

Chester Barnard on coordination within the firm as ‘conscious, deliberate, purposeful’? *‘[M]ost everything that happens in economics, politics and social life is autonomously determined’;*

Chester Barnard to Bertrand de Jouvenel 22 May 1956.

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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 FA Hayek, Michael Polanyi, Bertrand de Jouvenel and others. We show that Barnard focused, in his later thoughts, 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 insight to argue for a greater focus on rule-following as a primary coordination mechanism within the firm.

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‘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, p. ix).

Chester Barnard is often cited for being the source for a particular mode of coordination in organisations, authority; different to the modes of coordination in the larger market order. The purpose of this short article is to demonstrate that 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 instead he later emphasised, ‘responsibility’ and the ‘spontaneous’ nature of coordination within organisations.

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 C. , 1938), would struggle for realism (p. 292), perhaps at the expense of clarity. For

¹ Barnard does not seem to use the word ‘hierarchy’ but instead refers to ‘lines of authority’ (Barnard C. , 1938, p. 175 ff).

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 C. , 1938, pp. 162, 164) this is despite the fact that he noted 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 C. , 1938, pp. 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 if 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 organizations 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 by, what at the time were extremely novel ideas, firstly, the ‘informal’ organisation which secures assent outside of formal authority and, secondly, 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), of 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 not a surprise that Barnard's ideas on authority were somewhat simplified in later scholarly activity. We will now proceed to just one example of this simplification.

Barnard as authority for a clear firm v market distinction.

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, p. 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 clear distinction between unintended order in the market versus deliberate , conscious, planned coordination in organisations was not one that Barnard subscribed to.

‘The great weakness of my book’

After² *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 in Harvard University (Barnard Collection); we also extracted the correspondence between Barnard and FA Hayek from the Hayek Archive in Stanford (Barnard C. I., 1956).

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'

² Barnard (1886 – 1961) published *The Functions of the Executive* in 1938. At that stage in his career he was already president of the New Jersey Bell Telephone Company (from 1927 to 1948) and had undertaken two periods as State Director of the New Jersey Relief Administration. In 1939 he visited the Soviet Union (letter to Hayek 10 October 1955). During the Second World War, he was national president of the United Services Organizations, Inc. (USO); Barnard himself said of this role – 'One 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, p. 33). He did further work with the Navy and with US Treasury. He was awarded the Presidential Medal of Merit. 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 Simon's *Administrative Behaviour* (Simon, 1947/1997). He lectured and published articles and essays and a collection of these was published by Harvard in 1948, *Organization and Management* (Barnard C. I., 1952). 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'.

(Wolf, 1973, p. 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, p. 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, p. 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 organizations. 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....' (Barnard C. I., 1956)

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.

Michael Polanyi's *The Logic of Liberty*.

Barnard wrote to Michael Polanyi on March 6 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, p. 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, p. 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 subordinates³, 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). He concluded that large organisations of this type are only capable of standardized 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

³ Chester 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 C. , 1938, p. 289)

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:

'[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.'

This remained Barnard's view, in a letter of 6 January 1956 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 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 C. I., 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 the ‘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, p. 195). The market order being his main example of such a polycentric spontaneous order. This essay deals only peripherally with the limits of planning and central control, it almost entirely deals with the power of spontaneous orders and mutual adjustment to circumstances, 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...’

Polanyi would allow for spontaneous behaviour at the margins of organisations, but Barnard seems to have flipped this around and would merely allow 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, p. 35) an employee moves from department Y to department X ‘because he is ordered to do so’.

Discussion:

We know a lot more about spontaneous orders now than we did when Barnard was alive. Polanyi or 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, p. 160) and demonstrated that such orders are created by individuals following common rules (Hayek, 1973, p. 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 F. A., 1973, p. 41ff); the ‘invisible hand’ is actually rule-following.

Much recent work on spontaneous orders has been on spontaneous orders in animals, where the rules animals follow to create spontaneous orders like flocks of birds, shoals of fish etc have been explored and articulated (Miller, 2010, p. 175; Quera, Beltran, & Dolado, 2010); ‘even with half a million ants, a colony functions just fine with no management at all ... It relies instead upon countless interactions between individual ants, each of which is following simple rules of thumb’ (Miller P. , 2007). It is still considered natural to think of a flock of birds following a leader, this was the error that Plato intuitively made saying that individuals in a state followed their king like a flock of birds follows its leader (Popper, 1966, p. 50), but this is a mistake, a flock is created by each bird following rules. Order can emerge naturally from independent agents following common rules, with no leaders or

external factors; the classic example being Reynolds's flocking 'boids' (Reynolds, 1987; Miller, 2010, p. 174).

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 homing pigeons (Flack, Pettit, Freeman, Guilford, & Biro, 2012). Recent work on flocking homing pigeons has resulted in the observation that: 'we found 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, Vásárhelyi, Pettit, Roberts-Mariani, Vicsek, & Biro, 2013). This is not 'authority' or blind obedience, but merely individuals keeping an eye, literally, on a bird in front or 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, Akos, Vicsek, & Biro, 2015); specifically, in solo flight a bird will follow a particular route, but in a flock the leaders' route choices are influenced by the flock and vice versa – some birds just have more influence at particular points than others. Usually, the flock's route is more accurate than even the best solo bird, an impossible feat if some birds were merely blindly following others.

But rule-following has turned out to have more universal application. We now know more clearly than in Hayek's day, 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 (Kahneman, 2011, p. 296; Gigerenzer, 2007; Gigerenzer & Gaissmaier, 2011; Klein, 2009); this

is also true of decision-making within firms (Bingham & Halebian, 2012; Artinger, Petersen, Gigerenzer, & Weibler, 2014; Eisenhardt & Sull, 2001).

Barnard had 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, p. 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 decision.

Conclusion:

Chester 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 considered further his theoretical position. The fruits of those activities seem to have been an understanding of organisations and firms as some form of spontaneous order and not 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.

However, our clearer understanding of spontaneous orders, fifty 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; Walsh, 2010) and perhaps there has been, as Barnard wrote publicly and privately, an over-emphasis on ‘authority’. If, in Langlois’s phrase, firms ‘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.

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