# THE LEGACY OF CHESTER I. BARNARD IN THE SCIENCE OF ORGANIZATION OF OLIVER E. WILLIAMSON

Virgile Chassagnon, University Grenoble Alpes (CREG; IREPE, TRIANGLE), 1241 rue des Résidences, 38400 Saint-Martin-d'Hères, France

Bernard Baudry, University Lumière Lyon 2 (TRIANGLE; IREPE), Lyon, France

Naciba Haned, ESSCA School of Management, Lyon, France

**Abstract**. Chester Barnard was an American manager and public administrator who greatly influenced economics and the history of economic thought. Oliver Williamson's early works were published after Barnard's death, but the intellectual proximity they show to Herbert Simon, along with the significant influence of John Commons on their analysis, brings them closer. This study investigates Barnard legacy (particularly his work in 1938) in Williamson's 'science of organization' project by analysing the Barnardian origins of his organizational micro-approach from their complementary theories of cooperation.

**Keywords.** Chester I. Barnard, Oliver E. Williamson, Cooperation, Science of Organization, History of Economic Thought

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## 1. Introduction

The history of economic thought has often found the intellectual filiation that Oliver Williamson claims *vis-à-vis* Chester Barnard (see Baudry and Chassagnon, 2010; Walsh and Braby, 2019). However, no contribution has attempted to appreciate the Barnardian legacy in Williamson's works. Acknowledging this important gap in the history of organizational economic thought (see Chassagnon and Haned, 2019), this article shows that the Barnardian legacy is apparent in the organizational work of Williamson and deserves historical and analytical clarification.

Between 1963 and 2016[1], Williamson was a prolific author, benefiting from a great influence in economics, especially in the two disciplinary sub-fields constituting the economics of institutions, the economics of organizations and management, as well as, to a lesser extent, in political science, law, and sociology (see, e.g. Hodgson and Vatiero, 2021). On his multiple intellectual influences, which were multidisciplinary, Williamson often recalled in his works the influences of John Commons, Kenneth Arrow, and Ronald Coase in economic thought and those of Karl Llewellyn and Ian Macneil (mainly but among others) in law. Williamson seemed explicitly influenced by three distinct but complementary schools of thought in organization theory (see Baudry and Chassagnon, 2010), namely, the behaviourist theory of Herbert Simon, the bureaucratic dysfunctions theory of Robert Merton, and the human relations school of Chester Barnard and Elton Mayo. Regarding certain organizational aspects, Williamson's theory is also close to Michel Crozier's strategic approach to organizations (ibid.).

Williamson had always been explicit in his scientific objectives: he proposed a contribution to the new institutional economics that is realistic and rigorous to break from the teachings of neoclassical theory while extending the strictly informal analysis of the pioneering work of Coase (see Williamson, 1993c). In his 1975 book *Markets and Hierarchies: Analysis and Antitrust Implications*, Williamson began his introduction with an enlightening contextualisation of his work. He explained that his work in the new institutional economics as a whole was based on two major assumptions:

> (1) an evolving consensus that received microtheory, as useful and powerful as it is for many purposes, operates at too high level of abstraction to permit many important microeconomic phenomena to be addressed in an uncontrived way; and (2) a sense that the study of transactions, which concerned the institutionalists in the profession some forty years ago, is really a core matter and deserves renewed attention. (Williamson, 1975, 1)

Williamson added that he wanted his work to be more complementary than a substitution for conventional analysis. Thus, he emerged from the original institutionalism (of Commons mainly) and recalled the need to resort to formalisation in organization analysis, making it possible to surpass Coase's work. He later wrote that the science of organization had

[1] His work began in 1963, with the defence of his doctoral thesis published the following year (see Williamson, 1964) and the publication of his first article, 'Selling Expense as a Barrier to Entry' in the *Quarterly Journal of Economics* (see Williamson, 1963). The last original work by Williamson (although it is a methodological synthesis of his work), the article 'Pragmatic Methodology: A Sketch, with Applications to Transaction Cost Economics', was published in 2009 in the *Journal of Economic Methodology*. This was the year he received the Nobel Prize in economics, along with Elinor Ostrom, for his analysis of economic governance and firm boundaries. Other works include his speech at the *Sveriges Riksbank*, academic tributes to Ronald Coase, and syntheses of his works that have been published since (see Williamson, 2010a, 2010b, 2014, 2016).

progressively evolved through different successive stages: ‘The first stage is associated with Ronald Coase and entails “informal” analysis. Stages two and three involve “preformal” and “semi-formal” analysis and are associated with transaction cost economics’ (Williamson, 1993c, 36). This was a major point that guided this entire historical study.

Williamson wished to integrate new elements of analysis into the microtheory while ensuring that these contributions could be rigorously operationalised in economics (see Baudry and Chassagnon, 2019). He also explained (see Williamson, 1993c) that this perspective was part of Lon Fuller’s ‘eunomics’, which implied a focus on ‘workable arrangements’. Thus, Williamson ensured that his developments did not constitute the economy that Fuller (1978) called the ‘tosh’ (see Bonus, 1993). Williamson positioned his specific approach from the first pages of his first post-thesis work: ‘I hope, by exploring microeconomic issues of markets and hierarchies in greater detail than conventional analysis commonly employs, to achieve a better understanding of the origins and functions of various firm and market structures – stretching from elementary workgroups to complex modern corporations’ (Williamson, 1975, 1). Williamson advocated using lessons from other social sciences to achieve a realistic approach to the business corporation. In particular, he aimed to integrate theoretical advances made in organization theory without breaking the scientific rigour that characterised conventional analysis.

Especially, Barnard’s 1938 work plays a special role in Williamson’s organizational microtheory[2], as he stated in a collective work in 1990 that he directed and titled *Organization Theory: From Chester Barnard to the Present and Beyond*. In this book on the ideas of Chester Barnard, he invited researchers to continue Barnard’s work and build a real science of organization. In one chapter titled, ‘Chester Barnard and the Incipient Science of Organization’, (see Williamson, 1990), Williamson insisted on his debt to this author and highlighted the many points they have in common: The most important are the nature of the firm, the question of incentives and authority, and the role of the informal organization. These were the major elements that Williamson used to provide a new analysis, beyond the conventional analysis, which is insufficiently realistic in his opinion, of cooperation within the firm. Williamson (2002b) recalled that the microtheory he intended to develop since the beginning of his career was also a theory of cooperation and cooperative adaptation for institutional change. Therefore, Barnard’s work was key in his organizational microtheory.

Barnard’s work was an original in the history of economic thought. He was an American manager, a public administrator, and a pioneering scholar in management and organization studies that greatly influenced economics. Barnard’s total volume of writing was rather small[3]. William Wolf and Haruki Iino (1986, 2) highlighted this in a volume on Barnard’s writings to commemorate the centennial of his birth in November 1886[4]; ‘thus, it is remarkable that he is so widely known’. However, what counts for the history of economic thought is not the number of published works, but the influence of the research. This notion especially applies to Barnard because the great interest aroused by his works mainly owed it to his book, *The Functions of the Executive*, reputed for being difficult to read because of its high level of discourse. Barnard was precise in his 1958 paper ‘The Elementary Conditions of

[2] It also means that Williamson was only interested in Barnard’s 1938 work and not in his other contributions. Thus, in this article, we focus on the *Functions of the Executive*.

[3] Notably, Wolf and Iino (1986) proposed a list of 109 articles from 1914 to 1957. In their book of selected papers of Barnard, they published four classic articles written by him before 1938, and six articles after his volume of selected papers in 1958.

[4] This work is undoubtedly the richest on Barnard’s writings, because it proposes a rich commemorative eulogy. See also the interviews in 1961 between Barnard and Wolf published in 1973 (see Wolf, 1973).

Business Morals', his late major contribution that was awarded the McKinsey Prize. Additionally, in 1948, Barnard published a third significant contribution, *Organization and Management*, a collection of his writings.

*Functions of the Executive* is an extension of a manuscript, under the same title, that Barnard prepared for his lectures at Lowell Institute in Boston in 1937. Influenced by the reading of Justice Cardozo's Yale lectures ('The Nature of the Judicial Process'), Barnard decided to follow the encouragements of Wallace Donham, a mathematician theorist of organization, and his associate Mayo at the Harvard Business School. His objective in the preface of this book stated:

> I attempt to arrange for orderly presentation hypotheses which I had gradually constructed through several years concerning the executive processes, which are specialized functions in what we know as 'organizations'. If the functions are to be adequately described, the description must be in terms of the nature of organization itself. I had attempted in the previous year to sketch a portion of a theory of organization in an effort to stimulate to take it up. (Barnard, 1938, xxvii)

Therefore, Barnard's objective was to propose new building blocks for a new theory of organization to help develop new research[5] rather than propose a scientific theory to complement conventional economic analysis. Indeed, Barnard was a scholar who read academic work extensively and thought that no work treated organizations corresponding to his experience. He also clarified his position, stating, 'the sociologists, social psychologists, economists, the scholars in political science and historians, as I viewed their work, has described many of the phenomena resulting from these forces and had given some explanation of them, but I had found little agreements among them' (ibid.).

Barnard was always interested in economics. Consequently, he maintained private correspondences with economists or with researchers close to economics (see Walsh and Braby, 2019) such as Frederick Hayek, Bertrand de Jouvenel, Michael Polanyi, and particularly Herbert Simon, who recalled his intellectual debt to Barnard in his classic 1947 book (see Simon, 1976b) *Administrative Behaviour* (see Mitchell and Scott, 1988). Oliver Williamson's early works were published after Barnard's death; thus, the two organization theorists did not establish correspondence. Nevertheless, the intellectual proximity they show to Simon's work and Commons' major influence on their analysis brought them much closer. Specifically, Commons' book *Institutional Economics,* published in 1934, and his work on transactional and strategic factors were significant. The legacy of Barnard in the science of organization, based on which Williamson wished to lay the foundations in economics, can be appreciated through the prism of the analysis of cooperative systems and the survival of cooperation in organizations. The question of the principles of cooperative action is posed in the works of the two authors, and Williamson always recalled the major and pioneering role played by Barnard on these questions (see for example Williamson, 1975, 1985, 1996, 2009), and notably the chapters 'Economy of Incentives' and 'The Theory of Authority' in *Functions of the Executive*.

[5] This goal was nurtured by two factors: (1) Barnard's professional experience and (2) his economics readings. Thus, he recalled from his 1938 book: 'many times I have noted that executives are able to understand each other with very few words when discussing essential problems or organization, provided that the questions are stated without dependence upon the technologies of their respective fields' (ibid.). He added that 'if the questions are considered not as practical but as theoretical problems, the common understanding seems invariable to disappear as quickly as it does if the discussion relapses into illustration from their respective technologies' (Barnard, 1938, xxviii).

Williamson used Barnard's work from 1938 to analyse cooperation in firms' internal organization and the organizational hierarchy. In this perspective, he claimed a historical filiation (see Williamson, 1990) with Barnard. His analysis evolved towards the contractual analysis of discrete choices regarding institutional structures of governance in the mid-1980s (see Williamson, 2009). Therefore, Williamson used Barnard's work to feed his analysis and, in particular, his comparative analysis of the firm and the market. Such an argument had a fundamental theoretical implication because the two organizational approaches combined the result in a fertile complementarity while highlighting several analytical singularities, which can be explained by the fact that Williamson always sought to ensure that his approach remained complementary and not substitutable (as are non-economic theories of organizations) for conventional economic analysis.

In this paper, we study Barnard's legacy in Williamson's science of organization. More precisely, we show the foundations of cooperative microtheory found at the heart of Williamson's science of organization, based on the great influence Barnard had on the work of 2019 Nobel Prize laureate in economics (along with Elinor Ostrom). We proceed as follows. In Section 2, we discuss organizations as cooperative systems in which human incentives are crucial and constitute the first pillar of a microtheory of cooperation. In addition to the economy of incentives, the economy of authority is the second pillar of the microtheory of cooperation that Williamson develops from Barnard's pioneering ideas, as explained in Section 3. Analysis of Barnard's legacy in Williamson's work allows us to construct an original and useful economic history for the community of institutional and organizational economists. This historical contribution, 'the evolving science of organization', can be assessed in light of the search for a theory of cooperation based on human incentives and hierarchical authority. To account for this, Section 4 proposes to study this historical observation based on these three complementary concepts: (1) informal organization, (2) farsighted contract, and (3) atmosphere.

## 2. The Economy of Incentives in the Science of Organization

Barnard and Williamson shared important points, such as understanding the 'organizational dilemma' and the nature of intraorganizational rules. In his 1938 book, Barnard established a distinction between organizational purpose and individual motive. In his opinion, the viability of cooperation depends on the conciliation between 'the opposite poles of the system of cooperative effort' (Barnard, 1938, 89): the common purpose at one pole and the motive of the person at the other pole. Under such circumstances, the organization's role is to establish mechanisms, such as incentives and communication lines, to facilitate coordination and induce cooperation. In his 1975 book, *Markets and Hierarchies*, Williamson used almost the same terms to explain the dilemma of collective action and notes that the pursuit of individual interests within the organization can eventually lead to a substandard collective result (Williamson, 1975, 73).

### 2.1. Organizations as cooperative systems

The organization's function is to manage potential desires for individual gain to the detriment of the 'system' by putting certain devices in place. Evidently, this issue of intraorganizational cooperation is of central importance for both authors: How can individuals be motivated to cooperate within a collective organization? On the question of intraorganizational rules, Barnard mentioned that he was largely influenced by the work of Eugen Ehrlich (1913) in *The Fundamental Principles of the Sociology of Law* (Barnard, 1938, preface, xxx). For Ehrlich (1913), the real causes of legal evolution are not found in the state, law, or even the application of legal texts but rather in society. Barnard highlighted that this approach is consistent with his experience. This approach is further confirmed through the analysis of authority; Barnard considered the State to be secondary and that authority does not depend on external sources (see section 3). Notably, Williamson's position is very close to that of Barnard. Law and the State's legal institutions are also given a secondary role – solving conflicts in a major crisis. Here, Williamson agreed with the Barnardian consensual theory of the law (Williamson, 1990, 183).

This explains the distinction Williamson made between public and private ordering. This stance allowed Williamson to highlight the similarities between his perspective and that of Barnard: 'like Barnard, transaction cost economics works out of a private ordering rather than legal centralism approach to contract law' (Williamson, 1990, 184). Essentially, for both authors, the organization is the producer of its own functional rules. While Williamson kept the rules of public order in the background as the last recourse in the persistent conflict within the organization, Barnard barely mentioned them. Notably, at no point in his book did Barnard mention the expressions 'private ordering' and 'legal centralism'.

This brief inquiry into legal matters highlights the multidisciplinary nature of the two approaches because both authors were influenced by organizational theory, economics, and law to varying degrees. With such similar starting points, the two authors each undertook a close analysis of the internal organization, understood in both cases as a system of coordination and cooperation. Even if they did mention coordination – mainly concerning communication within the organization – cooperation remained their common central theme.

Therefore, it is important to focus on the major aspects of formal structure that encourage cooperation: incentives. Further, we need to analyse the nature of intraorganizational cooperation developed by these two authors. On these points, Williamson claimed to have faithfully continued Barnard's work and highlights that the latter, in many ways, pre-empted the notion of the firm with transaction costs theory. Moreover, both authors had a theory on organizational cooperation due to a different understanding of the relationship between formal structure, the mechanisms of coordination, and the cooperative behaviour of individuals.

Although Barnard addressed the organization in general, Williamson strictly limited his study to the capitalist firm (and the hierarchy). However, despite Williamson's narrow study area, he considered the firm an 'organizational unit' (Williamson, 1990, 183) and was thus consistent with Barnard. Additionally, compared to Williamson, who considered himself an economist, Barnard's work belongs to the field of organizational theory. However, there are many 'economic' elements in Barnard's work, whereas Williamson, an economist, showed on many occasions the importance of the contributions of organizational and legal theory (see Williamson 1993a, 1993b, 2005). Notably, Williamson indicated that although Barnard was famous in the 'field of organization theory', he had 'intuitions' close to those of an economist (Williamson, 1990, 172). Thus, both authors could be considered to belong to the 'science of organization' field, which includes economics. In one chapter in *Organization theory from*

*Chester Barnard*, Williamson (1990) quoted Barnard, for whom ‘there is no science of organization or of cooperative systems; and the development of the sciences called social has clearly lagged far behind those called physical and mathematical’ (Barnard, 1938, 290). Thus, Barnard presents *Functions of the Executive*, as a ‘contribution’ to this science (Barnard, 1938, 292), hoping that his project would be continued and completed by others.

For Barnard, the organization is a form of cooperation that is ‘conscious, deliberate, purposeful’ (Barnard, 1938, 4) and is a social system characterised by formal and informal organizations. Formal organization is ‘a system of consciously coordinated personal activities or forces of two or more persons’ (Barnard, 1938, 73). An informal organization involves contracts or interactions between two or more people, which ‘occur and continue or are repeated without any specific conscious joint purpose’ (Barnard, 1938, 114). Furthermore, an organization exists when (i) there are people capable of communicating among themselves, and (ii) they agree to contribute to some form of action (iii) and achieve a common goal. Thus, members’ willingness to cooperate is central for Barnard, and this argument will have a strong intellectual impact on the heuristic analysis of governance proposed by Williamson.

### 2.2. Human incentives and cooperation

For Barnard, the system of incentives is essential for cooperation between individuals. Williamson’s analysis of incentives is close to Barnard’s but is more simplistic despite their common ground. By analysing the net satisfaction gained by each individual through their participation in the organization, Barnard devoted an entire chapter to ‘economy of incentives’ (Barnard, 1938, chapter XI). Accordingly, the organization provides each of its participants with an ‘inducement’ and receives a ‘contribution’ in return. This interaction between the individual and the organization establishes a balance between two entities with compatible interests. This perspective was continued by James March and Simon (1958) in the *Theory of Organizational Equilibrium*.

Thus, incentives are central to Barnard’s approach. Notably, he considered that ‘the power of cooperation (…) is dependent upon the willingness of individuals to cooperate and to contribute their efforts to the cooperative system’ (Barnard, 1938, 139). Then, the role of incentives is to induce cooperation. Inappropriate incentives in formal organizations are the reason they do not achieve this goal. Additionally, as we demonstrate later, incentives are the foundation of obedience and acceptance of authority. To develop cooperation, Barnard indicated that the organization uses two complementary methods: the ‘method of incentives’, partially analysed by economists, and the ‘method of persuasion’, mostly ignored. According to Barnard, the combination of these methods depends on the type of organization, and incentives are stronger in commercial organizations, whereas persuasion is stronger in religious and political organizations (Barnard, 1938, 141).

The first method provides incentives with an ‘objective’. It involves several devices, among which ‘material rewards’ such as money play a particular role. Although Barnard recognised this role, particularly in commercial organizations, he considered its importance exaggerated, particularly by the economists who perpetuated the ‘illusion’ (Barnard, 1938, 143) that money and material goods play central roles in accounting for the behaviour of agents. As he mentioned, this illusion is ‘the result of the neglect of motives and the excessive imputation of logical processes in men by the earlier economists, and in purely theoretical economics’ (Barnard, 1938, 144). According to Barnard, money-related incentives should be reinforced by other incentives such as distinction, prestige, personal power, and working conditions, which are considered ‘much more important than material rewards in the development of all sorts of organizations, including commercial organizations’ (Barnard, 1938, 145). Similarly, the growth of organizations and the ‘hierarchy of positions’ (Barnard, 1938, 160) are elements that could well lead to incentive strategies, particularly for salaries and prestige. Therefore, a large organization is better positioned to implement incentive devices.

Barnard’s second device is from incentives considered ‘subjective’ and uses persuasion to modify an individual’s state of mind, personal attitudes, or motivations to obtain the correct incentives. The organization can use coercion to exclude individuals and create fear in the remaining members, leading them to ‘render to organizations certain contributions’ (Barnard, 1938, 149). It can also convince and inculcate motives through education and training (Barnard, 1938, 149–153).

For Barnard, overall, ‘the willingness to cooperate’[6] is the net effect. It is the first of the inducements in conjunction with the sacrifices involved and then compared with the practically available net satisfactions afforded by alternatives (Barnard, 1938, 85). However, Barnard insisted on the difficulty organizations face in offering appropriate incentives under all circumstances and consequently considered the cooperation resulting from a system of incentives to be weak and variable[7]. Williamson shared Barnard’s opinion that cooperation is not spontaneous; it must be activated through a system of incentives. The link between incentives and cooperation is important because Williamson distinguished two types of cooperation, ‘perfunctory’ and ‘consummate’: ‘consummate cooperation is an affirmative job attitude – to include the use of judgement, filling gaps, and taking-initiative in an instrumental way. Perfunctory cooperation, by contrast, involves job performance of a minimally acceptable sort’ (Williamson, 1975, 69). Under these conditions, employees in an unhappy relationship with their employer can opt for minimal cooperation, reducing the organization’s efficiency (Williamson, 1985, 262).

Nevertheless, the firm possesses its incentive tools that are unconnected to the market. He gave the example of career-related rewards, which promote ‘team spirit’. Notably, the real and only method of incentives – one which Barnard and Williamson had in common – is the possibility for employees to ‘carve out’ the rungs of the hierarchical ladder. For Williamson, the ‘ranks’ of the internal market are therefore an incentive to cooperate because ‘worker can anticipate that differential talent and degrees of cooperativeness will be rewarded’ (Williamson, 1975, 78)[8]. Thus, the hierarchical structure of internal work markets encourages ‘consummate cooperation’ (Williamson, 1975, 80).

Overall, Williamson’s thought on the variety and efficiency of the incentives system is not as exhaustive as that of Barnard; in particular, the problems of non-monetary incentives and methods of persuasion are not mentioned. As observed, these questions are present in Barnard’s work; the complex nature of incentives explains the choice of the expression *economy of incentives*, meaning that the incentives must be combined somehow. However, finding the right ‘balance’ is very difficult (Barnard, 1938, 156 and 158)[9]. In his 1975 book, Williamson explored these aspects. However, he later abandoned them in favour of the hypothesis of the contractual man (see Baudry and Chassagnon, 2010). For Williamson, the main consequence is that formal contracts take precedence in the quest for efficient

[6] That is, in addition to obey. See the next point.
[7] This question is explained in further detail in section 3.
[8] Here is a reference to Barnard’s *hierarchy of positions*.
[9] Moreover, the incentives framework is very unstable because of variations in external elements and human motives (Barnard, 1938).

transactions. These non-monetary aspects were difficult to operationalise in economics; integrating them fully into the heuristic analysis of governance structures made it difficult to remain in Fuller's 'workable arrangements' and offer an analysis that hardly remained complementary to the conventional economic analysis.

## 3. The Economy of Authority in the Science of Organization

Both Barnard and Williamson considered authority as a device that facilitates cooperation through the obedience of individuals. As Barnard highlighted, 'subjective' authority reflects the 'willingness of individuals to contribute to organizations' (Barnard, 1938, 161). The link between the system of incentives and authority is essential as individuals obey because it is in their interest. Therefore, the greater the 'incentives', the more the individuals are inclined to accept orders. The extent to which the zone of indifference is wide or narrow indicates the degree of cooperation of the individuals. Williamson agreed that individuals obey due to incentives. Thus, obedience is a sign of acceptance of cooperation by employees, reflected in the flexibility allowed in the 'contract of employment' (Williamson, 1985, 218–219).

### 3.1. The role of authority in the cooperative processes

Barnard developed an original[10] theory of the source of authority, stemming from the consent of individuals than from the restrictions imposed by superiors. He distinguished between two types of authority: 'subjective' authority, that is, the acceptance of the authority by the organization's members, and 'objective' authority, the basis for coordination within the formal structure through the cooperative system.

He defined subjective authority as 'the character of a communication (order) in a formal organization by which it is accepted by a contributor to or member of the organization as governing the action he contributes' (Barnard, 1938, 163). Individuals accept authority under four conditions (Barnard, 1938, 165–168): (1) they must understand the order issued, (2) they must believe that this order is compatible with the purpose of the organization, and (3) their personal interests, and (4) they must be mentally and physically capable of conducting the order. If the order is not accepted, authority is undermined, and in these cases, Barnard considers that nobody has that authority. There must be an 'acceptance or consent of individuals' to speak of authority (Barnard, 1938, 164).

Condition (3) is fundamental because an individual will accept authority if the perceived reward is sufficient. As Barnard showed: 'the existence of a net inducement is the only reason for accepting *any* order as having authority' (Barnard, 1938, 166). That is, to accept authority, individuals calculate the perceived reward concerning the contribution made while considering outside opportunities (Barnard, 1938, 17). This idea, in which authority is from the individual, can be understood as, 'zone of indifference' (Barnard, 1938, 167), a zone within which orders are accepted without questioning their authority. The width of this zone depends on weighing the advantages and costs to individuals if they agree and determines individuals' degree of cooperation with the organization.

As explained, the second type of authority – objective authority – refers to the communication system of formal organization, establishing the 'lines of authority' (Barnard,

[10] This notion has been criticised in the literature; see for example Charles Perrow (1986) and Steven Feldman (1996).

1938, 175). This cooperative system supposes that each person has a precise position in the organization, such that the communication networks are regulated, the lines of communication are as short and direct as possible, and the communication from top to bottom should pass through every stage of the line of authority. Overall, if objective authority is the basis for relations of authority through the communication system of formal organization, it does not imply an acceptance of this authority, which then takes a ‘subjective’ nature.

For Williamson, there is a recurrence of references to the concept of intrafirm authority because authority allows a distinction between the firm and the two other governance structures: hybrid organization and the market (see Williamson, 1991, 1996, 1999). Since his 1975 study, he placed authority at the heart of his analysis of cooperative work relations in the firm by using Coase’s premise of analysis (1937): ‘hierarchy usually implies a superior-subordinate relationship’ (Williamson, 1975, xv). In his 1985 study, Williamson also reasserted the market and firm contrast, defining the ‘unified structures – that is, the firm – as follows: ‘the transaction is removed from the market and organized within the firm subject to an authority relation (vertical integration)’ (Williamson, 1985, 75–76).

For Williamson, intrafirm authority is based on two complementary but different devices. The employment relationship would first be associated with a ‘voluntary subordination’ (Williamson, 1975, xv). As per Williamson, individuals could choose between fitting into a hierarchy and another type of economic organization, such as a group of peers. If they choose the former, they increase their level of satisfaction by freely accepting authority and, therefore, a hierarchical relationship. Williamson considered that authority results from adherence to the organization freely consented to by individuals considering a cooperative hierarchical relationship to benefit them. Here, Williamson agreed with Barnard, indicating that he used Barnard’s ‘consensual view of authority’ (Williamson, 1990, 175).

Moreover, similar to Barnard, Williamson perceived members as accepting commands and orders within a ‘zone of acceptance’ (Williamson, 1990, 176)[11]. This term is from Simon (1947), who substituted it for the term ‘zone of indifference’, though the meaning is the same. This is because Simon had multiple correspondences with Barnard (see also Mitchell and Scott, 1988), clarifying that he had taken up Barnard’s idea.

However, Williamson also joined Coase (1937) and Simon (1951) in supporting the notion that authority is from the specific legal nature of the work contract. Notably, for Williamson, the legal rules of the institutional environment constituted resources complementary to private arrangements and represented the ‘rules of the game’ (Williamson, 1993a, 113). These rules allowed for appeals to tribunals in case of a failure of conflict between employer and employee and were useful in outlining the ‘threat positions’ from a game theory perspective (Williamson, 2002a, 440). Thus, they reduced the contractual risks that would probably undermine exchanges. For Williamson, the understanding of authority as consensual should not ‘go too far’, in the sense that it is notably contradicted by ‘authoritarian states’ (Williamson, 1990, 175).

### 3.2. Authority as a hierarchical logic of coordination

[11] This term is from Simon (1947 [1976b]), who substituted it for the term ‘indifference zone’, but the meaning is the same.

Williamson took a different, although complementary approach from Barnard when he claimed that the State is like a Damocles' sword, that is, even if it is relatively absent in the day-to-day contractual relationship, its presence is felt in the case of persistent conflict. However, it is also possible to relativise this discrepancy between the two authors because Barnard also referred to the State during his investigation of the sources of authority and does not neglect the legal underpinnings of the employment relationship. He proposed a different explanation, which puts an 'external' source – the State – in the position of the source of authority. Notably, Barnard did not challenge the 'legalistic' conception of authority (Barnard, 1938, 181); however, for him, any authority without the individual's consent is absurd. Thus, any attempt to order by law working conditions, which individual employees do not accept, would be 'futile' (Barnard, 1938, 182); the authority would be challenged, and the employee would leave the organization, which would then be jeopardised[12].

However, this fundamental argument does not exist for Williamson because the employee mechanically obeys without questioning authority. This is how authority can manage potential opportunistic behaviour by the employees. An appeal to the *fiat* allows the employer to resolve potential conflicts: 'an authoritative order is usually a more efficient way to settle minor conflicts than is haggling or litigation' (Williamson, 1975, 101). Notably, unlike Barnard, Williamson did not examine the possibility that employees may question orders or leave the organization[13]. Barnard's employee has 'power' concerning the costs to the employer if he leaves the organization, whereas Williamson's employee is not in a position to question authority (see Williamson, 1995). This difference in the depth of analysis is more evident when considering Williamson's theory in the light of Barnard's four conditions for the acceptance of authority because only the third, concerning net gain, is truly retained.

Notably, the other three seem extremely important and raise real questions. The first condition states that the employee must understand the order. Not setting this condition could allow for the problems within the organization to disturb the process of cooperation. The same is true of the second condition; Barnard highlighted that the individuals would reject the authority when orders are contradictory or subtly understood by them. This condition reinforces the importance of the individuals' interpretation of orders and their fragility and non-automaticity. Finally, the fourth condition presents the possibility that an individual might be ill-placed in the organization, in which case he would be unable to conduct the order in question.

Fundamentally – and this is a recurring argument – these conditions show Barnard's recognition of three perspectives on the ties between the organizational structure and the behaviour of individuals. First, the individual's choices are not completely determined by structure; this is the theory of free will (Barnard, 1938, 13), which states that individuals retain a degree of liberty. Second, these conditions highlight the capacity of individuals to think about the meaning of their actions and have goals and values that could conflict with those of the organization. These two points question the legitimacy of the authority of the hierarchical superior. Notably, in this spirit, Barnard endeavoured to distinguish between the authority of leadership and position. Finally, Barnard listed the possible deficiencies of formal

[12] Furthermore, Williamson analysed authority purely within the capitalist firm, whereas Barnard focused on the organization in general. Thus, the type of authority in a capitalist firm or a political or religious organization differs. This most probably explains Barnard's more consensus-based approach, whereas Williamson's approach involves the intervention of 'State authority'.

[13] Albert Hirschman (1970), with his analysis of *Exit, Voice and Loyalty*, would likely be considered following Barnard's line of thought on this point. This idea was also defended by Williamson himself in the interview he gave in 2007 to David Gindis and Geoffrey Hodgson (see Williamson, 2007).

organizations: contradictory orders and failed integration of individuals into the organization. None of this is present in Williamson's work because he did not examine the possibility of problems within the structure, and he considers individuals to behave in a contractual logic. From this perspective, we can consider a more functionalist theory of structure and authority (Dow, 1987), where individuals appear to be contractually inferior to the hierarchical superior and are not in a position to think about their situation[14].

Regarding both authors, the authority has two functions: coordination and cooperation. Coordination refers to Barnard's 'objective authority' and allows first establishing a communication system necessary to ensure good coordination between members of the organization. *Through* the 'lines of authority', objective authority is essential for formal organizations to survive despite environmental changes. It also assigns responsibilities complimentarily through a system of delegation. As Barnard indicated, 'the critical aspect of this function is the assignment of responsibility – the delegation of objective authority. Thus in one sense, this function is that of the scheme of positions, the system of communication' (Barnard, 1938, 231).

This link between authority and coordination is also seen in Williamson's work. A system of organizational communication must be implemented to be authentic, authoritative, and intelligible to be fast and efficient (Williamson, 1975, 102). Williamson considered that this type of communication is facilitated by a hierarchical organization built on status. Similarly, authority allows 'economies of communication' (Williamson, 1975, 47) through centralised organizations. Williamson then highlighted the authoritative assignment of decision-making responsibility to the occupant of the centre is again indicated. As in Barnard's case, authority can be observed through the lines of communication (Williamson, 1975, 102).

## 4. Toward a theory of cooperation in the science of organization

The economy of incentives and the economy of authority are the two pillars of cooperative processes in organizations. Additionally, for Barnard and Williamson, the persistence of cooperation and human adaptation and the continuity of organizations are essential for advancing toward a science of organization. Moreover, in Simon's (1991) opinion, when individuals make decisions, they are limited by their values and goals. Therefore, it is important to return to the context of developing loyalty and a sense of belonging to the organization, including in a farsighted organizational perspective. Here the role of hierarchical superiors is important as they must guarantee adherence to the norms and principles inculcated by the firm itself and convey the cooperation principles in both formal and informal organizations. Based on his pioneering analysis of the informal organization, Williamson proposed to link the notion of atmosphere[15] to that of cooperation and found new building blocks for microtheory in order to contribute to the evolving science of organization.

[14] This argument suggests that Barnard and Williamson did not have the same vision of the limited rationality of agents. Barnard was more interested in the rational logics underlying the procedures, while Williamson favoured an argument of efficiency and transaction cost minimisation. Thus, one might think that the integration of behavioural and informal aspects – notably concerning motivation – would make it possible to better understand the limits of formal contractual relationships, hierarchy and internal transactions (see for example the work of the Nobel Prize Laureate Oliver Hart (2001), supplementing those of Williamson).

[15] Atmosphere (which is "organizational atmosphere") can be defined as a satisfying exchange relationship that exists within the boundaries of the internal organization of the firm.

Williamson's pragmatic methodology gradually brought him closer to conventional economic analysis seen in his 1985 book on *The Economic Institutions of Capitalism* (see Williamson, 2009). However, he had always reiterated the interest in multidisciplinary analysis and the consideration of informal elements in economics[16] (see Williamson, 2007), thus, never contradicting his early works.

### 4.1. The coexistence of formal and informal organizations in Barnard's cooperative systems

To summarise Barnard's thoughts, the difficulties of cooperation in organizations reflect the complex nature of the rationality of individuals and their ability to maintain a level of autonomy in decision-making within the organization. Hence, the need for leadership. These difficulties are summarised as follows:

> the limitations imposed by the physical environment and the biological constitution of human beings, the uncertainties of the outcome of cooperation, the difficulties of common understanding of purpose, the delicacy of the systems of communication essential to organization, the dispersive tendencies of individuals, the necessity of individual assent to establish the authority for coordination, the great role of persuasion in securing adherence to organization and submission to its requirements, the complexity and instability of motives, the never-ending burden of decision – all these elements of organization, in which the moral factor finds its concrete expression, spell the necessity of leadership, the power of individuals to inspire cooperative personal decision by creating faith. (Barnard, 1938, 259)

First, we must return to Barnard's distinction between formal and informal organizations. Within formal organizations, because the actions of individuals are 'conscious' (Barnard, 1938, 116) and the means are adapted to the goals of the organization, coordination is a 'logical process' (Barnard, 1938, 186). Notably, referring to the notion of the limiting factor defined by Commons (1934), Barnard (1938, 202–205) highlighted that individual choice is limited by the need to concentrate on a subsidiary system to make decisions. Due to their incapacity to analyse a situation from every angle, individuals must choose based on a limited representation of reality that is too complex. Therefore, this process is seen as a 'successive approximation' (Barnard, 1938, 206). As Malcolm Rutherford (2009, 446) explains, Barnard's 'discussion shares important elements with Commons' work on industrial goodwill (see Commons, 1919), the nature of a going concern, and the managerial transaction'. Additionally, Barnard provided a bridge between Commons and Williamson's use of the transaction as the basic unit of analysis, although Williamson's use of the transaction concept differs from that of Commons (see Baudry and Chassagnon, 2019).

[16] In *Markets and Hierarchies* (1975), Williamson revisited the Barnardian distinction between formal and informal organizations and analyses the informal dimension of the organization through the notion of 'atmosphere'. Acknowledging Barnard's role in developing the theory of transaction costs, he wrote, 'Barnard's notion of 'informal organization' is useful to transaction cost economics in two respects. First, informal organization arguably helps to safeguard the security and integrity needs of employees […] For another, informal organization may be a manifestation of a more general condition of 'atmosphere', the effects of which serve to distinguish market and hierarchical modes or organization' (Williamson, 1990, 184).

Barnard used different ideas of Commons based on the strategic or limiting factors in transactions that provide insights into his treatment of executive decision-making. Decision-makers must consistently review and redefine their goals, depending on changes in their environment, a process in which 'the march of time is essential'. Here a similarity is noticed to previous analyses by Simon (1976a) in terms of 'procedural rationality'. Echoing critiques of the economists' notion of the individual, Barnard suggested that 'the exaggeration in some connections of the power and the meaning of personal choice are vicious roots not merely of misunderstanding but a false and abortive effort' (Barnard, 1938, 15).

This limiting factor is the first point of difficulty in decision-making. Decision-making is also complex within an informal organization, in the sense that the actions of individuals are neither conscious nor intellectual, compared with conscious actions within a formal organization. As the informal aspects are due to factors that cannot be calculated or are outside the calculative capacity of the individuals, the choice of cooperative behaviour cannot be from perfect rationality. Overall, the difficulties of decision-making illustrate the limitations of formal structure in directing the behaviour of individuals. Finally, decision-making is more difficult because, for Barnard, the individual's motives are by definition very unstable; these motives are influenced by the 'moral codes' of the organization and managers, determining private codes of conduct and cooperation.

Overall, this first point explains the difficulties of intraorganizational cooperation because the individuals, given their bounded rationality, have difficulty understanding the organization's goals, do not always know which decisions are correct, and find themselves subjected to contradictory feelings, as Simon (1947) explained, completing the work of Barnard. Furthermore – this point complements the first – Barnard's individuals in an organization essentially maintain their freedom of choice and autonomy. This is reflected in Barnard's doctrine of free will: 'almost universally in practical affairs, and also for most scientific purposes, we grant to persons the power of choice, the capacity of determination, the possession of free will' (Barnard, 1938, 13). What does this mean? For Barnard, this premise is necessary for preserving 'the sense of personal integrity' and, thus, for cooperation to be possible. This liberty of choice is limited by physical, biological, and social factors because the range of possible choices is always limited. The environment does not completely determine the individual's behaviour, and the organization provides a context that limits the behaviour and choices of the individual[17]. This reasoning is perfectly applicable to the actions and behaviours within informal organizations. Notably, informal organizations create certain attitudes, customs, habits, and social norms, restricting the behaviour of individuals (Barnard, 1938). However, informal organizations constitute an important element of communication and, in particular, preserve people's feelings of integration and freedom of choice.

This premise of freedom of choice implies uncertainty in behaviour within both formal and informal organizations and explains Barnard's insistence on the executives' process in determining human behaviour. Given the bounded rationality of individuals and the uncertainty of their behaviour because of their free will, we can better understand why Barnard is sceptical of the concrete efficiency of the system based on monetary incentives[18]. For him, it is not the sole cause of cooperation and is one reason for resorting to the other method: persuasion. Nevertheless, it is impossible to establish a system of incentives *ex-ante* because of the unpredictability of its effects. For Barnard, 'the scheme of incentives is probably the most unstable of the elements of the cooperative system since invariably external

[17] This original position was summarised by Barnard on page 21 of his 1938 book.

[18] As Gabor and Mahoney indicate, 'Barnard understood better than most executives–then or now–, the importance and difficulties of conventional incentive schemes' (Gabor and Mahoney, 2013, 134).

conditions affect the possibilities of material incentives, and human motives are likewise highly variable' (Barnard, 1938, 159).

The same type of reasoning can be applied to authority, which is not automatic because individuals essentially maintain their free will; they are free to make decisions even if this freedom is partly limited by their environment. Moreover, the system of incentives is not a total guarantee that individuals will obey. This helps us better understand Barnard's theory of cooperation. The structure and mechanics of cooperation cannot guarantee sufficient cooperation of the members of the organization. Barnard wrote that 'successful cooperation in or by formal organizations is the abnormal, not the normal, condition' (Barnard, 1938, 5). As he highlighted, to believe that the structure and process of cooperation without leadership are sufficient would be 'erroneous' (Barnard, 1938, 259). Hence, in the last part of his work, he argued for joining the two management cultures: the science of management and the art of management (Barnard, 1938, 290–291). Science of management or that of the organization cannot alone produce cooperation; it must work in conjunction with the art of management, which depends on intelligence and inspiration (Barnard, 1938, 293).

These mechanisms are important, even when insufficient, because the opposite is also true – leadership and moral factors cannot create cooperation: 'cooperation, not leadership, is the creative process' (Barnard, 1938, 259) – but leadership is for Barnard one of the indispensable fulminators of cooperation. Leadership also implies 'responsibility' (Barnard, 1938, 260), 'the quality which provides dependability and determination to human conduct, and foresight and ideality to purpose'. The greatest expression of responsibility, according to Barnard, is the executive function of moral creativeness. The peculiarity of this function is to control desires, impulses, and sentiments rather than rational processes. Subsequently, he says that the distinctive feature of executive responsibility is creating moral codes for others. Concretely, it is a matter of inculcating perspectives, fundamental attitudes, and a sense of loyalty to the organization and the cooperative system, and the system of objective authority (Barnard, 1938, 279).

### 4.2. Rationality, farsightedness, and adaptation in organizations

It appears *a priori* that the Williamsonian concept of the rationality of individuals is reasonably close to that of Barnard. Notably, Williamson, who emphasised the linguistic and neurophysiological limits of the individual, considers that 'human decision-makers are not lightning calculators' (Williamson, 1975, 21). He thus held a behavioural hypothesis of bounded rationality[19]. Bounded rationality refers to the difficulty individuals face in receiving, storing, and sorting information and their trouble communicating their knowledge and sentiments to others[20]. A consequence of this is the high cost, or even impossible, in identifying future contingencies and specifying appropriate adaptations to the future states of the world *ex-ante*. This limit on rationality makes decision-making even more complicated when the environment is complex and uncertain (Williamson, 1975, 22–23).

[19] Different from the 'maximizing' rationality of neoclassical economic theory.

[20] This occurs even if Williamson proposes a form of bounded rationality, compatible with the hypothesis of opportunism of agents and the principle of minimisation of transaction costs (see Baudry and Chassagnon, 2010).

Consequently, for Williamson, 'most decision problems, unlike board games such as chess, are not deterministic but involve decision-making under uncertainty' (Williamson, 1975, 23). In such cases, 'approximation' replaces 'exactness'. Notably, Williamson used the exact word that Barnard employed to describe the nature of decision-making: 'approximation'.

Williamson did not, however, draw the same conclusions as Barnard from these developments of decision-making and the behaviour of individuals within the organization. Notably, in his later works, Williamson changed his position on rationality by highlighting that although individuals have bounded rationality and, consequently, contracts are incomplete *ex-ante* and *ex-post*, they have a 'farsighted approach to contracts'. This means that because of their 'farsighted propensity' and their 'rational spirit' (Williamson, 1993a, 116), individuals can make up for potential weaknesses and problems in the organizational framework. The influence that information economics and contractual economics had at the end of the 1980s was part of Williamson's thinking and methodological shift towards a more incentivised and contractual approach to the firm (see Williamson, 1991). For instance, when considering the vicious bureaucratic circle demonstrated by Merton and Alvin Gouldner[21], Williamson observed that 'once apprised of the added consequences, the farsighted economist will make allowance for them by factoring these into the original organizational design' (Williamson, 1993a, 117).

Here, Williamson seemed to take a step away from Barnard's perspective, according to which individuals are incapable of understanding the totality of a situation. Therefore, they must choose based on a simplified representation of reality, and that the instability of their motivations and sentiments prevent them from making a 'rational' decision. Accordingly, the two authors had complementary understandings of the cooperative organizational framework – for Barnard, it was incomplete and imperfect by definition, whereas, for Williamson, it was the farsighted approach to contracts and adaptation processes as steps towards efficiency.

From the historical perspective of economic thought, we also understand here that Barnard–Simon's lineage counted greatly in Williamson's science of organization (see Williamson, 2009). Williamson often borrowed concepts from Simon who coined from Barnard's work, notably on rationality and individual adaptation and cooperation. Williamson's wish of the science of organization was part of a desire for realism, which according to him, is a continuation of Barnard's work (Williamson, 1990). However, concerning Barnard's legacy in the science of organization, some differences between the two thoughts could be because Williamson limited his analysis of Barnard's work to his classic work of 1938. In other contributions, Barnard's posture had been somewhat clarified and seemed to complement Williamson's later theoretical developments more. For example, without managing contractual farsightedness, Barnard (1936) seemed to develop a perspective that will complement the dynamic relational view of contracts, developed in the older work of Williamson (1975, 1985)[22]. Indeed, Barnard explained:

> Foresight is not foreseeing, but the effective adjustment of conduct by matching probabilities against significant possibilities. Usually, the possibilities that are significant to us are not those that we know will happen, but those that have happened; and the probabilities that we hope or fear will be realized are those that have been experienced in the past with considerable uniformity. Our sense of both

[21] These authors have analysed failures in bureaucratic organizations, caused by procedures based on a mechanistic and the Taylorian concept of human behaviour.

[22] See also Gibbons (2021) on this point.

> the possibilities and the probabilities is largely a derivation of the past. It is not foresight, but projected hindsight. (Barnard, 1936, 47 in Wolf and Iino, 1986)

According to Williamson, if the contracts are incomplete, the transaction is not left to chance; the experience of past transactions leads individuals to improve the contractual framework consistently. In a 1993 article, Williamson (1993b) recalled the role of game theory in understanding organizations and cited the works of Partha Dasgupta (1988) and David Kreps (1990). The study of the atmosphere in the organization is another application of this reasoning.

### 4.3. The atmosphere as the cornerstone of Williamson's science of organization

Williamson used the reference to the atmosphere to consider the interactions between individuals, limiting calculative relations. This is considered an 'object of value' (Williamson, 1975, 38) because it increases the level of satisfaction of the contracting parties. The governance structures can thus differ in terms of the atmosphere: 'market exchange tends predominantly to encourage calculative relations […]; internal organization, by contrast, is often better able to make allowance for quasi-moral involvements among the parties' (Williamson, 1975, 38). More precisely, Williamson distinguished two contractual atmospheres linked to two contractual methods of internal organizations (Williamson, 1975, 79). The 'individualistic contracting mode', characterised by rewards and based on individual performance, is linked to the atmosphere of market calculation. This atmosphere encourages opportunistic behaviour and is likely to be detrimental to cooperative attitudes. The 'collective contracting mode' is characterised by the payment, learning, and career process connected to job position and seniority. According to Williamson, this second type of atmosphere limits opportunistic behaviour and promotes a greater sense of fairness and cooperation by limiting individual prejudices. Overall, Williamson's analysis seems fairly close to that of Barnard because the notion of the atmosphere has its roots in the workings of informal organizations.

For Barnard, the division of the organization into formal and informal can be attributed to the presence of non-calculative factors in the individual's behaviour. As demonstrated, these factors are mainly the result of customs, habits, and history. For Barnard, who appreciated old institutional thought and the work of Commons, they are an integral part of internal structure and create uncertainty regarding the behaviour of individuals. The connection between Barnard and the original institutionalism is obvious here (see Rutherford, 2009) and considers the interaction between formal and informal types of organizations. Moreover, it is impossible to understand organizations without studying informal organizations (Barnard, 1938, 123). Barnard noted the ambivalent nature of the informal organization. Allowing individuals' liberty of choice and reinforcing personal attitudes (Barnard, 1938, 122) is potentially detrimental to formal organizations. However, individuals can maintain their personality, which is threatened by the restrictions of formal organization.

Notably, in Williamson's work, the analysis of informal organizations, renamed atmosphere, presents three particularities. First, the notion of the atmosphere is particularly developed in his book *Markets and Hierarchies* (1975) and explored in his book *The Economic Institutions of Capitalism* (1985). Williamson returned to this notion on several occasions without providing new ideas (Williamson 1990, 1993b). Second, the atmosphere is not deeply analysed. Williamson merely suggested that individuals have different preferences, for example, about control (Williamson, 1975, 39), but these preferences are not explained (see Baudry and Chassagnon, 2010). They are given and are therefore unaffected by the interactions between formal and informal organizations. Finally, a fundamental point concerns Williamson's endeavours to 'neutralise' the unpredictable effects of informal organizations on formal organizations by 'eliminating' the non-calculative effects. Williamson incorporated the elements that make up the atmosphere into a formal structure to realise this process. Two examples illustrate this argument.

Williamson noted that control and the measure of inputs favour an atmosphere where people constantly calculate gain and loss, not conducive to cooperation. If the organization aims to offer a satisfying relationship of exchange, he supposes that it is then a matter of identifying the preferences of individuals and offering them a structure adapted to their 'feelings'[23], using a rational approach. The second application of this reasoning is from Armen Alchian and Harold Demsetz' 1972 article, where they investigated the personal use of university phones and paper by teachers and suggest that greater control could end these practices, increasing the total revenue. Williamson criticised this reasoning by drawing attention to the interactions between several types of transactions. For him, controlling such practices from informal organizations could result in 'resentment' (Williamson, 1975, 56), decreasing the cooperation of teaching staff. Once they are analysed and understood, informal organizations' uncertain effects can be efficiently incorporated into the formal structure. Therefore, it could be 'rational' and efficient concerning transaction costs economising to offer employees a less controlled atmosphere.

This search for efficiency marks a difference between Williamson's science of organization and Barnard's ideas. Barnard thought that behaviour within the informal organization remains unchanged in its 'non-logical' nature, and consequently, there remains a level of unpredictability in the behaviour of individuals. Williamson's work does not display the same theoretical role on the motives of members of organizations. Nevertheless, Williamson added a second hypothesis to the behavioural hypothesis of bounded rationality, in the view of asymmetric information economics – the individual's capacity to be potentially 'opportunistic', which is, adopting a type of behaviour aimed at taking advantage of contractual non-fulfilment by using different techniques (lies, trickery, manipulation and deforming of information). Considering that the potential propensity towards this type of behaviour is from human motives, the consequence, according to the Williamsonian analytical plan, is the following: The organizational framework must incorporate these uncertainties such that this *ex-post* opportunism, 'non-cooperation', cannot become a reality. The farsighted approach to contracts here can be properly understood: The role of organizational structure, established *ex-ante,* is to supervise behaviour and direct it towards cooperation.

This exercise in behavioural control is less of a problem when considering the doctrine of free will, important in Barnard's work. As demonstrated, Barnard's individuals have a very large degree of autonomy and complex decision-making processes that do not allow executives to anticipate predictable behaviour *ex-ante*. Williamson appropriated this perspective when he suggests that employees can implement two levels of cooperation: minimum and maximum[24]. The employee would thereby have a 'degree of autonomy'[25] in how he does his work, the consequence of contractual non-fulfilment. Nevertheless, this reasoning – close to Barnard's notion of free will – is not actually developed in the four stages of Williamson's science of organization based on incomplete contracts literature (see

[23] Williamson noted: 'given that individuals differ with respect to their preferences for metering (…) the issues are to supply the requisite mixture of structures, which vary in the intensity of metering (…) and to recognize the possibility of attitudinal interaction effects among sets of transactions' (Williamson, 1975, 55).
[24] See section 2.
[25] Williamson used the expression 'worker discretion' (Williamson, 1985, 262).

Williamson, 1993c), and its significance is greatly reduced when faced with this unpredictability of individual behaviour; the organization can devise good incentive plans *ex-ante*. For Barnard, the individual's capacity to maintain some autonomy in decision-making renders authority and the effectiveness of incentives very uncertain, resulting in an undetermined level of cooperation. However, for Williamson, the behaviour of individuals can be largely determined by the structure, and it is possible to devise incentive plans that render behaviour predictable *ex-ante*. Primarily, this is why Williamson developed a theory of the trade-off between the make (hierarchy) or buy (market)[26]. He considered the market an alternative institution to organise transactions when the conditions of cooperation and productive efficiency cannot be fulfilled within the boundaries of the hierarchy, providing economic interest to the market in the organization of this transaction (see Williamson, 1991).

### 4.4. The atmosphere and the development of the new institutional economics

Managers must achieve cooperation and manage potential opportunistic behaviour to implement a good organizational design. However, after his 1975 book, Williamson did not consider 'moral codes' in creating cooperation, fundamental in Barnard's work. Williamson did not broach the topic of values, and the identity of members, except when considering the firm's atmosphere. In his interview for the *Journal of Institutional Economics*, Williamson (2007) admitted to the shortcomings in his work on this topic:

> I'm sure that the ideas of socialization and of culture are important here. There is cultural socialization within society and within the firm. There are shared insights, experiences, and understandings. There is an informal as well as a formal aspect to organization that goes back to Chester Barnard in 1938. I don't think that our knowledge of informal organization has been as complete and as systematic as it could and should be. In that connection I am a firm believer that the economics of organization should learn from organization theory. (ibid., 377)

This recent interview with Williamson is very important for the history of economic thought and allows us to clarify the intellectual path of the economist. Barnard's place is central to Williamson's work. Considering Williamson's work, this could be the most central intellectual influence he has received. We also understand that integrating new ideas into economics from other social sciences involves making methodological choices that show the specificity of Williamson's work concerning these predecessors. Additionally, one of the consequences, a regret for Williamson, is not having developed pivotal concepts based on informal aspects in new institutional economics.

However, these concepts were difficult to operationalise in economics then, when Williamson wanted to develop a semi-formal approach to organizations in neo-institutional economics. This is the case with the concept of the atmosphere, the heart of the theory of cooperation, which should structure Williamson's science of organization. Moreover, in his 1975 book, Williamson wrote: 'atmosphere is a concept that non-economists are apt to find less objectionable than economists. Indeed, much of what economists do is rationalize how human behavior is to be understood in familiar net gain terms and debunk such relatively loose concepts as atmosphere. Scratch an economist, and you find a deeply committed rationalist' (Williamson, 1975, 256).

[26] See Baudry and Chassagnon (2012) and Chassagnon (2014a,b).

Additionally, in his writings, Williamson (1985, 247) introduced the notion of the ‘relational team’ (see also Macneil, 1978) to characterise the firms which are engaged ‘in considerable social conditioning to help assure that employees understand and are dedicated to the purposes of the firm’. As Williamson explained in this 1985 book (ibid., 246–247), the concept of the atmosphere has progressively been overtaken by the idea of ‘relational contracting’ (Baudry and Chassagnon, 2010; Gibbons, 2021). However, by considering the evolution of neo-institutional economics, the concept of the atmosphere has been indirectly developed and formally operationalised through the concept of the relational contract and, notably, the use of dynamic game-theoretical models (see Baker, Gibbons and Murphy, 2002, 2008).

In recent years, owing to the development of experimental economics, we note the desire within the new institutional economics (now often called organizational and institutional economics; see Brousseau and Chaves, 2019) to rethink the informal foundations of the processes of contractual agreements in keeping with Williamson’s pioneering thoughts and restoring an academic interest in organization science to the concept of atmosphere. One of Williamson’s wishes (and maybe which appease one of his regrets) could then emerge, cultivating multidisciplinary fertilisations, drawing on Barnard’s legacy, to give the atmosphere a ‘specific content’ (see Chassagnon, 2021). In the interview he gave to Geoffrey Hodgson and David Gindis, Williamson said:

> It struck me when I was writing about markets and hierarchies and the role of informal organization that you should not try to quantify everything. If you do, then you may transform the relationship from one of mutual give and take into one of adversarialness. Some things that are better left in an informal way to which both parties can relate and infer from the relationship. An amount of added responsibility and judgement would implied. At that time I was also interested in some of Albert Hirschman’s ideas on loyalty. I was trying to understand what were the important features. Maybe atmosphere was related to some of them. I actually attended a conference and wrote a paper in which I tried to explicate atmosphere.
>
> On the one hand it seemed an important concept and on the other it was hard to give a specific content. I actually invited one of my Yale colleagues who embraced the concept to work on this with me jointly but he declined. Although I let it drift away, that does not mean that I don’t think that it is important. I haven’t been able to persuade any of my students to take it up and work it through. In immediate terms it seems a dead end. I am still intrigued by the concept of atmosphere. (Williamson, 2007, 377–378)

## 5. Conclusion

We have shown that the works of Barnard and Williamson fit into two different historical contexts and have two different intellectual objectives. However, this article shows that Williamson’s claim of continuing Barnard’s work in economics is correct. Williamson sought to complete the Barnardian view of organizations to advance towards a ‘science of organization’ (Williamson, 1993c).

Barnard's and Williamson's organizational approaches are not substitutable but complementary. The legacy of Barnard in the evolving science of organization is clearly founded even though it is true that the two authors have some different theoretical perspectives, which stem from their different behavioural hypotheses and the inextricable tensions between interdisciplinary boundaries. Williamson was keen to offer a microtheory that can be operationalised, even formalised, such that its contribution to the new institutional economics remains complementary in conventional economic analysis. From the mid-1980s, this was a finality of his conception of the 'contractual man' and undoubtedly played a positive role in his attribution of the Nobel Prize in 2009. In this rational perspective, we note that Barnard was a real influencer. Williamson wrote that 'Barnard approached the study of organization very much in a rational spirit, which is to say, in the spirit of an economist' (Williamson, 1990, 170).

Williamson (1993c) wanted to ensure that his microtheory did not constitute in economics what Fuller (1978) called the 'tosh'. Consequently, although questions of identity, reflectiveness, and autonomy are essential for Barnard, Williamson's analysis mainly added individuals to the calculating agents subjected to organizational structure. From a longer historical perspective, although Barnard's work strongly critiques the mechanistic concept of organizations, developed by Taylor, Williamson's work could be a new type of rational approach. Otherwise, these two methodological orientations indicated a line between the two approaches. This included management, which leaves actors great capacity for action in an uncertain environment (see Barnard's famous 'art of management'), and transaction costs in economics which, *through* the farsighted approach to contracts, leaves less individual freedom for organizational actors.

A part of these differences in interpretation between these two authors is also explained as follows: Williamson evolved in his work and increasingly focused on the trade-off of institutional structures (notably, the discrete choice between the market and the hierarchy) to the detriment of his initial and original analysis of the (informal) internal organization of firms. Another thought is that the development of information economics, modern property rights economics, and game-theoretical economics in the contractual analysis of the firm influenced the evolution of the Williamsonian thought (see Williamson, 2009).

Thus, Williamson always used Barnard's ideas, which were workable arrangements without discrediting those that, according to him, could not be easily operationalised in economics. The difficulties in importing key concepts from management to economics caused Williamson to abandon the assumptions that he considered promising until the end of his career, like that of the atmosphere. This scientific consideration, peculiar to Williamson's pragmatic methodology in economics, explains the intellectual development and progression of his ideas. However, Williamson's pioneering work, which from the 1970s, brought to light today, is currently at the heart of the modern field of organizational and institutional economics (see the archives of the Society for Institutional and Organizational Economics and the work of Brousseau and Chaves, 2019, and Chassagnon, 2021).

Historians of economics have paid little attention, thus far, to Barnard's work and to the Barnardian legacy that Williamson often claims in his 'science of organization'. In this paper, we have attempted to fill these gaps by offering an appreciation of this intellectual legacy and opening the door to new research in institutional and organizational economics to rework the (old) major concepts of Williamson's informal organization, which remains to be underdeveloped. It is impossible to know what would have been Williamson's intellectual development and scientific career if he had worked more on the place of informal and even moral elements in his analysis of organizations. However, it seems clear that new institutional economics based on experimental studies is currently beneficial (see Fehr, Hart, and Zehnder, 2011; Fehr and Schmidt, 2013) to contribute to Williamsons' science of organization and carry on the Barnardian and Williamsonian legacies.

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