

RESEARCH ARTICLE

Chester Barnard revisited: spontaneous orders and the firm

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Abstract

That governance within the firm is deliberate, conscious and hierarchical, based on authority is considered almost axiomatic. Chester Barnard is cited as an early theorist of this view. In this short article we review Barnard's original theory of authority, his later work and his private correspondence with F. A. Hayek, Michael Polanyi, Bertrand de Jouvenal and others. We show that Barnard focused in his later thinking less on authority and more on 'responsibility' and on the spontaneous nature of coordination within the firm, argued for 'invisible hand' explanations of coordination within the firm and compared coordination within the firm to market coordination. We use this information to produce novel insights into the work of Chester Barnard and also to demonstrate that his insights into the inner workings of firms is still not completely understood or reflected in the literature on the firm.

Keywords: Spontaneous orders; order; organisation; hierarchy

No book can ever be finished. While working on it we learn just enough to find it immature the moment we turn away from it.

(Popper, 1966: ix)

That governance within the firm is deliberate, conscious, hierarchical and based on authority is considered almost axiomatic (Arrow, 1974: 63). Chester Barnard is often cited as an early proponent of this view (Williamson, 2009). However, in Barnard's later published work, and in his private correspondence, a different perspective emerges. In fact, it seems clear that he viewed his earlier work as focusing too much on authority, and later he emphasised instead 'responsibility' and the 'spontaneous' nature of coordination within organisations.

This article reviews Barnard's original theory of authority, his later work and his private correspondence with Frederick Hayek, Michael Polanyi, Bertrand de Jouvenal, Herbert Simon and others. It shows that Barnard focused in his later thinking less on authority and more on responsibility. It also shows how he explored the spontaneous nature of coordination within the firm, argued for 'invisible hand' explanations of coordination within the firm, and compared coordination within the firm with market coordination.

The full insights of Chester Barnard into the inner workings of firms are still not completely understood or reflected in the literature on the firm. This paper is an attempt to uncover a more complete view of Barnard's work.

1. Chester Barnard

Barnard (1886–1961) was born in Malden, MA. He came from a modest background. He attended Harvard University, completing his exams but leaving without a degree, in 1906–9. In 1909 he joined

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AT&T as a statistician on \$11.50 a week. By 1927 he was President of the New Jersey Bell Telephone Company, a role he retained until 1948. From 1931 he undertook two periods as State Director of the New Jersey Relief Administration. In 1938 he published *The Functions of the Executive* based on a series of lectures he had given in Boston. In 1939 he visited the Soviet Union (letter to Hayek, 10 October 1955 in Barnard, 1955/1956).

During the Second World War, he was national president of the United Services Organizations, Inc. (USO); Barnard himself said of this role that it was '[o]ne of the toughest jobs I have had, and one from which I learned a great deal, especially with respect to responsibility without authority' (Wolf, 1973: 33). He did further work with the Navy and with US Treasury. He was awarded the Presidential Medal of Merit. After the war, he was one of the authors of the State Department report on the International Control of Atomic Energy.

He was president of the Rockefeller Foundation from 1948 to 1952. He also enjoyed a parallel career as a semi-public intellectual of organisational studies; for example, he wrote, in 1947, a foreword for the first edition of Simon's *Administrative Behaviour* (Simon, 1947/1997). He lectured and published articles and essays, and a collection of these, *Organization and Management*, was published by Harvard in 1948 (Barnard, 1948). Barnard wrote to Hayek (16 January 1956): 'I couldn't persuade the Harvard Press to publish the book, so I had it published at my own expense and risk and distributed it by the Harvard Press. To its amazement and my delight it quickly ran to a third printing' (Barnard, 1955/1956).

He corresponded with a number of liberal figures in the 1940s and 1950s including F. A. Hayek, Michael Polanyi and Bertrand de Jouvenal. He published an influential review of F. A. Hayek's *The Road to Serfdom* and Barbara Wootton's *Freedom under Planning* in the January 1946 issue of *The Southern Economic Journal* (republished in Barnard, 1948). In his papers is an invoice, from the Waverly Press, for reprinting 2,000 copies of this review in 1946 for \$105.54 (Carton 1, Folder 13).

He died in New York in 1961.

2. Barnard's ostensible legacy

In his Nobel-prizewinning speech, Oliver Williamson made the distinction between coordination within firms and coordination in the market and generally expressed the current conventional view:

Adaptations. Both the organization theorist Chester Barnard and the economist Friedrich Hayek took adaptation to be the main purpose of economic organization, but with differences. Finding little in the social sciences that informed the study of internal organization (hierarchy) as he had experienced it, Barnard undertook to craft the relevant concepts himself in his path breaking book, *The Functions of the Executive* (1938), where he focused on *coordinated adaptation* as accomplished in a 'conscious, deliberate, purposeful' way through the use of administration (Barnard, 1938, chap.1). Hayek, by contrast, celebrated the 'marvel of the market' (Hayek, 1945: 527) where *autonomous adaptations* are implemented spontaneously in response to changes in relative prices.

The challenge for the economics of governance was to recognize that adaptations of both kinds are important and to make selective provision for each. Rather, therefore, than be trapped in the old ideological divide between markets *or* hierarchies, transaction cost economics treats the two as alternative modes of governance, markets *and* hierarchies, both of which have distinctive roles to play in a well-working economy. The heretofore maligned mode of hierarchy is now awarded co-equal status with the marvel of the market, the object being to deploy each appropriately. (Williamson, 2009)

This statement of Williamson is very clear – however, as we will see, that sharp distinction between unintended order in the market *versus* deliberate, conscious, planned coordination in organisations was not one that Barnard ultimately subscribed to.

3. Barnard's theory of hierarchy¹ and 'authority' in *The Functions of the Executive*

Barnard was always, as Mahoney and Godfrey (2014) pointed out, 'a practitioner of management interested in theory', therefore we would expect that his book, *The Functions of the Executive* (Barnard, 1938), would seek for realism (p. 292), perhaps at the expense of clarity. For example, Barnard does not seem, at that stage, to have fully worked out a theory of authority within the firm as being different to coercive authority with the laws of the state or within an army; instead he just noted that both are often disobeyed and both require consent to some degree or other (Barnard, 1938: 162, 164), despite his observation that an employee can ultimately reject all authority by merely quitting but that option is closed out for a soldier or a citizen of a coercive state (pp. 182, 184, 269).

As we would expect in his striving for realism, for all the emphasis in *The Functions of the Executive* on authority, Barnard was never of the view that people just do what they are told to do; from the outset he emphasised 'willingness to cooperate' (Barnard, 1938: 83, 161). He emphasised the voluntary nature of authority – 'the decision as to whether an order has authority or not lies with the person to whom it is addressed' (p. 163); there must be 'assent' (p. 165). Barnard noted that this could lead to severe limits to authority; in fact he opened his discussion of authority by noting:

Now a most significant fact of general observation relative to authority is the extent to which it is ineffective in specific instances. It is so ineffective that the violation of authority is accepted as a matter of course and its implications are not considered ... It is surprising how much that in theory is authoritative, in the best of organisations lacks authority – or, in plain language, how generally orders are disobeyed. (pp. 161, 162)

However, this realistic analysis left Barnard with a problem – activity within organisations is coordinated and there is, despite the many failures of authority, general confidence that people will perform coordinated tasks. Barnard explained this using what at the time were extremely novel ideas, first, the 'informal' organisation, which secures assent outside of formal authority and, second, the 'zone of indifference' within which authority will be unquestioned (p. 167).

Barnard also noted that authority is subject to a higher set of rules (what we might now call corporate culture):

I suppose all experienced executives know that when it is necessary to issue orders that will appear to the recipients to be contrary to the main purpose [of the organisation], especially as exemplified in prior habitual practice, it is usually necessary and always advisable, if practicable, to explain or demonstrate why the appearance of conflict is an illusion. Otherwise the orders are likely not to be executed, or to be executed inadequately. (pp. 166; see also p. 279)

At this stage (1938), Barnard was unable to construct a fully coherent theory of authority. He was able to explain why authority could function and to explain why it often failed. He was also able to explain why that failure was not fatal to coordination. However, he could not explain, although he could give examples of their importance (p. 269), how positive motivators like commitment and responsibility, described towards the end of his book, played a part in his negative concept of 'the zone of indifference'. In fact one of the features of his chapter on responsibility is that he seems to see it as an executive issue and less a matter for (what he would have called at the time) rank and file employees. This is a point that Barnard returned to in his later thinking, as we will see.

Given his realistic if subtle, complex and incomplete definition of authority, it is no surprise that Barnard's ideas on authority were somewhat simplified in later scholarly activity.

¹Barnard does not seem to use the word 'hierarchy' but instead refers to 'lines of authority' (Barnard, 1938: 175 ff).

4. 'The great weakness of my book'

After *The Functions of the Executive*, Barnard published a number of articles and one book collection of papers (*Organization and Management*) in 1948. A short book transcribing interviews in 1961 between Barnard and William B Wolf was published in 1973 (Wolf, 1973). Barnard's correspondence is archived in the Baker Library at the Harvard Business School (Barnard Papers); we also extracted the correspondence between Barnard and F. A. Hayek from the Hayek Archive in Stanford. Barnard's papers and correspondence are not all publicly available at this time; there is a box in the Baker Collection closed until 2025. His copies of his correspondence with Hayek may be in that box.

The first point that Barnard emphasised in his later work, discussions and correspondence was an error that he felt had crept into organisational studies. As he said to Wolf:

In my opinion, the great weakness of my book is that it doesn't deal adequately with the question of responsibility and its delegation. The emphasis is too much on authority, which is the subordinate subject. Now, all the teaching in business circles, and most of it in the military and academic circles, is wrong from my standpoint. The emphasis is put on authority which, to me now, is a secondary, derivative setup. (Wolf, 1973: 15)

Later in the same conversation he said: 'If I were active and had the mood to do it, what I would do next would be to deal with the subject of responsibility: what we mean by it and who's involved in it, the importance of delegation, why the delegation has to precede any question of authority' (Wolf, 1973: 23). He explained what he meant by his use of the word 'responsibility':

[M]y experience at USO *really* developed my present concepts! It's a case where the full organization really operated on a moral basis ... You can dissemble, you can give me the runaround; but if you don't accept it, it just doesn't work. Now if you stop to think of it, almost everything that's done does not depend so much on the formal requirements, as it does in real estate transactions, for instance, and does not in stock exchange transactions which are largely conducted on the telephone by voice. If you take into account that factor, you find nearly everything depends upon the moral commitment. I'm perfectly confident that, with occasional lapses, if I make a date with you, whom I have never met, you'll keep it and you'll feel confident that I'll keep it; and there's absolutely nothing binding that makes us do it. And yet the world runs on that – you couldn't run a college, you couldn't run a business, you couldn't run a church, couldn't do anything except on the basis of the moral commitments that are involved in what we call responsibility. You can't operate a large organization unless you can delegate responsibility, not authority but responsibility. Authority comes second. (Wolf, 1973: 35)

This may appear to be overly self-critical from Barnard, as, as we have seen above, he *had* discussed the limits of authority and the importance of responsibility in his 1938 book quite explicitly but obviously he thought the emphasis on authority was, even still, overdone.

But this focus on responsibility/authority was just one aspect of a number of themes that Barnard was considering, or reconsidering, in relation to organisations. This is clearly brought out in a letter to the French philosopher Bertrand de Jouvenel that Barnard sent on 22 May 1956:

I will mention briefly, for your possible interest, the subjects which at the moment intrigue me.

1. **Responsibility.** I have come to believe that the subject of Responsibility is antecedent to that of Authority and, indeed, Power. One frequently hears in this country, both in public and in military circles, that Responsibility and Authority are correlative and must be proportionate. This seems to me to be an almost completely false statement. Authority arises essentially out of the acceptance of responsibility, and in very large areas responsibility is much greater than

any authority that can be conferred ...

2. **Autonomous Aggregates of Behaviour.** For many years, probably over twenty, I have been very much impressed with the fact that most everything that happens in economics, politics and social life is autonomously determined. To most people this is a striking statement to come from one like myself who spent most of his life in the most planned, single, comprehensive enterprise, the Bell Telephone System, but it was at first out of this experience that I reached my tentative views. Logically, they were most thoroughly riveted by [Michael] Polanyi's work, especially in the 'Logic of Liberty.' What troubled me until recently was how to harmonize this view with the obvious one that there is a great deal of effective intelligence and deliberate behaviour in all sorts of activities, especially notable in engineering, and my conclusion has been that intelligence of a formal and deliberate kind can only be applied at the margin ... The autonomous character of behaviour is expressed with respect to economic matters in Adam Smith's 'Invisible Hand.' Much scorned by many writers, perhaps because too many were led to suppose that the "Invisible Hand" was necessarily constructive or progressive or adequately adaptive, which I think is not the case, but I have been surprised at how few people have recognized the autonomous character of all aggregate behaviour. This, I think, needs very thorough treatment.
3. **Decisions.** Until recently all the logics that have come to us from Aristotle down were concerned with the validity of statements of facts or propositions or inferences, i.e., concerning knowledge. Almost nothing has been written including the work of psychologists on the logic of decisions, if Logic is the proper word to apply to it ...

It is clear from this letter and from other letters to Michael Polanyi himself and Hayek (see below) that there was something in Polanyi's work that really appealed to Barnard. In 1949, Polanyi had sent Barnard his article *Planning and Spontaneous Order* (Barnard to Polanyi, 16 May 1949) and they corresponded (as we will see) regularly after this.

5. Barnard's correspondence with Michael Polanyi, Hayek and others

Barnard wrote to Michael Polanyi on 6 March 1952:

Thank you very much for sending me, with your inscription, *The Logic of Liberty*. I am very happy to have this personal copy with your autograph. I read this book a few months ago with great interest and appreciation. In fact, I have read it three times.

Your development of the need for spontaneous organisation as the only available means of accomplishing some kinds of orderly behaviour and your treatments of the limitations of formal or directed organization are, I think, important contributions to the general theory of organization.

While many readers will be familiar with Polanyi's later work on tacit knowledge (Polanyi, 1958/1962: 49; Polanyi, 1966), they may be less familiar with *The Logic of Liberty*, which, on the face of it, does not seem to have much to do with organisational theory. However, one purpose of Polanyi's work was to undermine the faith that modern individuals have in authoritarian organisations and to show how limited these organisations are.

So Polanyi opens his essay 'The Span of Central Direction' by saying: 'This essay may be labouring the obvious. But obvious though my results may seem, I can find it stated nowhere, while a great deal has been written which contradicts it by implication' (Polanyi, 1951: 136). In that essay Polanyi explored the limits of hierarchy and authority, writing: 'Since the chief can give orders directly to

no more than three to five subordinates,² any larger body must be coordinated through devolution to successive tiers of subordinate ... The actions carried out at the base of the pyramid may therefore be said to be *centrally directed* or *centrally planned*' (pp. 138, 139, original emphasis). He concluded that large organisations of this type are capable of only standardised functions and are necessarily 'clumsy'.

He then contrasted this type of coordination with a 'spontaneous order', where each member of the order coordinates themselves (how this occurs we will return to below) and an adjustment made by each member has an effect on every other member. He gives the example of the captain of a small boat with five crew members – a span of control of five – and shows how the captain would be at the limit of his or her span of control. He contrasts this with a public market where 'millions of consumers draw on the same supplies. Each consumer adjusts his purchases to the ruling price, which he affects in his turn by his purchases.' He concludes:

An authority charged with replacing by deliberate direction the functions of a large self-adjusting system, would be placed in the position of a man charged with controlling single-handed a machine requiring for its operation the simultaneous working of thousands of levers. Its legal powers would avail it nothing. By insisting on them, it could only paralyse a system which it failed to govern. (pp. 145, 146)

However, Polanyi did allow for a hybrid system:

The establishment of a corporate body does not exclude all mutual adjustment between its members ... Such mutual adjustment, however, must never go beyond a certain limit. It should condition the actions of subordinates but must never determine them ... If persons operating at the base of a pyramid of authority (or any other level of it) were to allow their actions to be primarily determined by direct mutual contacts, the authority above them would be nullified. In this sense, it is true that the two kinds of order are mutually exclusive. (pp. 141, 142)

We can see how this general argument of Polanyi's would have appealed to Barnard. This was a problem he was already grappling with. Barnard wrote to Professor Loofbourow of MIT on 4 September 1947 (Carton 2, Folder 22):

[O]n my recent reading of '*War and Peace*', that in situations where the number of variables is more than a few – there are many that are known and not quantifiable and there are usually at least some that have not been discriminated – it is impossible for anyone in command either to plan effectively or to enunciate orders that can and will be carried out. This doctrine of Tolstoy has long been my own before I had read him.³

²Chester Barnard wrote in *The Functions of the Executive*: 'For example, as Director of the Emergency Relief organization in New Jersey I was in effect required by law to have not less than twenty-one immediate subordinates. Actually, I required twenty-five or twenty-six. Five would have been the maximum for this work and perhaps three would have been more effective and more efficient' (Barnard, 1938: 289).

³One anonymous reviewer of this paper gave an excellent example in their comments: 'What is reported in the paper led my mind back to an incident that I witnessed as a high school student in 1972 during a trip to the (now-closed) British Steel plant at Ebbw Vale in South Wales. As we were walking past the rolling mill, the tongue of the sheet of steel that was racing down the conveyor to be coiled up got jammed in the coiling device and concertinaed to a halt (from about 30 mph). Within seconds, workers appeared on the scene to deal with this, but even so, later in the canteen, the guide for our party said that the hold-up would probably have cost a six figure sum to keep the in-process steel roll-able or molten further back along the production sequence. Five years later, when reading *Markets and Hierarchies* for the first time, I saw Williamson discussing vertical integration in steel making in relation both to the problem of opportunism and the perishability of hot steel. But somehow he didn't seem to capture what I had seen that day, where workers suddenly appeared and spontaneously coordinated their action to get things moving again as soon as possible. They acted as if they had a sense of responsibility and knew what they'd be expected to do in that kind of situation – they certainly did not, despite the ethos in strike-prone 1970s Britain, try to make the most of the hold up in a self-serving way ...' It is possible that this type of jamming was routine and the roles

This was a point that he emphasised to the management writer Mary Niles in a letter of 13 August 1956 (Carton 2, Folder 39) after he had read her work *The Essence of Management*:

I note one omission that surprises me. I did not find any quotation from Michael Polanyi nor is his name listed in the index, nor his writings in the bibliography. I think that his book ‘The Logic of Liberty’ is one of the most important contributions to the theory of organization and management that I know, particularly relating to the limitations of the span of control and the necessity for autonomous behaviour in most organizations. If you don’t know the book I can certainly recommend it most highly.

This seemed to be true of the organisation that he worked for, in a letter of 6 January 1956 that Barnard wrote to Hayek:

Based upon my experience and observation I had arrived at conclusions consistent with yours before I had read any of your work or had heard of Michael Polanyi whose analysis of the situation, I think, is correct and very valuable, but it is not sufficient. It seems to me that one has to be able to explain the illusion of successful planning ... In this city [New York] and its environment, in which there are millions of telephones, it is possible with almost complete certainty to make anyone of millions of possible connections merely by dialling correctly. The extreme degree of coordination of electrical and mechanical details to make this possible is almost incredible and an enormous amount of engineering work has gone into it and there is a blue print for nearly every inch of the property concerned. It certainly looks as if the system as a whole has been meticulously planned to be what it is [by the New York Telephone Company]. Yet, this is absolutely false, as a whole it never was and never could have been planned. (Barnard, 1955/1956)

On 6 March 1957, Barnard wrote to Hayek: ‘Polanyi’s arguments, especially in the last chapter of [The] Logic of Liberty in my opinion is [sic] are valid for any kind of social organisation.’ The last chapter in *The Logic of Liberty* (Polanyi, 1951) is ‘Manageability of Social Tasks’. In this essay, Polanyi develops the concept of ‘polycentric spontaneous order’ and wrote: ‘When order is achieved among human beings by allowing them to interact with each other on their own initiative – subject only to laws which uniformly apply to all of them – we have a system of spontaneous order in society’ (Polanyi, 1951: 195). The market order is his main example of such a polycentric spontaneous order. ‘Manageability of Social Tasks’ deals only peripherally with the limits of planning and central control; it concerns almost entirely the power of spontaneous orders and mutual adjustment to circumstances, and yet it is the essay that most interested Barnard.

While we saw above that Polanyi allowed for a hybrid system of rules and command within organisations, we can see that Barnard seems to reject that possibility. It is worth repeating what he wrote to de Jouvenel:

... most everything that happens in economics, politics and social life is autonomously determined. To most people this is a striking statement to come from one like myself who spent most of his life in the most planned, single, comprehensive enterprise. ... What troubled me until recently was how to harmonize this view with the obvious one that there is a great deal of effective intelligence and deliberate behaviour in all sorts of activities ... and my conclusion has been that intelligence of a formal and deliberate kind can only be applied at the margin ...

of everyone involved was foreseen. However, this would require an immense amount of contingent planning for every possible foreseeable hold-up on a complex production process. Is it possible that the firm instead relied on the ability of the skilled, experienced individuals in the plant to self-organise based on the exact event, foreseeable *or* unforeseeable, as it unfolded?

Polanyi would allow for spontaneous behaviour at the margins of organisations, but Barnard seems to have flipped this around and would allow merely for some element of deliberate activity at the ‘margin’ of the spontaneous order of an organisation. In other words, Barnard thought of organisations as some form of spontaneous order and decidedly *not*, as Williamson does and says Barnard does, as a place where coordinated adaptation is accomplished in a ‘conscious, deliberate, purposeful’ way. Barnard’s view is quite different to the standard Coasian model of intra-firm coordination (Coase, 1988: 35): an employee moves from department Y to department X ‘because he is ordered to do so’.

6. Discussion

We know much more about rules and spontaneous orders now than we did when Barnard was alive. Indeed, complex adaptive systems and their sub-concepts of lock-in, path-dependence, feedback, emergence and self-organising behaviour have since spawned extensive literatures in economic, social and natural sciences (Anderson, 1999; Arthur, 1989; Gleick, 1987; Lichtenstein and Plowman, 2009; McEvoy *et al.*, 2016). Barnard did not articulate how coordination occurred in a spontaneous order – what was the mechanism by which such an order comes about? Instead that problem was solved by Hayek, who, profoundly influenced by Polanyi’s work on spontaneous orders, adopted the term (Hayek, 1960: 160) and demonstrated that such orders are created by individuals following common rules (Hayek, 1973: 49). Hayek argued that a market order could exist because participants in that order followed common rules of behaviour; the market was a spontaneous order unintentionally created by individuals each using their own knowledge, however limited, following common rules, to further their own ends (Hayek, 1973: 41ff); the ‘invisible hand’ is actually rule following. But rule following has turned out to have more universal application than Hayek realised. We now know more clearly than in Hayek’s day that individuals make judgements and decisions not by elaborately generating and ranking options, or by merely blindly following the price mechanism or commands, but by following rules (Gigerenzer, 2007; Gigerenzer and Gaissmaier, 2011; Kahneman, 2011: 296; Klein, 2009); this is also true of decision making within firms (Artinger *et al.*, 2014; Bingham and Halebian, 2012; Eisenhardt and Sull, 2001).

At the level of the firm, Simon (1991) suggests that rules in the form of ‘premises that are to be used by employees in making the decisions for which they are responsible’ underpin organisational activity (pp.31–32).⁴ Simon allows employees discretion – similar to Barnard’s ‘zone of indifference’ – within which they act (Simon, 1951).⁵ An organisation is happy to employ a person under an incomplete contract as this allows it to defer the decision as to what activity the employee will engage in until some future time when uncertainty is reduced; employees are happy to be employed under an incomplete contract so long as they are sufficiently indifferent as to which particular activity within a set of activities they ultimately carry out. In Simon’s organisation, employees are motivated, take responsibility, use initiative, and demonstrate loyalty while cognisant of the rules (Simon, 1991). Such interaction with initiative within a set of rules is consistent with Polanyi’s concept of spontaneous order discussed earlier. Organisations, like states and unlike markets, provide a mechanism – authority – for establishing the rules; ongoing coordination among employees within the structure of an authoritative rule system provides the engine for organisational growth (Simon, 1991).

At societal or state level, institutional theorists accept that rules, formal and informal, provide the constraints that structure and guide human social and economic interaction and, if appropriate, foster economic growth (Eggertsson, 1996; Hodgson, 2002; North, 1990). Institutions are a response to uncertainty, act as a capital stock of other people’s reusable knowledge and make it easier to anticipate the behaviour of others (Loasby, 1999: 46). Formal rules may change in sudden fashion but, due to the slower pace of change of informal rules, societal evolution rarely turns out to be as radical as

⁴Note that Simon suggests that authority is exercised through commands, but that it is rarely used to specify particular actions. He uses command in the sense of rules, not instructions.

⁵Simon also refers to this as the ‘area of acceptance’ (Simon, 1951: 294).

anticipated. Institutional theory thus tends to talk more of stability (Greif and Kingston, 2011; Loasby, 1999: 101) and of gradual rather than punctuated change (North, 1990: 353; North, 1996). Nonetheless societal order emanates from within the constraints provided by the rules and from 'the interplay of individual intention rather than from any grand scheme' (Langlois, 1995). Order at the institutional level is spontaneous rather than planned.

Following Hayek (1973: 49), the modern institutional scholars see a difference between coordination within organisations and in the larger market order. For example, North sees organisations as 'groups of individuals bound by some common purpose to achieve objectives' (North, 1990: 5). He distinguishes such organisations from institutions that are 'the underlying rules of the game'. This, as we have seen, is a distinction that Barnard resisted; for Barnard the 'autonomous' element constrained by 'prior habitual practice' was the key to understanding behaviour in organisations, just as we now understand it is in institutions. Like Hayek, who 'had little interest in organizations' (Foss and Klein, 2013), institutional economists seek to understand institutions by contrasting them with how they think organisations are coordinated. For Hayek that was by contrasting coordination through pure rule following in the larger market order and arbitrary 'command' in organisations; for the modern institutional economists it is the purposive firm *versus* open-ended institutions.

Barnard, however, took issue with this managerial 'command'-based approach to organisation. In a letter of 11 May 1945 to Simon, Barnard wrote:

One of the difficulties of your treatment [in a draft of *Administrative Behaviour* that Barnard has just read], except as respects authority, is that the view is almost always from the top down. In so far as communication is mentioned, it is almost exclusively one way communication. Specialisation and decentralisation are very greatly affected by facilities for communication from the bottom up ... Where there exists, as is very often the case, no language adequate to convey reports, then decentralisation and delegation of authority is essential for this reason if for no other ... The apparently spectacular decisions such as those resulting in plans, comprehensive orders and statements of policy ... have diverted attention from the actual behaviour of deciding individuals whether in a scientific laboratory, a business office, or a government post. The great mass of decisions are private, rarely expressed, frequently cannot be made articulate ... (Barnard, 1962)

We can see that Barnard is already, in 1945, grasping the problem that was to be so clearly enunciated in Polanyi's writings on spontaneous orders and tacit knowledge. We can see why he was so enthusiastic about Polanyi's writings on organisations when it was published. Unfortunately, the management literature went in a different direction. Despite Barnard's encouragement, Mary Niles in the 1958 edition of her book did not refer to Polanyi (Niles, 1958). Simon, even at the end of his career, still saw the ideal employee trait as 'docility. To be docile is to be tractable, manageable and, above all, teachable' (Simon, 1991).⁶ The managerial view remained unequivocally from the top down (Brady and Walsh, 2008).

Hayek's opening focus on orders where unthinking objects, iron filings, etc., are the basis of spontaneous orders (Hayek, 1973: 40, 43) has led us to under-privilege the behavioural element. It is now clear that spontaneous orders are a common feature of herding and flocking behaviour in humans and other animals (Miller, 2007; Miller, 2010: 175; Quera *et al.*, 2010). However, what is only very recently becoming clearer is that leadership and hierarchy are also a feature of spontaneous orders *where they involve sentient animals*. However, leadership can have a role in spontaneous orders but only, as Barnard seems to have intuitively understood, 'at the margin'. The latest research shows that flocking and herding rules include taking cues from 'leaders' and decision-makers such as more experienced

⁶Note however that Simon allows some autonomy to employees later in the same paper when he states that 'Willingness of employees at all levels to assume responsibility for producing results – not simply "following the rules" – is generally believed to be a major determinant of organizational success' (Simon, 1991).

homing pigeons (Flack *et al.*, 2012). Recent work on flocking homing pigeons has resulted in the observation that:

stable, hierarchical pattern of in-flight leadership does not build upon the stable hierarchical social dominance structure evident in the same birds. Instead, in the case of pigeon flocks, the emergence of leadership and dominance hierarchies are each affected by different factors. By ignoring social dominance when in flight, flocks of pigeons potentially make better navigational decisions because leadership can emerge from relevant attributes, such as local experience and route fidelity. (Nagy *et al.*, 2013)

This is not ‘authority’ or blind obedience, but merely individuals keeping an eye, literally, on a bird in front or on more situationally experienced animals, and factoring what those birds are doing into each individual’s decision making; following one bird and then another. Leadership, in these spontaneous orders, is now seen as a complex interactive process within a self-organising group of animals, and never merely one animal with authority and the others obeying (Pettit *et al.*, 2015). It is still considered natural to think of a flock of birds following a leader. Plato said that individuals in a state followed their king like a flock of birds follows its leader (Popper, 1966: 50); we now know that in a flock of birds there can often be shifting leadership but not passive followership. This brings us to the issue of organisational common purpose, the custodianship of which, according to Barnard, is a primary function of the executive. Barnard emphasised consistency over purpose:

There is no escape from the judicial process in the exercise of executive functions. Conflicts in the codes in organisations are inevitable ... The judicial process, from the executive point of view, is one of morally justifying a change or definition or new particularizing of purpose so that the sense of conformation to moral codes is secured. (Barnard, 1938: 280)

Given that rules arise ‘from the inescapable limitations of individual human knowledge’ (Loasby, 1999: 43), and the more radical the change of direction the more abstract are the rules required to govern the change (Langlois, 1995), an interesting area for future research is to further examine the roles of rules, shifting leadership and active followership (Denis *et al.*, 2012) in the maintenance of and evolution of organisational purpose.

7. Conclusion

Barnard’s thoughts on intra-firm coordination, management and organisation did not cease with the publication of *The Functions of the Executive* in 1938. Instead, he continued his management activities and further considered his theoretical position. The fruits of those activities seem to have been an understanding of organisations and firms as containing significant autonomous or spontaneous elements and not as deliberately designed orders. This insight was a very early study into spontaneous orders, but a study that Barnard was already mentally prepared for from his management activities. This is a novel insight into the life-work of Chester Barnard.

Barnard discussed, in different forms, rule following within the firm in *The Functions of the Executive*, for example in his descriptions of ‘codes’ within the firm, the judicial function in management and the importance of consistency (1938: 280). But when he wrote to de Jouvenel on the subjects that intrigued him: spontaneous orders, decision making and responsibility, he may not have been aware how central rule following was to *all* these subjects: each individual committing to following common rules (responsibility), using rules to make decisions (decision making), and using those common rules to make coordinated decisions.

Our clearer understanding of spontaneous orders, 50 years later, shows that Barnard may have been grappling with more fundamental coordination mechanisms within the firm. When looked at through the three areas of commitment/responsibility, decision making and spontaneous orders, and the centrality of rule following to all of these, we can see that rule following within organisations may be a

neglected topic (Schlicht, 1998; Walsh, 2009, 2010) and perhaps there has been, as Barnard wrote publicly and privately, an over-emphasis on ‘authority’. If, in Langlois’ phrase, firms in order to plan for an unknowable future, should or even must ‘emulate in some degree a spontaneous order’ (Langlois, 1995), then, looking at other spontaneous orders, we may be able to obtain novel insights into coordination and leadership within organisations beyond merely seeing individuals fitting into a hierarchy and doing things because they are ‘ordered’ to do so.

Textual note and acknowledgement. There are two cartons and one box of Chester Barnard’s papers, including correspondence received and copy correspondence sent, in the Baker Library at the Harvard Business School (Chester I Barnard Papers, Baker Library, Harvard Business School, accessed on 6 September 2016); thanks to Melissa Murphy and the staff at the library for their assistance; Huma Utku also assisted. The papers were donated by Mrs Barnard in 1962. The box is sealed until 2025 (it is labelled ‘Personal Correspondence’). The correspondence is partial and seems to be more focused on the period after Barnard’s retirement from Bell Telephone in 1948. One example of its partial nature is that there does not seem to be any copies of letters to F. A. Hayek in the Barnard cartons in the Baker Library but these letters can be found in the Hayek papers in the Hoover Institute (there is a letter from Hayek in Carton 1, Folder 17, acknowledging receipt of review of Barbara Wootton’s book and giving background to its writing by Wootton).

- The correspondence with Michael Polanyi is in Carton 2, Folder 26.
- The correspondence with Bertrand de Jouvenal is in Carton 2, Folder 32.
- The correspondence with Professor Loofbourow is in Carton 2, Folder 22.
- The correspondence with Mary Niles is in Carton 2, Folder 40.
- The correspondence with Herbert Simon is in Carton 2, Folders 28 and 29.

The letters from Chester Barnard to Hayek are contained in the Hayek Papers in the Hoover Institution Archive. Obviously these papers are very extensive. The correspondence from Barnard to Hayek, extracted for us by Jenny Fichmann, with thanks to Carol Leadenham from the Hoover Institution, is found in Boxes 61 (Folder 26) and 72 (Folder 18) (the Hayek correspondence is filed by topic rather than by correspondent).

In relation to the Barnard copyright over the letters extracted, we wrote a number of times over three years to the Barnard estate through the Harvard University Press. Tarik J. Lucas most kindly assisted (including with drafts of this article). No reply was received one way or the other. Despite extensive research, direct access to the heirs of Barnard’s estate could not be found. We would be very happy to receive permission from the heirs.

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