

A Theory of Order and Chaos in Organizational Knowledge Creation: Implications for Public Management, with a focus on Scholarly Publishing

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Abstract: Like their private counterparts, public organizations tend to adopt a view of knowledge management which proceeds from an unflinching belief in our capacity to impose order. Standard approaches to knowledge management rely on this belief, but at least the more subtle approaches have implicitly recognized the presence of a chaotic dimension. These approaches reserve a place for chaos within a sequence of knowledge creation but do not recognize it throughout the process. Ikujiro Nonaka's classic contribution goes further than most in conceptualizing this hidden dimension but his ontology, or rather the preference he accords ontology over epistemology, ultimately holds him to an ordered view of chaos. Reversing Nonaka's sequence of ontology and epistemology in organizational knowledge creation provides a counterpoint to the standard model more directly engaged with this chaotic dimension. It also reveals a form of power at work in knowledge creation. Using scholarship as a case of knowledge creation and scholarly publishers as organizations dedicated to enacting the processes necessary to validate scholarliness, I contend that the study of knowledge creation practices in public organizations might profit from an understanding which privileges a form of order/chaos binary typology, that is, a typology which simultaneously draws from both. This approach is particularly apt at illustrating how scholarliness must submit to a managed public notion of science. For scholarly publishing, this power manifests itself in at least two observable transformations: industrial concentration and editorial standardization.

Introduction: The Hidden Realm

For perhaps as long as it has existed the discipline of public management has contended with a body of evidence pointing to the existence of a hidden realm of organizational activity. Herbert Simon's writings on bounded rationality established that an idealized view of reason in public organizations was a fantasy. At about the same time Philip Selznick developed ways of thinking about organizations which attempted to go beyond the functionalism embedded in organizational charts. More recently, Frederickson et al. (2012, see chap. 7 and 8) speak of research being conducted on irrationality. This hidden dimension nourishes research in public management, for is it not inconsistencies between organizational charts and

observed reality we hunger for? It seems correct to state that much of the discipline of public management is composed of varying investigations of this hidden realm of organisational activity. Perhaps complexity theory has the best claim at having explored it through its reliance on an approach which eliminates the unidirectional causality so necessary to rigid functionalist approaches. Complexity theory might merit the monopoly of the use of the term chaos in designating this dimension, but many approaches have offered compelling discussions of the fog on organizational life they are all so eager to dispel. The case against a harmonious application of logic and function in public management has grown very heavy in the last seventy years.

Of the many issues which this unknown dimension affects, that of knowledge creation offers appetizing food for thought. Like so many other areas of concern, knowledge creation experienced a generalized awakening to the existence of this chaotic realm in the late 20th century. Ikujiro Nonaka's (1994) now classic model heavily emphasized the *dynamic* nature of knowledge creation. His vision was far-reaching as he did not hesitate to reference the writings of philosophers such as Edmund Husserl, Maurice Merleau-Ponty and of course Michael Polanyi (from whom he drew the important distinction between tacit and explicit knowledge). Nonaka's model is practice oriented and though it delves greatly into theory, it has a clear instrumental focus. He places the individual as the primary source of knowledge production and structures his reflection around the possibility of eliciting expected behaviour. The validity of his approach is not here in question. But I do contend that it may not capture the entire picture. Nonaka bounds knowledge creation within the limits of understanding and stops far short of allowing for chaos to be thought of as proceeding from beyond the individual's capacity to understand.

In doing so, he misses the possibility of realizing that there might be other, hidden forces weighing on knowledge creation.

As something of a thought experiment which carries the hope of better detecting these hidden weights, I propose to examine if we can understand how chaos appears in public organizations by ignoring the direct causality which underpins most standard approaches to knowledge creation and reversing the ontological individualism at the core of Nonaka's approach. Such a reversal would privilege epistemology over ontology and eclipse the presumption of superiority of linear causal logic in theoretical work. It would allow us to think of chaos as a perpetual element in knowledge creation. Though Nonaka has something of an implicit recognition of the necessity of chaos, his discussion of it fails to acknowledge what might be the inherent chaos of the multiple points of view on reality that any organization gathers. I here attempt to make a final push on the wall which hides this elusive dimension to then present the idea that knowledge creation practices (by which I mean the mix of production and management, internal and external activities, which produce what can be called organizational knowledge) respond to both tidal forces, one emanating from the individual's capacity to impose order, and the other from the chaos which proceeds from the fact that reality is simultaneously observed and not singular but plural.

Complexity theory might hold the monopoly on the term chaos, but in keeping with my aim to go further in the exploration of chaos, my use is distinct. If I share the willingness to abandon linear causality, I also accept that the initial conditions are far beyond human comprehension. My use of the term chaos is inspired by a very loose reading of a controversial idea, though one which found a sustained resonance. I speak here of the esthetics of Friedrich Nietzsche as they were

expounded in *The Birth of Tragedy*. His introduction here is justified by nothing else than my incapacity to escape the idea that it might help us structure our thinking about knowledge creation in public organizations. It rests upon the premise that there is a parallel in the study of organizations best understood as a distinction which gathers, on one side, the power of visions of rectitude and order, and on the other, the primal, disorderly, ever-shifting landscape of raw multiplicity. I can only reiterate that this idea is at the root of much of the critical thinking in the social sciences in the late 20th century.

No sooner inaugurated does this distinction reveal a dimension of power in knowledge creation. Organizations bask in a mix of established directives on the one hand and perpetually evolving ideas on the other. The effect can be thought of as a binary typology, where there exists in studied elements an inversely proportional mix of both. The clash of the two, or rather the recognition of the chaotic, reveals the authoritative character of order. Organizational activity becomes a competition between the power to impose and the capacity to undermine, between the desire to structure knowledge hierarchies and the will to undo them, between the authoritarian and the disinterested, and between seriousness and irony. Nietzsche invites us to recognise no preconditions, no conventions but to see all order in organizations as the product of fallible human thinking perpetually seeking to close itself off in a comfort zone.

I first argue that there exists a great potential for confusion of the notion of knowledge in organizations. It is fraught with conceptual peril and requires careful clarification, principally between internal and external and between production and management. I then proceed to clarify how order and chaos could be thought of non-sequentially in a process of knowledge creation. To clarify the discussion, I present

a three dimensional diagram which in addition to the production/ management distinction (on the x axis), and the internal/ external (on the y axis), separates order from chaos (on the z axis). Finally, I examine the case of scholarly publishing as potentially revealing the finer points of this approach to knowledge creation in the public sector. As an activity which subscribes to a publicly defined sense of scholarliness by replicating activities capable of meeting these environmental expectations, scholarly publishing can reveal some of the intricacies of organizational knowledge creation. An application of the order/ chaos distinction can help explain the industrial concentration we can today observe and the much less but occasionally observable problem of product standardization. I conclude with a return on the ethical question of the appropriate mix of both.

An unresolved concept

To examine knowledge in organizations is not a new idea. Starting with the notion of the ‘post-industrial society’ of the 1970’s and continuing with the ‘knowledge economy’ of the 1990’s, this old interest has collected, according to Powell and Snellman (2004), three areas of reflection. The first considers knowledge oriented industries and their effect on wider economic and social changes. The second is concerned with the idea that knowledge intensiveness varies across sectors. The third, more managerial in nature, is concerned with the idea that some organizations have developed knowledge management practices which merit observation and might be replicable. This last area is most clearly associated with knowledge management. Knowledge is here thought of as an unseen object. It is from this perspective that Jennex (2006), as well as North and Kumta (2014), frame knowledge management as the body of knowledge which seeks to provide a road to organizational success, however it may be defined. Though it possesses a more

theoretical subtlety than most, Nonaka's approach invariably ranks among these more instrumental approaches who together can be said to form what I term the standard model.

The standard model operates with the assumption that the practices which shape knowledge production can be manipulated. In privileging ontology over epistemology and allowing only direct causality it invariably conforms to a rational/public choice approach. Knowledge management approaches are here conceptualized so as to alter the transaction cost of information sharing and elicit greater openness. The measures prescribed are thought to affect employee's decision to come forward with new ideas. The standard model's approach is compelling but a wider picture can be gathered by flipping the two key components of linear causality and ontological supremacy. It is true that individuals create knowledge, but it is also true that knowledge creates individuals (or as du Gay (2007) would say 'persons'). This fundamental reciprocity remains hidden while we insist on retaining a rigidly managerial perspective on knowledge creation.

The first area of concern identified by Powell & Snellman also compels us to sharpen our outlook. The distinction between scientific organizations and others establishes the banal fact that the output of most organizations is not scientific in nature. Yet many of these would still be considered to produce organizational knowledge for internal purposes. And though it might not conform to a scientific definition of knowledge, the activities of many organizations, especially public organization, do establish understandings and beliefs which could be said to constitute external knowledge. Public health care establishes the belief that in Canada it is unacceptable that one should suffer destitution as a result of illness. This knowledge is key to everyday planning of Canadians in countless ways. The

distinction between knowledge internal and external to the organization remains a useful one as it establishes the borders of the organization, which can be useful in identifying areas of activity. And though it is tempting to see them as dissociated, the need for conceptual clarification does not necessarily suggest that they are. It becomes rather interesting to think that knowledge created for external consumption is the *organized* output of accumulated internal knowledge.

This distinction is as readily admitted by the standard model as that between production and management. The two key criticisms of the standard model need not oblige us to abandon them. The distinction between knowledge production (the product of organizational activity) and knowledge management (the practice of enacting measures to control this production) indeed lies at the core of the standard model of knowledge creation. The standard model is a management model, and though it is primarily concerned with the management of knowledge, it inevitably acknowledges that it is a distinct sphere of organizational activity. The distinction remains a useful one principally as it allows the identification of separate (but again not dissociated) groups of individuals. As with the distinction between internal and external, it serves to clarify how we might recognize different activities without thinking of them in isolation. Indeed the distinction between production and management is not always clear.

Order and Chaos

The first two dimensions can easily be accommodated by the standard model. This is not true of the third dimension. The distinction between order and chaos reveals not only the limited space the standard model of knowledge creation accords chaos, but more importantly that it possesses something of an inevitable arbitrariness. As mentioned above, it is not my intention to refute the legitimacy of

the standard model but to place it within a wider theoretical framework. This requires an approach which understands both order and chaos as intermingling at different proportions, much like particularly mixes of two colours produce different shades. As a result, it reveals itself as an articulation of power which is neither completely objective nor immune to administrative fads.

I confess my first instinct was formal in nature and attempted to draw a parallel between order and chaos on one side, and the central agency/line department distinction on the other. Though I soon concluded that central agencies may reflect a greater tendency to order, a direct parallel between them would result in little more than finding ourselves saddles with blinders. I soon realized that I was confusing chaos and order with the production and management distinction. Chaos and order as I aim to theorize them are not found in formal structures. Line departments are equally capable of exercising order. But if the association between order and central agencies seemed intuitive it was because there is a dimension of power which plays at the heart of the dichotomy. Order is what allows for the exercise of authority. It manifests itself as attempts to limit discretion by limiting the range of possible interpretation of directives. Tight directives, limited variability in meaning, and conformity to central edicts are all manifestations of order in organizations. These efforts increase communicability, especially in bureaucratic contexts. Most important of all, order is unitary in nature and purports to speak with one voice.

I then turned to what could be termed a sequential approach to chaos and order in knowledge management, one to which Nonaka ultimately belongs. His dynamic model is in a sense an effort to provide an orderly approach to chaos in knowledge creation. He places chaos at the root, within the tacit, and follows an

inclination to see chaos and order in sequence¹. It would follow that the process of knowledge creation consists of chaos producing knowledge and order organizing it. This linear process can also be understood in a cyclical way (not unlike the classical policy cycle), where a return to chaos would signify that the orderly result is understood to stand only for a time and eventually return to a chaotic mixing board. But this eclipses chaos, accords it only a temporary purpose, whereas a full exploration of chaos in organizations requires that we assume it to be found everywhere. Many applications of the standard model may have an intuition for the role for chaos but subsume it in a model which at one point excludes it. My sequential approach was confusing Nonaka's/Polanyi's tacit and explicit with chaos and order.

Exploring the chaotic, while it could provide key theoretical insights built upon the idea of multiple and concurrent realities, demands certain intellectual sacrifices. The reversal of ontology and epistemology reveals the inevitable arbitrariness of all established approaches to organizational knowledge creation. Perhaps a bit contrary to Nietzsche, I do not ascribe any kind of moral failure to order, but neither do I find it possible to accept any inherent superiority. In other words, I don't judge the arbitrariness of it but neither do I deny it. What I do find is that there is a multiplicity of views of any program, rendering incredulous the assumption that it is applied as intended. To base our study uniquely from the perspective that bureaucratic action proceeds from a unique point, which then cajoles all other actors under its directive might be limiting our view. It is the

¹ Nonaka is certainly not alone here, as much of public policy of scientific research literature and the history of science is built upon the expressed need to protect a chaotic space within which discoveries are made.

ultimate manifestation of order's inherent instrumentalism that it assume that directives can be clear to the point of eliminating misunderstandings.

Chaos is not a form of resistance to the power of order but rather is largely disinterested with power. While order is characterized by efforts to control the many views which can appear in response to any new directive, chaos is the phenomenon by which the meaning of directives is repeatedly tugged at with each new application. Such an approach denies that misunderstandings in bureaucratic life can be eliminated or even properly understood. Chaos cannot be masked by rational thought and attempts to do so always appear as impositions.

Knowledge Creation Practices

I present the preceding discussion in a simple three-dimension figure.

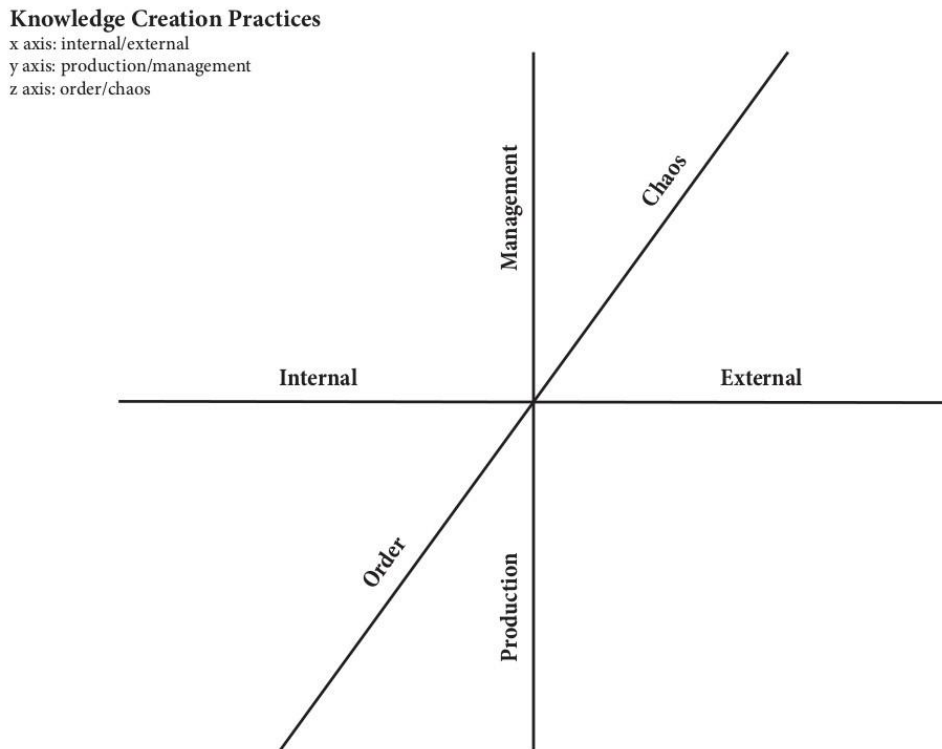


Figure 1

Scholarship, Publishing and Knowledge Management

I close with an attempt to apply this approach to my own research on scholarly publishing. Scholarly publishing is a notion which is collectively upheld by university presses, private academic publishing groups, government, and other relevant public councils. Scholarly publishers are those organizations wedged between the production of knowledge in pure form and the publicly maintained standards of scholarship. What we think of as scholarship appears to be collectively regulated these kinds of organizations who maintain the rigour of scientific inquiry through the application of a series of knowledge creation practices. The need to publicly support scholarship has been in Canada recognized since the 1960's. Important programs and funding from Industry Canada and Heritage, and the many other public councils, such as the CC for the Arts and the CFHSS (which is to say nothing of provincial support for universities) have manifested the need we have felt to collectively and politically support scholarship. One can only wonder the state of academic knowledge production in Canada without their benefit. The public sector is deeply involved in what constitutes scholarship.

There is therefore legitimacy in looking at scholarly publishing from a perspective of public administration beyond the fact that many scholarly publishers are public corporations. Scholarly publishing strictly defined as those publishers whose business is built around the publication of monographs and, to a lesser extent, scholarly journals, is mostly (but certainly not exclusively) composed of university presses. Scholarly publishers assemble the knowledge creation practices required for scholarly validation. The distinction of scholarliness is managed in a number of ways. I identify three broad areas: editorial policy, administrative measures, and practices of solvency. Editorial policy refers to the process by which manuscripts

are acquired and the decisions to publish are made. It is also what allows for the publication program to be distinguished from the generalist mainstream of publishing. Administrative measures refer to the effect on knowledge creation of the administrative structure and daily contingency of scholarly publishers. The claim to scholarliness by means of the peer-review process is perhaps the best example. Finally, scholarly publisher distinguish their claim to scholarliness by investing in the value of their intellectual capital.

Practices of solvency are those efforts concerned with intellectual capital and the broad efforts to maintain and exchange it in light of a concern for the organization's survival.

The organizational by-product of scholarly publishers is the book. Long thought of as the causal outcome of the author's intention, research both old and new attempts to widen our understanding of the processes through which books appear. Scholarly books, it would seem, are a product of complex and often conflicting interactions between several individuals. The production process gathers so many complex interactions that some question the pre-eminence of the author's intent in bringing a book to life. Darcy Cullen (2012) calls this the social text, the idea that a book is the production of a set of activities which are housed by the publisher. This perspective is very welcomed given the need for authentic intellectual independence in scholarly endeavors. An approach which operates from a perspective of chaotic perspective on knowledge creation is well suited to study such organizations (and indeed to manage them).

A brief glance seems to underscore the growing presence of order in scholarly publishing. The issue of industrial concentration of the non-university presses no doubt responds to market difficulties. But the intensity of the

concentration, the capacity that the mega groups have of organizing the distribution of knowledge within their fiefs is not without its consequences for the presence of chaotic knowledge creation practices. The more onerous problem of editorial standardization can be observed through the rationalization of the production process, from manuscript acquisition to marketing. One has to wonder to what degree the fundamentally organic nature of scholarly knowledge production is affected by the requirements of page limits, number of chapters or, worst of all, limits in bibliographical material. Even changes such as abandoning copy-editing, or worse imposing severe house styles, can have a significant effect on the organic nature of scholarly production. In the search for greater savings from greater efficiencies the distinguishing marks of the scholarly book are being sidelined.

University presses might be able to resist industrial concentration (an often overlooked attribute of public ownership) but they remain vulnerable to the power of the more diffuse of the two phenomena. Though they fiercely maintain their editorial independence, they are subject to the same institutional forces on their production². Subsidies shield them from the market forces, but these are in decline and have certainly not kept pace with the explosion in scholarly production. There is therefore reason to suspect that orderly knowledge management practices are displacing the chaotic elements with little regard to the contribution of chaos to knowledge creation. Both issues are attempts to impose greater control and can therefore be thought of as exercises of power. They can ultimately be thought of as a strategy to more directly manipulate what constitutes knowledge.

² Witness the 'monograph crisis' of the 1990's, where the sudden jump in subscription prices of scholarly journals brought on by the concentration under select commercial groups severely affected library budgets. As a result, libraries had to cut their purchase of monographs.

Theoretical Conclusion

As a theoretical conclusion, I present a first attempt at framing the preceding discussion on scholarly publishing within the three-dimensional figure presented earlier built from my personal experience. I proceed by looking at figure 1 from the three possible vantage points (front, vertical, and horizontal). Figure 2 presents the more conventional interface between management and knowledge, one which I feel is readily acknowledged. Figures 3 and 4 however attempt to break down each set of characteristics according to the order/chaos distinction. Again, the idea is not that an organizational action is to be classified on one or the other side. We might think of it as a kind of sliding scale between two defined extremes. This is what is meant by a binary typology, a typology which is not defined by comparison to a single ideal-type but to two mirror points. The material is built from the three areas of organizational activity of scholarly publishers identified above (editorial policy, administrative measures, and practices of solvency). The divide between chaos and order is largely one of perspective, one which is supremely confident in its application, and one which reveals the complexity of it. In reality, they blend and are two sides of the same coin. It is also an exercise for power. Hence, the distinction is often articulated as one of willful exercise versus the elements which undermine the capacity of this power.

Knowledge Creation Practices in Scholarly Publishing

(Front View)

x axis: internal/external

y axis: production/management

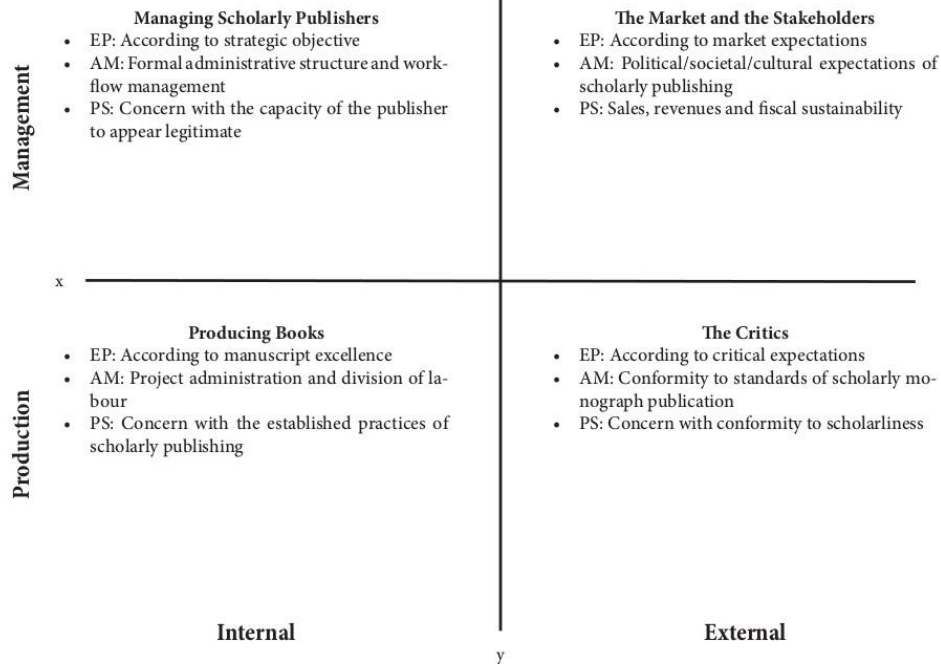


Figure 2

From the perspective of editorial policy, the underlying theme to all four is the manuscript selection process. It seeks to examine how knowledge creation is affected by the varying pressures which weigh on the decision-to-publish. Administrative measures here identify the effect on knowledge creation of elements associated with, on the management side, the structure, and on the side of production, the actual book production process. The practices of solvency similarly are divided into four areas of activity which feed the process of knowledge creation. We here see management as a weight on knowledge creation through its efforts to appear legitimate as well as present balanced operation budgets. Production concerns itself more with the aspect of intellectual capital which seeks to conform to the history and expectations of scholarly publishers.

Knowledge Creation Practices in Scholarly Publishing

(Vertical View)

x axis: internal/external

z axis: order/chaos

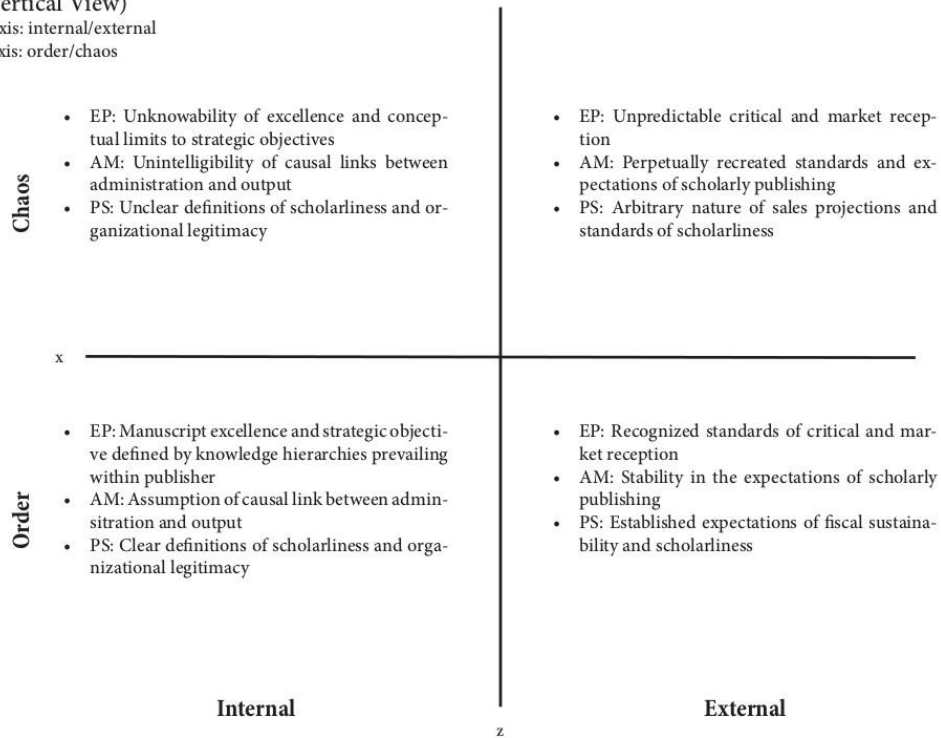


Figure 3

In figure 3 the internal/external distinction is framed within the distinction between order and chaos. Broadly, the distinction here is between defined expectations and the fundamental incapacity to predict outcomes (editorial policy), the unpredictability of the multiplicity of reality (administrative measures), and doubt regarding the reliability and relevance of information from which intellectual capital is generated (practices of solvency).

Knowledge Creation Practices in Scholarly Publishing

(Horizontal View)

z axis: order/chaos

y axis: production/management

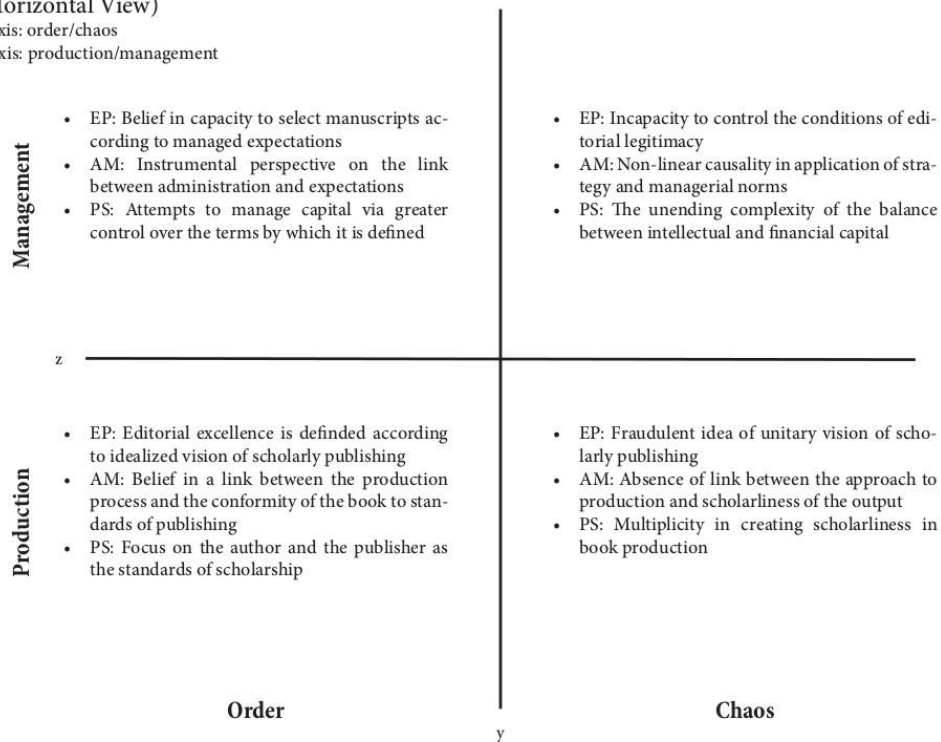


Figure 4

Figure 4 frames the distinction between production and management across order and chaos. The pressures which editorial policy brings to bear upon knowledge creation is divided between the certainty in the ability to manage the market and replicate editorial excellence and the elusive nature of such concepts. From the perspective of administrative measures, the effect is one of a distinction between the belief in the publisher's capacity to control the standards of publication and the multiplicity of individuals to whom such efforts of recognition is bound. The practices of solvency underscores the effect of the publisher's perspective on intellectual capital management on knowledge creation as well as the contrasting role of the author/publisher with the anonymous network of individuals responsible for the book's apparition.

General Conclusion

I have attempt to offer conceptual clarifications ahead of introducing a new dimension of thinking on organizational knowledge creation. Though it still requires clarifications, notably on the subject of the links between order and chaos, I believe it to be a framework which can help situate our thinking on the subject.

In a way, I offer little new insight. Much of the literature in organizations studies and public administration, particularly the literature on institutionalism, governance, complexity theory as well as the critical approaches have sensed the existence of a dimension of knowledge production which operates beyond the individual's capacity to understand. My choice of Nietzsche however reflects my willingness to look back from the most extreme of points which these approaches have perceived.

The application of my thought experiment to scholarly publishing has revealed that it is at least useful in outlining different areas of reflection. I have attempted to draw these areas always in answer to the question: how would this affect knowledge creation in a scholarly publisher? I am for the moment drawing on my own experience and hope to soon gather material from individuals involved in some way with scholarly publishing. I aim to focus on public management so as to produce an account of how knowledge creation practices in scholarly publishing contributed to the development of the discipline. I am to examine how scholarly publishers helped define the field vis-à-vis more populist publications.

Though the framework is conceptualized for organizations in general, scholarly publishing being a mix of both public and private endeavours, it is of greater use to public administration. Citizen engagement and the various other efforts by public agencies to find their place in a democratic society exercise a

powerful chaotic effect on knowledge creation. Chaos is hence especially preponderant in public organizations as these manifest greater need for what could be termed a multifaceted aspect of organizations: government researchers sometimes speak on their own ground (though apparently not lately); agents interact with the public according to their cautioned judgement; public agencies possess numerous instances of appeal and counterweights to its action. In other words, public agencies speak with many mouths and there are numerous instances for a chaotic element to make its presence known and reveal the existing bureaucratic order as an exercise of power. Efforts to restrict the inherent chaos of public organisations affect policy outcomes. Bureaucratic life is chaotic in essence, but that this is not something which should be frowned upon, but rather embraced. And not because of some moral devotion to radical democracy, but simply because there is nothing to be done about it.

In reality, order and chaos blend and represent little more than a two lenses from which to pick apart the conflicting observations in public organizations. It remains difficult to conceive how public organizations would not lose their capacity to remain accountable and to govern without some application of order. However, an excess in order creates its own set of problems as the current state of scholarly publishing can demonstrate. Tendencies to order assemble the capacity to exercise power on a wide scale, a hallmark of political modernity from which we should be loathed to depart. But an overly formal approach to knowledge creation can be repressive, and thereby undercut the very dynamism that approaches such as Nonaka's seek. On the other hand an overly chaotic approach might be unstable.

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