *M* times. These functions, in the first statements of the equilibrium theory, are independent of each other (Perroux, 1978, p. 113). As soon as we introduce the market, agents only communicate with price.

The context changes when we assume that the utility functions of the *1st* agent and the utility function of the *2nd* agent are interdependent. In this case we can write:

$$U_I g_I(A_I ... A_{II}) \tag{3}$$

$$U_{II} g_{II}(A_{II} ... A_I) \tag{4}$$

To make the analysis more precise, we consider two agents, *1st* and *2nd*, and a single good *A*. Let us now assume that a third agent is able to make a transfer of good *A* from the rich *1st* agent to the poor *2nd* agent, who receives a certain quantity of this good.

In Figure 2, we represent the different possible allocations of good *A* between the *1st* and the *2nd* agent in the form of an indifference curve for the third agent. The bisector is *OB*.

At the beginning, position 1, the *1st* agent has (relative to the *2nd* one) much of $A(OA_{I1})$, whereas the *2nd* agent has little (OA_{II1}). Several transfers are possible in order to: 1) enrich the poor, by impoverishing the rich (A_{I2}, A_{II2}), position 2; 2) enrich the rich, by impoverishing the poor (A_{II3}, A_{I3}),

position 3; 3) establish equality (relative to good *A*), between the rich and the poor, position 4.
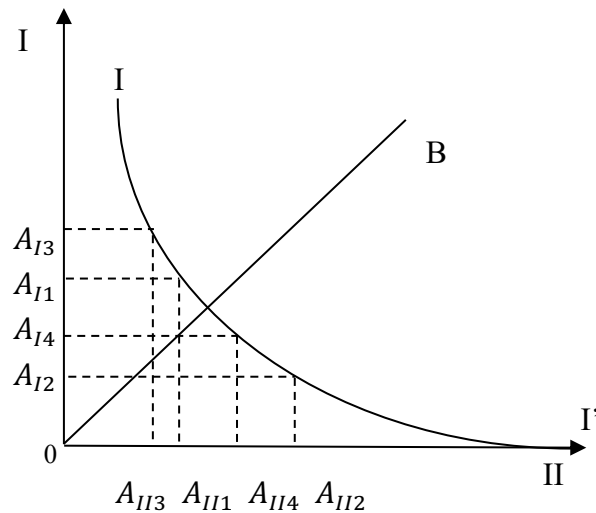

Figure 2. Utility Functions - Indifference Curve of Operators

The choice depends on the preferences of the third agent, whom we assume to be able to transfer authoritatively and without cost. The preferences of the third agent are not the preferences of the *1st* and the *2nd* agent. The equality in the availability of *A* and *B* of both agents might derive from a moral preference; but from the dynamic point of view, it does not allow us to formulate anything else, as far as the effect on social productivity or social satisfaction is concerned. On the other hand, there is no reason to think that the outcome desired by the third agent coincides with the outcome that either agent would have preferred, had they been informed.

When one has a preference for analysis in terms of free transfers, one proceeds differently.

For example, have two agents, *1st* and *2nd*, and a good *A*. Suppose that the state of the *2nd* agent (expressed by the quantity of *A* at his disposal) is taken into account in the utility function of the *1st* agent, which is written as follows:

$$U_I f(A_I, A_{II}) \tag{5}$$

Starting from this function and making it much simpler, we introduce a triple motivation, instead of the single selfish motivation of *A*. This allows us to imagine a free and optimal transfer from the altruistic rich to the indifferent poor. Let us assume that initially the availability of $\mathring{A}_I$ and $\mathring{A}_{II}$ and the transfer achieve the equality of A'_I and A'_{II}.

The transformation line (*TA-TB*) is shown in Figure 3. Given the utility function of the *1st* agent, there is a point of optimization of its transfers (*O'*),

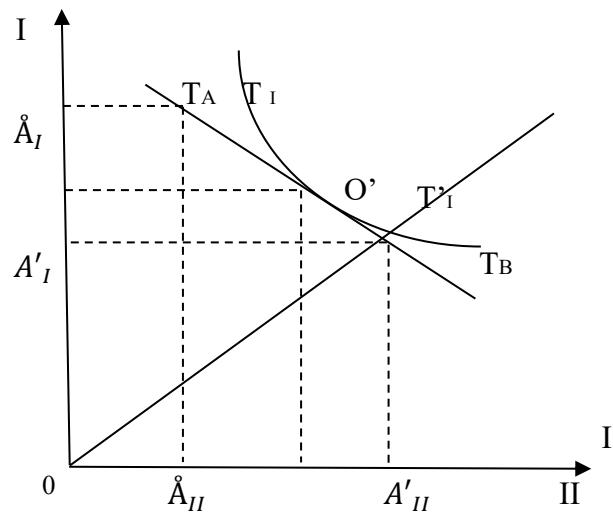which is defined with the tangency point of the highest of its indifference curves with the transformation line.

Figure 3. Optimization Point

The case represented is number 1, of Scheme 1, where $\delta U_I / \delta A_{II} > 0$. Since the utility of the *1st* agent, starting from an initial position, increases when the quantity of *A* of the *2nd* agent at his disposal increases (i.e., when the quantity of *A* at his disposal decreases due to the transfer effect), the *1st* agent transfers good *A* to the *2nd* agent until its utility is maximum.

Scheme 1. Different Utility of the Operators

Case 1	1 (altruistic)	wants the good of the 2nd agent	$\delta U_I / \delta A_{II} > 0$
Case 2	1 (selfish)	indifferent to the state of the 2nd agent	$\delta U_I / \delta A_{II} = 0$
Case 3	1 (hostile)	wants the evil of the 2nd agent	$\delta U_I / \delta A_{II} < 0$

We have noted that the two agents are unequal and that the transfer is made by the rich man's will; the poor man plays a passive role. Considering Perroux (1960), we can see that even if we extend the reasoning to more agents and more goods, the basis of the analysis does not change. However, when several rich agents wish to help, unequally, a subset of poor agents, it is necessary to introduce an arbitrator, who increases the small contributions and decreases the large ones, to bring them to equilibrium. In this sense, we can introduce the forced transfer that can convert the indifferent one into a fearful altruist. This type of analysis introduces coercion and gift into exchange. It no longer allows the economic universe to be considered as made up of selfish and isolated agents, subject to the neutral arbitration of the competitive price. By introducing the inequality between agents and the diversity of their motivations, economics takes into

account power, the forced transfer, in the form of influence (the threat of forced transfer) and in the form of imposition (coercion). The interdependence between quantities and prices is replaced by a more natural interdependence between utility functions (indifference systems). Not only are the markets intercommunicating, but the agents themselves also are.

10 Information and General Equilibrium

The dissemination of information in economic theory implies the reworking of both partial and general equilibrium (Perroux, 1961, pp. 387-453). The decision-making body has the ability to send, receive and transmit information, so this ability cannot be treated equally across agents. Thus, the possibility exists to generate the phenomenon of influence and also imposition, creating markets that are differently informed and communicate with each other through information flows.

In this context, the partial equilibrium of the enterprise is radically altered, becoming dependent on the ability to receive and use information (Perroux, 1961, p. 473). In order to attempt to move to general equilibrium we consider Radner's paper (1968).

A Pareto equilibrium could be achieved by assuming initial information and additional information reflecting the environment. But the additional information would have to be based on the behavior of the other agents, which is a decisive departure from the Pareto conditions. In addition, the calculation skills, which are essential for building a strategy, are unevenly distributed, and thus it is not possible to achieve the common convex form that information production and use have (Perroux, 1978, p. 127). If we introduce the information structure and calculation skills into the equilibrium, the Pareto general equilibrium cannot be achieved. It can be observed that the phenomena of power between different agents, unequal and in relation to each other, give rise to problems when dealing with Pareto's general equilibrium.

A unit has (informational) power if by its action it is able to modify its surrounding environment in its favor, so as to place itself in a better condition than the other units with which it is related. For example, an enterprise, considered as a unit, can use an investment of power and acquire, from its competitors, shareholdings that lead it to have greater economic power than the other units (Galbraith (1967). Thus the (more influential) enterprise in question can create an economic and financial group that implies an unequal distribution of profits[6] among market participants, placing enterprises specialized in one production in a state of dependence. The economic and financial group, which is so decisive in the modern economy, presents itself as a combination of powers that is specified through their internal organization and through their relation with the units

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[6] In this case 'group' is understood in a different sense than 'cartel'. For more on this subject, see Vito (1939).

within the group. As Perroux (1972, p. 312) states, when these practices are imposed for a long time, they generate a real structural influence of an enterprise or a group of enterprises on other units, through the flows of goods and services, the flows of capital and the flows of information.

The model described can be represented by that of Lichnerowicz (1971), i.e., a different equilibrium from Pareto's. It is worked out by appealing to a certain combination of trade and power. The equilibrium under such conditions does not exist, is not optimal and is only stable under the conditions of 'satisfaction' and 'power'. It is evident that this statement concerns both statics and dynamics, the former being a moment of the latter.

11 Transaction Costs and Information Symmetries of Powers

The lack of information available on the characteristics of resources, together with the imperfection of the cognitive patterns available to interpret it, determines measurement and protection costs, linked to the protection of rights and the guarantee of contract enforcement (North, 1997). Thus, some parts of the rights-based resources are destined to remain in the public domain, as measurement and exclusion costs preclude their exclusive use by the owner (Ellickson, 1993). Thus, incentives are developed for other individuals to use resources to take possession of those elements that are not sufficiently protected by the right holder, by social norms, by third parties, or by the state. At the same time, rights owners have incentives to increase the resources used in defense activities.

In this context, the problem of information asymmetries arises: one of the parties to a contractual relationship (the agent) may possess more information than the other (the principal), regarding certain qualitative characteristics of the object of exchange (Akerlof, 1970).

In this case, one of the parties to a transaction is excluded from relevant information in order to determine how likely it is that the terms of the exchange are actually convenient. In fact, an information rent is formed that prevents contractual arrangements in which the expected surplus does not cover the value of the transaction costs. The decision on how to use an economic resource, by exercising a right of control over it, is limited by the existence of transaction costs. The latter are not only related to exchanges as mutual transfer of rights, but reflect the existence of conditions of interdependence where each individual can condition the exercise of others' rights to perform actions of disposition of economic resources (Coleman, 1990).

The existence of imperfectly outlined property rights is linked to the presence of transaction costs. The latter involve the use of time and other resources in order to protect and transfer economic property rights (Barzel, 1982).

Thus, transaction cost becomes a broader concept, reflecting the existence of frictions in any context of social interdependence, i.e., conflicting interests in the presence of a gap between the institutional arrangements

subjectively prefigured by agents and the existing ones (Coase, 1960). Indeed, in general terms transaction costs are associated with the creation or change of an institution or organization, and with the use of an institution or organization (Furubotn and Richter, 1991). The formation and change of institutions or organizational forms create the first type of transaction cost, whereas the latter arises from the consumption, exchange, and advocacy activities that take place within an existing institution or organization.

As an example, it is possible to cite the borderline case proposed by Barzel (1977), concerning the slave-master relationship, marked by complete submission, imposed by coercion or custom, which prevents the slave from holding formal property rights. Verification of the slave's activity is costly, which makes full control difficult. Thus, the conditions for an implicit contract arise, in such a way that the slave acquires a residual right of control over certain attributes of his or her labor effort. In such a scenario, masters can increase the value of their property by granting slaves certain rights in exchange for services that they value more highly. Thus, slaves also become owners, so that they are allowed to regain their freedom, as was the case in ancient times in the southern United States before the Civil War. Also in authority relations, transaction costs make an implicit exchange between subordinate and superior possible. Similarly, power relations are relations of asymmetrical but reciprocal exchange between individuals with different bargaining power. According to Crozier and Friedberg (1977), power can be defined as an exchange relationship where one of the parties gains more advantage. It is a balance of power from which one individual may benefit more than the other, but at the same time one is never totally disarmed in the face of the other, even when the asymmetry of power is very strong.

Another example of asymmetry in power relations can be found in the exercise of political authority. According to Pierson (2000), a political conflict in which several individuals are opposed to each other with relatively proportionate resources, as a result of the success of one of the parties, can turn into an unbalanced relationship in which power relations are based on the anticipated reactions of the losing parties. In this context, the accentuation of power asymmetries goes hand in hand with the concealment of authority relations themselves. Individuals can use political authority to create changes in the rules of the game in order to increase their power.

The problem of incomplete contracts raised by Hart (2017) should also be considered, as power can emerge from incomplete contracts. This is the power given by the *residual* (i.e., not defined in the contract) *right* of control. Whoever possesses this right is able to exercise power because he decides what is to be done when the contract is silent. In Hart's view, such power is only justifiable if it leads to efficient results. He advocates a better understanding of the relationship between institutions and contracts and also a more accurate assessment of the costs generated by institutional inadequacy.

Finally, as Ullman-Margalit (1978) has shown, the nature of the enterprise lies primarily in the power relations it establishes and not in the level of efficiency it achieves.

The existence of the enterprise is not explained by technological factors, but by its ability to extend the breadth and degree of control of the capitalist. Thus, the enterprise shall be construed as an institution based on power relations, rather than a structure that survives by virtue of its efficiency in reducing costs. Indeed, according to Coase (1960) and Williamson (1985), the existence of the enterprise is justified in terms of efficiency and cost minimization.

An example of how institutions can mitigate information asymmetry comes from the work of Knight (1992). The establishment of a new authority involves a reallocation of information and power. Gradually, individuals learn to manage the information deriving from the new rules and organize their activities to exploit the opportunities that arise. The most important factor conditioning this process is the asymmetry in the endowment of power resources that determines the different bargaining power of individuals. Institutional equilibria arise from interactions between individuals who have unequal capacities to induce others to acquiesce to their demands, but at the same time have incentives to coordinate in equilibrium outcomes. As others realize that they are interacting with a type of individual who possesses that type of resource, they will adjust their strategies in order to achieve the best outcome, given the expected commitments of others. The types of skills that are most remunerative are a function of the structure created by the institutional system (Baumol, 1990).

12 Conclusions: Power and Institutions

We have seen in which contexts power is based on information asymmetry, also through examples (Barzel, 1977; Crozier and Friedberg, 1977; Pirson, 2000). It has been noted how power can also emerge from incomplete contracts (Hart, 2017). In such a scenario, power does not depend on information asymmetry between individuals, but on the imposition of costs, e.g., information costs. Thus, transaction costs are involved (Coase, 1960), which can describe a power relationship, as they reflect the existence of frictions in areas of social interdependence and conflicting interests.

We have shown how institutions can mitigate information asymmetry (Knight, 1992), but not always. In fact, according to Ullman-Margalit (1978), the nature of the enterprise lies in the power relations it establishes and not in the level of efficiency it can achieve.

A process of structural changes, combined with the associated changes in power between economic and social groups, could not be governed by the price of imperfect markets alone, under conditions where it is reasonably certain that a dynamic optimum of the product and its production and distribution structure can be achieved for the population. Since equilibrium in development is unlikely to be achieved spontaneously, it must be guided by an institutional power.

As Perroux (1964) states, the spontaneous establishment of industrial sub-systems is not always the best solution for a population organized as a nation. The antagonistic economic powers do not use only the weapons of economic competition. Thus, on the one hand, each nation tries to achieve an optimal structure of its economy; on the other, it tries to protect its population from the damage that the struggles and coalitions of large private interests would expose it to.

In a world marked by uncertainty and power, institutions are used by individuals as a means of regulating their interactions (Morselli, 2018). Institutions are not objects, but constructions of the human mind that, by resulting into patterns of interpretation of reality, make possible forms of coordination in communication, exchange and interdependence that bind unequal individuals. They stem from the ways in which social players use their cognitive maps in order to analyze the available, incomplete and asymmetrically distributed information, responding to a structure of incentives and opportunities that shapes their relations.

The existence of shared models of behavior, whether formalized or conventional, is a precondition for the successful participation of individuals in the social game. The rules of interaction can be equated with the price system, which provides signals of relative scarcity of goods in the market. Like the latter, the institutional architecture collects and orients information about the likely actions of other agents, facilitating the settlement of individual claims. Like prices, institutions reduce the set of possible ways of exercising control rights over scarce resources by providing information about the likely conduct of others and by fostering the consolidation of consistent expectations (North, 1981).

The relative stability of the existing institutional models in a society guarantees a greater information content to orient individual decisions in the uncertain long-term horizon. The institutional structure traces the framework of rights that governs both cooperative relations and balance of power among individuals, ensuring those constraints on individual conducts that derive from the mutual adaptation of choices, strategies and beliefs. For instance, Arrow's theorem (1951) states that the process of aggregating individual preferences can develop incoherent solutions, as there are no mechanisms to make rational collective choices by combining individual decisions motivated by heterogeneous values and preferences. In this context, institutions regularize social interaction, transforming uncertainty into relative security and predictability.

The institutional approach allows the explanation of institutional phenomena to be traced back to the interdependent choices of players oriented towards the pursuit of their own interests, in a context of power, informational and cognitive bounds. It is assumed that their preferences are not *given*, as inferred in traditional neoclassical models, but appear as the result of institutional conditioning that in the long run shapes perceptions, beliefs and identities. Therefore, only a better understanding of the nature, bounds and potential applications of the mechanisms for deciding the rules of the game can favor the stabilization of individual and social expectations, towards models of peaceful coexistence. All this favors symmetry in the

conflictual relations of economic powers. A conflict in which the different agents operate in a context of information asymmetries and power asymmetries, which can turn into an unbalanced relation, where the weaker one, by succumbing, follows the stronger one.

References

Akerlof, G.A., 1970. The market for lemons: quality uncertainty and the market mechanism. The Quarterly Journal of Economics 84(3), 488-500.

Akerlof, G.A, Miyazaki, H., 1980. The implicit contract theory of unemployment meets the wage bill argument. The Review of Economic Studies 47(2), 321-338.

Arrow, K.J., 1950. A difficulty in the concept of social welfare. Journal of Political Economy 58(4), 328-46.

Arrow, K., 1962. Economic welfare and the allocation of resources for invention. The rate and direction of inventive activity: economic and social factors. MA, NBER, Cambridge, pp. 609–26.

Bartlett, F., 1932. Remembering. Cambridge University Press, Cambridge.

Barzel, Y., 1977. An economic analysis of slavery. Journal of Law and Economics 20(1), 87-110.

Barzel, Y., 1982. Measurement cost and the organization of markets. Journal of Law and Economics 25(1), 27-48.

Baumol, W.J., 1990. Entrepreneurship: productive, unproductive, and destructive. Journal of Political Economy 98(5), 893-921.

Böhm-Bawerk, E., 1914. Macht oder ökonomisches gesetz? F.X. Weiss, Vienna.

Broadbent, D.E., 1958. Perception and communication. Pergamon, London.

Cazenave, P., Morrison, C., 1972. Fonctions d'utilité interdépendantes et théorie de la redistribution en économie d'échange. Revue économique 23(2), 214-242.

Chassagnon, V., 2014. Pouvoir et économie politique. Revue Économique 5(65), 719-742.

Coase, R.H., 1960. The problem of social cost. Journal of Law and Economics 3(October), 1-44.

Coleman, J., 1990. Commentary: social institutions and social theory. American Sociological Review 55(3), 333-339.

Crozier, M., Friedberg, E., 1977. L'acteur et le sistéme. Editions du Seuil, Paris.

Diamond, P., 1971. A model of price adjustment. Journal of Economic Theory 3(2), 156-168.

Dockès, P., 1999. Pouvoir et autorité en économie. Economica, Paris.

Ellickson, R.C., 1993. Property in land. Yale Law Journal 102, 1315-1400.

Elster, J., 1979. Ulysses and the sirens. Cambridge University Press, Cambridge.

Elster, J., 1989. Nuts and bolts for the social sciences. Cambridge University Press, Cambridge.

Eucken, W., 1944. Die grundlagen der nationalökonomie. Springer, Berlin.

Furubotn, E.G., Richter, R., 1991. The New Institutional Economics: an assessment. In: Furubotn, E.G., Richter, R. (Eds.), The New Institutional Economics, J.C.B. Mohr, Paul Siebeck, Tübingen, pp. 1–32.

Galbraith, J.K., 1967. The new industrial state. Hamish Hamilton, London, chapter 5, pp. 46-59.

Georgescu-Roegen, N. 1971. The entropy law and the economic process. Harvard University Press, Cambridge.

Hart, O., 2017. Incomplete contracts and control. American Economic Review 107(7), 1731-1752.

Hayek, VON F., 1945. The use of knowledge in society. American Economic Review 35(4), 519-530.

Heiner, R.A., 1983. The origin of predictable behaviour. American Economic Review 73(4), 560-595.

Hodgson, G., 1998. The approach of institutional economics. Journal of Economic Literature 36(1), 166-192.

Hohfeld, W.N., 1913. Some fundamental legal conceptions as applied in judicial reasoming. The Yale Law Journal 23(1), 16-59.

Hunter, A., 1958. Notes on countervailing power. Economic Journal 68(269), 89-103.

Joffre. P., 1999. L'économie des coûts de transaction ou le marché et l'entreprise à la fin du XXe siècle. Dans Koenig, G. (sous la direction de), De nouvelles théories pour gérer l'entreprise du XXIe siècle, Economica, Paris, pp. 143-169.

Knight, J., 1992. Institutions and social conflict. Cambridge University Press, Cambridge.

Kuznets, S., 1971. Notes on stage of economic growth as a system determinant. In: Eckstein, A. (Eds.), Comparison of economic systems. Theoretical and methodological approaches, University of California Press, Berkeley, pp. 243–267.

Lainé-Bloch, F., Perroux, F., 1966. L'entreprise et l'économie du XX siècle: étude internationale à l'initiative de François Bloch-Lainé et François Perroux. Presses Universitaires de France, Paris.

Langlois, R.N., 1986. Rationality institutions, and explanation. In Langlois R.N. (Eds.), Economics as a process, Cambridge University Press, Cambridge, pp. 225-255.

Lichnerowicz, Marc, and Andrè, 1971. Économie et thermodynamique: un modèle d'échange économique, economies et sociétés., Droz, Ginevra.

Locke, R. G., 1971. Social action: a brief analysis and a constructed type. Anthropological Forum, University of Australian Press, Australian.

March, J.G., Olsen, J.P., 1984. The new institutionalism: organizational factors in political life. American Political Science Review 78(3), 734-749.

Marschak, J., Radner, R., 1972. Economic theory of teams. Yale University Press, New Haven and London.

Ménard, C., 1990. L'économie des organisations. La Découverte, Paris.

Miller, G., 1956. The magical number seven plus or minus two. Psychological Review 63, 81-97.

Morselli, A., 2018. From nation-state to world society: an institutional reading of globalization. Journal of Economic Issues 52(3), 653-675.

North, D.C., 1981. Structure and change in economic history. Norton & Co, New York.

North, D.C., 1990. Institutions, institutional change and economic performance. Cambridge University Press, Cambridge.

North, D.C., 1994. Economic performance through time. American Economic Review 84(3), 359-368.

North, D.C., 1997. Transaction costs through time. In Menard, C. (Eds.), Transaction cost economics. Recent developments. Edward Elgar, Cheltenham.

Pagano, U., 1999. Is power an economic good? In Bowles, S., Franzini, M., Pagano, U. (Eds.), The politics and economics of power. Routledge, London and New York, pp. 53-71.

Pantaleoni, M., 1963. Tentativo di analisi del concetto di "forte" e di "debole" in economia. Cedam, vol. I, Padova.

Pierson, P., 2000. Increasing returns, path dependence, and the study of politics. American Political Sciences Review 94(2), 252-267.

Perroux, F., 1948. Esquisse d'une théorie de l'économie dominante. Économie Appliquée 1(2-3), 243-300.

Perroux, F., 1950. The domination effect and modern economic theory. Social Research 17(2), 188-206.

Perroux, F. 1960. Économie et société, contrainte, échange et don. PUF, Parigi.

Perroux, F., 1961. L'économie du XX siècle. PUF, Paris.

Perroux, F., 1964. Économie et société, contrainte, échange et don. PUF, 2° édition, Paris.

Perroux, F., 1965. Les tecniques quantitatives de la planification. Presses Universitaires de France, Paris.

Perroux, F., 1967. Sur la degré de généralité de la théorie de l'équilibre général, essais de généralisation. Economie et Societé, Cahiers de l'ISEA, Paris.

Perroux, F., 1971. Structure, structuralisme, modèles économiques. Économie Appliquée. 3, 329-351.

Perroux, F., 1972*a*. L'indépendance de la nation. Collection 10-18, Paris.

Perroux, F., 1972*b*. Masse et classe. Casterman, Paris.

Perroux, F., 1973. Pouvoir et Économie. Bordas, Paris.

Perroux, F., 1975. Unités actives et mathématiques nouvelles: révision de la théorie de l'équilibre économique géneral. Dunod, Paris.

Perroux, F., 1978. Il ruolo del potere nell'analisi economica. Franco Angeli Editore, Milano.

Preiser, E., 1948. Erkenntniswert und grenzen der grenzproduktivitätstheorie. Schweizerische Zeitschrift für Volkswirtschaft und Statistik 89(1), 25-45.

Radner, R., 1968. Competitive equilibrium under uncertainty. Econometrica 36(1), 31-58.

Rainelli, M., 2010. Économie industrielle et droit économique dans la Revue d'économie industrielle. Revue D'Économie Industrielle 1-2(129-130), 371-380.

Rallet, A., 2000. *Les deux économies de l'information*. Réseaux 18(100), 299-330.

Rothschild, K.W., 1976. Potere ed economia, Franco Angeli Editore, Milano.

Russel, B., 1938. Power: a new social analysis. George Allen and Unwin, London.

Schotter, A., 1981. The economic theory of social institutions. Cambridge University Press, Cambridge.

Simon, H.A., March, J.G., 1958. Organization*s*. Wiley. New York.

Simon, H.A., 1982. Models of bounded rationality. The MIT Press, Cambridge (MA).

Smith, A., 1776. An inquiry into the nature and causes of the wealth of nations. Edited By Edwin Cannon, London.

Stigler, G.J., 1961. The economics of information. Journal of Political Economy 69(3), 213-225.

Stiglitz, J.E., 1979. Equilibrium in product markets with imperfect information. American Economic Review 69(2), 339-345.

Stiglitz, J.E., 1985. Information and economic analysis: a perspective. The Economic Journal 95, 21-41.

Thepaut, Y., 2002. Pouvoir, information, économie. Éd. Economica, chapter 3, Paris.

Ullman-Margalit, E., 1978. Invisible hand explanations. Sythese 39, 282-286.

Ulmer, M.J., 1959. Some reflections on economic theory. De Economist 107, 337-346.

Vatiero, M., 2020. The theory of transaction in institutional economics. Routledge, chapters 3-4, London.

Vito, F., 1939. *I sindacati industriali, consorzi e gruppi*. Giuffrè, Milano.

Weber, M., 1966. *The theory of social and economic organization*. The Free Press, New York.

Williamson, O.E., 1985. The economic institution of capitalism. Macmillan, London.

Williamson, O.E., 1995. Legal implication of imperfect information in consumer markets: comment. Journal of Institutional and Theoretical Economics 151(1), 49-51.