

ORGANIZATIONAL GRAMMAR GÖDEL AND THE OTHER

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1. Introduction

Franz Kafka's story¹ of the Law is a good way of introducing the concept of organizational grammar (orgrammar). It is a story that cannot stop like the non stopping proof of Gödel's incompleteness theorems². It goes as follows.

A man stands in front of a door through which he must pass and behind every door is an endless series of doors through which he must also pass. Each door is guarded by a doorkeeper who demands of the man, that to pass through the doorway, he must ask the right question. Successive doorkeepers are stronger and stronger. So the man cannot barge his way through. The succession of doors and doorkeepers is endless; it does not stop. Finally the man asks; *"If the door is so important, why has no one else come?"* The doorkeeper answers; *"Because this door belongs to you and now I am going to close it."* Let the doors be the set of orgrammars. Let the doorkeeper's and the questions remain open to interpretation. The Bardo Thodal story³, below, tells a similar story.

Interdependence is a key feature of complex adaptive systems and of organizations. Interdependence can lead to chaos. One of the precipitants of the concept of orgrammar was the unreality of Kauffman's simulation results that put the borderline between order and chaos is a degree of interdependence between elements in the system greater than 3. Above that level a system risks complexity catastrophe and small changes in the system's internal dynamics percolate through the entire system in much the same way as viruses spread or banks collapse triggering bailouts and the Great Recession. Below a critical level of interdependence Kauffman systems freeze and become incapable of adaptation to external dynamics.

Clearly the degree of interdependence within social, economic, business and political systems is much greater than 3. An important question is: what properties of networks (equivalently, matrices) give rise to the probability of percolation throughout the entire system? The answer hangs on their modular structure and the average degree distribution of nodes/vertices⁴.

The approach to percolation through modularity or degree distribution implies the extent of percolation depends on the structure of networks (or matrices). Small world networks for example are robust against changes that affect the nodes (vertices) or individual matrix elements but fragile against targeted changes. The approach through orgrammar examines instead the properties and dimensions of orgrammar that determine the system state of an organization and its path over time.

An organization can be defined at various levels of generality, individual firms, industrial sectors or entire economies or societies. One way of thinking about organization is as larger or smaller coalitions or coalitions within coalitions.

ⁱ This is an alternative and extended version of a paper to be given (2011) at a conference in honour of David Boje's contribution to organizational studies, focusing on Boje's concept of antenarratives: the topic of that version was the location of antenarratives on the spectrum of orgrammars. Technical details are in the endnotes.

Organizations settle in one system state or other temporarily⁵. The role of orgrammar is to limit variations in their trajectory over time: to gradual changes modelled by Markov or Weiner/Brownian motion or phase transitions in which orgrammar may lead to self ordered criticality (SOC) and phase transitions or changes associated with the tail end of a heavy (fat) tailed distribution.

Summary

A rather terse summary of the paper is as follows and the remainder of the paper attempts briefly to clarify it.

Orgrammars are organizing principles in that they introduce order into a system and enable us to make sense of it, or impose meaning on it. The most immediate orgrammars relate to the world of experience: the material world that includes business and political organizations and institutions, social institutions including the polyphonic voices of communities and organizations and within the minds of individual people. Different spheres or planes of Being have corresponding orgrammars. A description of the world of experience is Heidegger's concept of Dasein⁶.

Planes or spheres of Being extend beyond Dasein, although they are connected to Dasein: every sphere of Being is connected to every other⁷. There is a hierarchy of orgrammars corresponding to different planes of Being, with many, often overlapping orgrammars in each plane. Rather than thinking of hierarchies of orgrammar as suggesting precedence of one *plane of Being* over another, it is more accurate to think of orgrammars as written upon one another, in the manner of a palimpsest. A palimpsest occurred when texts had to be written on valuable parchments, one upon the other, with previous texts partly erased but still visible. A palimpsest in the context of orgrammars can be thought of entire set of orgrammars, some partly erased, with traces remaining, some prominent: but traces of former scripts influence the reading of the uppermost text.

Deconstruction is a process of revealing the existence of the *Other* that exists in alternative orgrammars; as it were, reading the underlying scripts. *Other* used in this way, signifies what is excluded by a particular orgrammar. Every orgrammar is incomplete: a mapping⁸ exists between orgrammars and Gödel's axiomatic systems⁹.

The mapping is this. Every orgrammar relies on another orgrammar (a meta-orgrammar) for completion and the process of working towards completion of a grammar is endless. Like the non stopping proof of Gödel's theorem, it cannot stop. Every orgrammar has an *Other*, evoked by alternative orgrammars. The *Other* contains what is excluded by a particular orgrammar, and is exposed by an alternative orgrammar, which in turn proceeds, Gödel like, to exclude its own *Other* and so on. In so far as truth is connected to meaning or sense making, every truth is relative to a particular orgrammar¹⁰. A state that is pre-orgrammar is impossible, but it exists. The state of pre-orgrammar is the source from which creativity emerges: the last part of the paper examines this proposition. Rather than constituting a paradox, existence and non-existence of orgrammar establishes mystery and recognition of mystery as a scientific principle. Pure stories¹¹ provide a theatre for mystery: the Bardo Thodal (below) is a story that describes a pre-orgrammar state and the transition to orgrammars.

2. Orgrammar

Whilst grammar for Wittgenstein¹² is defined as rules for the use of a word, orgrammar is more broadly defined: by its (i) properties, (ii) dimensions (iii) spaces it occupies and (iv) the *plane of Being* to which it relates.

Properties

As with grammar generally, orgrammar has properties of morphology, syntax and rhetoric. The morphology¹³ of organizational grammar describes the qualities of organizations that we choose to focus on. Viewing an organization (or a group of organizations) as a network as in figure 1, there is a choice as to which properties. Vertices (A, B,) in figure 1, may refer to elements within organizations (teams, projects, value chains), or between them (supply chains, alliances, mergers) to qualities and quantities (structures, routines, architectures, payoffs monetary and non monetary) or the organization's stories¹⁴. Syntax determines permissible linkages/edges between vertices permitted by the prevailing rules of the orgrammar. Edges may be thought of in a timeless way as synergies or through time as feedbacks or blowbacks; transmission of events at one time to another¹⁵. Rhetoric describes how we speak about organizations; the conventional wisdom, discourse or paradigm.

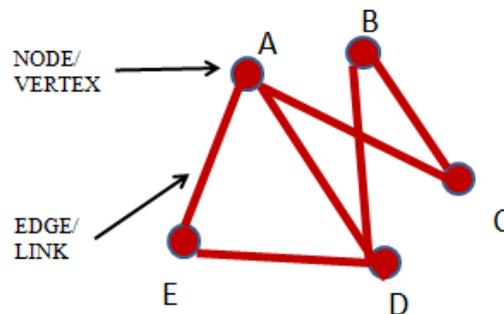


Figure 1

Dimensions in Dasein

For the moment we focus on the plane of Being that people insist upon calling the real world; the real world is, loosely speaking, the world we are part of in everyday experience, that Heidegger called Dasein. Orgrammar conditions the way the real world or *plane of Being* (Dasein) behaves and also conditions the way it is perceived and the criteria on which it is evaluated. The dimensions of orgrammar are the set of rules, (a) formal/informal, (b) social/personal (c) internal/external operating on organizations and determining their (system) state at a moment in time and their transition from one (system) state to another over time.

The categories (a), (b) and (c), illustrated in figure 2, contain many variables: so the space occupied by orgrammar, even when we limit discussion to Dasein, has a very high, perhaps infinite dimension.

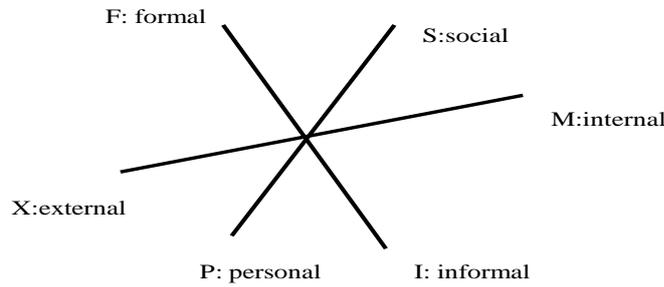


Figure 2

Table 1 categorizes orgrammar according to figure 2 in the orgrammar of Dasein. The categories FSX through to IFM are not distinct or exhaustive. Even figure 2, limited as it is, there are 256 (2^6) possible groupings. Considering the number of elements in each category, orgrammar is like a state vector of infinite dimensions that encodes everything about the state of Dasein at any instant: it is a state vector of possibly infinite dimension in Hilbert space.

F S X	FORMAL SOCIAL EXTERNAL	Outside: societal, codified, written: laws, regulations, treaties, contracts, rituals, traditions, constitutions.
F S M	FORMAL SOCIAL INTERNAL	Inside: codified, written: formal organizational routines, architectures, structures, systems, hierarchies, contracts within.
F P X	FORMAL PERSONAL EXTERNAL	Outside: codified, certified, accredited: formal education, shared paradigms and ways of thinking, qualifications.
F P M	FORMAL PERSONAL INTERNAL	Inside: individual education and experience, certified, codified, corporate: specific education, accredited skills, training and knowledge.
I S X	INFORMAL SOCIAL EXTERNAL	Outside: societal, group; informal (unwritten) customs, conventions, mores, morals, cultures, codes.
I S M	INFORMAL SOCIAL INTERNAL	Inside; societal group norms: shared values; corporate culture, customs, traditions, mores, codes.
I P X	INFORMAL PERSONAL EXTERNAL	Outside: individual, un-codified: personal history and values, behaviour, patterns, learned paradigms, mental maps, models, conditioning, habits of thought.
I P M	INFORMAL PERSONAL INTERNAL	Inside: As (IPX) individual behaviour patterns and mindsets, personal paradigms and schema for assessing the world, and solving problems; learned within the organization or the personal legacy of brought in.

Table 1

System states and trajectories in Dasein

The system state of an organization, broadly or narrowly defined, is illustrated in Figure 4. In figure 4 payoffs are the outcomes. The distinction between inner and outer dynamics depends on what level of organization we are speaking about. For a team in a business firm for example, the business unit or division is part of the outer dynamic. For the business unit headquarters is part of the outer dynamics. For a nation, the global economy is part of the outer dynamic. For the global economy, the ecosystem of the earth itself is part of inner dynamics.

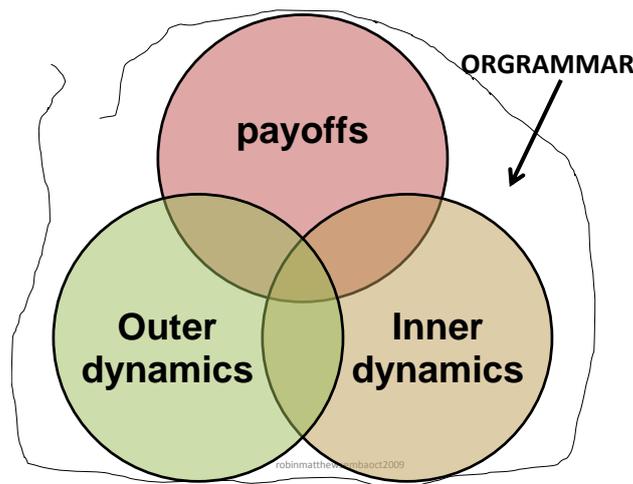


Figure 3

Figure 3 illustrates the broad categories of a system state. Organizations settle in one system state or other, temporarily. Orgrammar determines the system state at a moment in time and the trajectory over time. As to the trajectory, the role of orgrammar is to (try to) limit variations in the trajectory over time to gradual changes that are usually modelled by Markov or Weiner/Brownian motion. Phase transitions may arise when orgrammar adapts a system to a point of self ordered criticality (SOC). Phase transitions are associated with change at the tail end of a heavy (fat) tailed distribution, rather than the moderate fluctuations envisaged by Markov or Brownian processes¹⁶. Elements of the system state (system state variables) depend on the properties of orgrammar that we wish to focus on. We can treat them as a high dimensional vector of state variables determined by the existing orgrammar. Hence to characterise a system state it is manageable to focus on relatively few aspects. One possibility is to think of the system state as a coalition structure and the trajectory of system states over time as characterised by transitions from one coalition structure to another.

3. Spheres of Being

We can think of orgrammars as having lateral or horizontal dimensions, indicating that there are many alternative grammars pertaining to each *sphere of Being*. The process of deconstruction might be described as that of unveiling or discovering alternative grammars in Dasein. Deconstruction is concerned with the *Other* that is excluded by a particular grammar

or perspective of the world. Postmodern or relativist approaches are distinguished by their recognition that many different orgrammars exist or might exist.

There are many spaces, relating to different *planes or spheres of Being*, each having a distinctive orgrammar. Thus *spheres of Being* and related orgrammars have a vertical dimension, described metaphorically in various ways; the material world, the worlds of the soul, the spirit and so on is one description; another is the Freudian conscious, unconscious, plus the Jungian collective unconscious; another is described in the Bardo Thodal (below). Alternatively *spheres of Being*, may be distinguished by simply saying that ethics and norms occupy a different space from factual descriptions or the world.

In figure 4 the horizontal and vertical dimensions of orgrammar are collapsed into two dimensions: from the perhaps infinite alternative grammars \mathbf{g}_i , 5 orgrammars are illustrated. The set of all orgrammars is denoted G . Individual orgrammars have elements in common; for example \mathbf{g}_5 has overlapping characteristics with \mathbf{g}_2 . Perhaps all orgrammars have some characteristics in common as illustrated by the intersection ($\bigcap_i g_i$) of the 5 orgrammars. The 5 grammars illustrated do have distinctive features, (indicated by $\mathbf{g}_1, \mathbf{g}_2, \dots, \mathbf{g}_5$). The relationship between grammars is one of (family) resemblance rather than distinctiveness (disjointness).

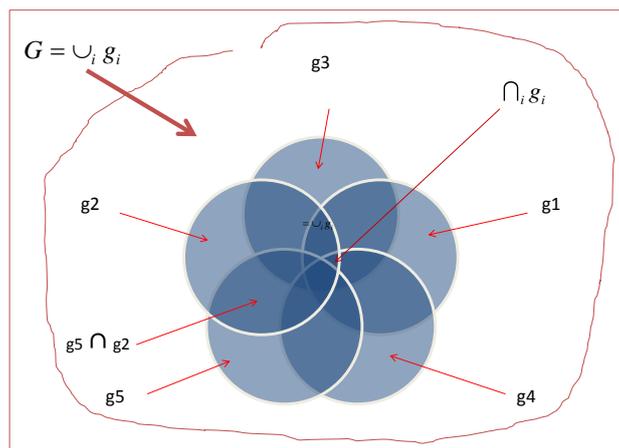


Figure 4

4. Gödel¹⁷

In relation to Gödel's theorems, no orgrammar is complete because there is always a statement in a particular orgrammar that we know to be true and it would be desirable to prove, yet it cannot be proved within that orgrammar. Alternatively we might describe every orgrammar as undecidable in that there are statements within that orgrammar that are neither provable nor disprovable. In this way, the characteristics of space and dimensionality of orgrammar becomes important. In order to fill the gap left by incompleteness or undecidability with respect to one orgrammar we have to resort to another orgrammar, which can be drawn either from the vertical or lateral spaces of orgrammar.

One way of illustrating Gödel's theorem in relation to orgrammars is the proposition that 'statement \mathbf{g} cannot be proved within orgrammar \mathbf{G} ': if the proposition is true and statement \mathbf{g}

cannot be proved within the axioms of grammar G , then orgrammar G contains a falsity and if the proposition is false and statement g can be proved within G then we have a contradiction. The argument seems like a kind of trick unless we remember every conceptual system (think conceptual here as part of the social/personal dimensions of grammar) must resort to another conceptual system for its completion: every orgrammar requires a meta orgrammar for its completion and even when we add the meta grammar G_m , we are still left with the original proposition, rephrased, but of identical form that, 'statement g_m cannot be proved within orgrammar G_m '. If we construct an orgrammar G_{mm} , that is, meta with respect to G_m , the same problem arises and so on indefinitely.

Naive verificationism¹⁸ (the dominant paradigm of management research), says a sentence or proposition can only be meaningful if and only if it is either analytically or empirically verifiable: the one proposition in a system governed by verificationism, is that is certainly neither analytically or empirically verifiable, is the statement that 'a sentence or proposition can only be meaningful if and only if it is either analytically or empirically verifiable'. It is tempting to think of the critique of relativism (which I equate approximately to social constructivism or postmodernism) as having the same status; 'if everything is relative, then the statement that everything is relative is relative as well'. Many, including postmodernists themselves, misinterpret relativism in this way. To say that a proposition is only true, in relation to a particular orgrammar is not to devalue the proposition. Understanding the physics of the fundamental forces of nature, for example, enables us to build machines of many kinds enabling us to use them to perform work of various kinds, but at the same time there may be other valid ways of understanding the universe; through metaphors like Lovelock's Gaia, or as Fechner's (1908) angel¹⁹ or by admitting the possibility of a multiverse or the necessity of different laws of physics.

In mapping Gödel into a social context for example, one of the several versions of competition, (creative destruction, Arrow Debreu, choice models favoured by the political establishment, red queen versions, shareholder value) or securities pricing models founded on the Ito integral, and Ito's lemma, one can always construct a statement of the kind, statement x cannot be proved within the system, which turns out to be a (Gödel) statement which is neither provable nor disprovable and it doesn't matter what the content of statement x actually is. What is important is that we always have to resort to an alternative orgrammar. Adam Smith understood this perfectly when he introduced the Invisible Hand as a meta grammar into his picture of a market system that was otherwise motivated by self interest.

A very simple example in Dasein, of the generality of theorems like Gödel's, is the story of Enron and the incompleteness of any financial incentive system. Top executives of Enron were rewarded with share options, applauded as the perfect recipe for focussing management attention on increasing shareholder value. Leaving aside deceit, since owners of options can win but not lose, (the minimum value of an option is zero whatever happens to the underlying share price), their risk profile differs from that of shareholders who can both win and lose (shares can move negatively as well as positively). Hence managers pushed Enron into a riskier position than shareholders would have liked: they bankrupted it. The search for competitive advantage is applauded as the dynamic of capitalism: but has exactly the same effect placing economies perpetually at risk from greed: periodically pushing the economy into recession. The costs of the latest financial crisis are estimated at between \$20 trillion and \$60 trillion.

5. Creativity

We can view creation as (a) creation as making something out of nothing or (b) creation as discovery. Let us describe what is created, or made, as the text, **T**. One way (a), to proceed is to make sense of the text; using orgrammar. Another way (b), is to return from the text to where the text emerged; abandoning orgrammar. The first way (a) is life; the second way (b) is death, return to the source.

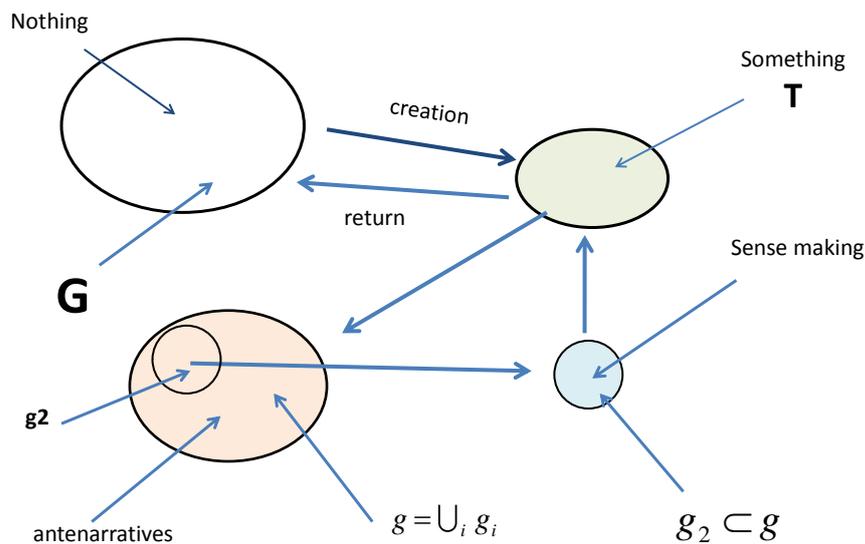


Figure 5

Creating a text **T** from orgrammar

Once something is created, the problem of sense making arises; the search for meaning. Resolving the problem requires imposing some degree of order or organization: it requires orgrammar. Making sense, or imposing meaning, leaves the text less open (than pure story)²⁰. In the rightwards direction (from the upper left) in figure 3 we have a creative flow; creating something, the text, **T**, out of nothing. Text requires orgrammar of some kind or other. There are many alternative orgrammars that can do this. But the orgrammar of antenarratives leaves the text relatively open as compared to the orgrammar of narratives. Thus antenarrative consists of a relatively open set of orgrammars **g** (the bottom left) in figure 3. A subset **g2**, of orgrammars **g** ($g_2 \subset g$), becomes the narrative of the text **T**.

The source of orgrammar

The set of all orgrammars illustrates Russell's paradox²¹: the set of all orgrammars is part of the class of sets that are not members of themselvesⁱⁱ. From the standpoint of Gödel, no orgrammar is complete: all orgrammars contain an Other. The set **G** containing all orgrammars must contain no Other (otherwise it would not contain all grammars). Hence the set of all orgrammars is not contained in itself. The class or set of all orgrammars (on every level of Being) contains no Other; if it does contain an Other it does not contain all orgrammars. But if the set of all orgrammars contains no Other it is not an orgrammar. Consider the set of all things that do not contain themselves. The set of all orgrammars is one of those sets. If it is a member of these sets then it contains an Other. So it is a member if and only if it is not a member. So where is it contained? Where does the set of all orgrammars live? It exists within emptiness. It is part of non existence, so it is empty of existence.

This is illustrated by the positioning of **G** in figure 3. The set of all orgrammars does not exist. It belongs to the empty set, labelled nothing in the figure. We now have a view of creation as making something, which we called a text, **T**, out of nothing. It may seem like a logical puzzle or a paradox but this is not important. What is important is that logic breaks down and we enter the mysterious.

Creation as return

There is another way looking at this: creation as discovery; returning to the source of things. Suppose in the search we move beyond one orgrammar to another, in the steps that the man in Kafka's story could take, but appears not to take. We go successively beyond orgrammars taking in orgrammar after orgrammar, moving towards the set of all orgrammars; beginning to include all planes of Being, soul, spirit, including orgrammars on every plane of Being, in the limit we approach the set of all orgrammars which contains no Other and we are left with nothing; emptiness, death.

Consider figure 3 from the perspective of discovery or return to the source. The wider set of orgrammars containing the antenarrative and the more restrictive alternative orgrammars containing the narratives exist. The problem is to return to the source from which creation emerged, by successively uncovering meaning by abandoning orgrammars because there is always an excluded Other, abandoning all sense making and all organizing procedures.

What would remain as a result of abandoning orgrammars in this way? From one perspective, it would be the set of all orgrammars which is empty, nothing, and from another perspective nothing which contains all orgrammars. Creation is birth, creating something out of nothing; discovery is return to the source, which is emptiness, death.

The Bardo Thödol describes creation as making something from nothing and creation as discovery or return to death, symbolically. It is a story of the intermediate state between death and rebirth, nothing and something. One way of thinking about the Bardo Thodal is to see time, not as an endless succession of moments, like firework patterns successively exploding into the night sky and (almost) instantaneously fading into darkness: not as passing along a continuum, from past to present to future. Eternal time would be a set of concurrent moments happening in a single instant; instant and eternal, in that there is only that one moment,

ⁱⁱ An example of Russell's paradox is the town where all men shave; some shave themselves others are shaved by the barber. Who shaves the barber? The barber can only shave himself, in such a town if he does not shave himself.

nothing exists after or before; past and future collapse into an eternal now. Eternal time would have another imaginable characteristic. All potential, conceivable and inconceivable, would be contained in that eternal instant. Because it contained all potential, eternal time would contain all orgrammars, conceivable and inconceivable.

Story 11

The text of the Bardo Thodal is in three parts. The first part is the Chikhai Bardo describes the psychic happenings at the moment of death. Immediately after that moment, is the second part, the Chönyid Bardo, a dream state, of illusions. The third part, the Sidpa Thödol describes the onset of the birth instinct. In the Sidpa state the dead man is unable to benefit from the Chikhai and Chönyid Bardo states. The dead become caught up by the vision of mating couples. Supreme insight and illumination occurs during the actual process of dying. Soon afterwards illusions begin that lead to reincarnation. Illumination becomes fainter and fainter, insight into truth becomes less and less bright and visions become increasingly terrifying, as physical rebirth gets nearer.

Recalling story 9, birth and death and rebirth occur in every instantaneous, eternal moment.

6. Concluding remarks

Concluding remarks are confined to the role of orgrammar in Dasein. Other planes of Being may be spoken of elsewhere. Some general remarks are followed by some implications of the discussion for business and consulting. The remarks should be prefaced by the remark that it goes without saying that creativity is off an MBA agenda.

Returning the notion a palimpsest, one plane of being may reflect every other plane: in which case every plane is reflected somehow in Dasein²². Orgrammar determines the state of the plane of Being of Dasein at any moment. Formally we might say that orgrammar is a state vector in Hilbert space of infinite dimension. Grammar in other words spans the space of Dasein. If we consider the number of elements or state variables contained in the space occupied by organizations, for example, elements existing within an organization (i.e. its activities, projects, teams, etc.) outside (it's macro environment, technological, economic, ecological and so on) and its payoffs (contributions monetary and non monetary to its stakeholders) this space too has a high dimension. The space occupied by the orgrammar may be higher or lower than the space occupied by the elements of organizations.

Suppose for the moment we think in terms of systems of equations²³ which we are trying to solve by constructing orgrammar in Dasein. Treating solutions as configurations of system states, we can imagine orgrammar as occupying a vector space of rank H. If the number of elements N exceeds H then perhaps we seek to expand orgrammar: the situation may be chaotic or random. If the number of elements N is less than H the solution space has rank H-N and there are many perhaps infinite potential solutions in Dasein. Orgrammar fixes a system in some system state, over a probability distribution of systems states. The lower the rank of orgrammar in relation to the number of elements, the more likely it is that the transition from one system state to another (trajectory over time) will be unstable and uncertain. Higher rank of orgrammar can give rise to SOC/phase transitions.

If the space or orgrammar has a higher dimension then there are many potential solutions to our problem of introducing order, or making sense; of course, none of them satisfactory because we know from Gödel, that there is always something excluded; always there is an *Other*. If the dimensions of the space of orgrammar are smaller than the space of orgrammar, then we must always be adding new elements to orgrammar to make sense of things, to introduce some order, or to introduce the order we would like. In either case, higher or lower dimension orgrammar as compared to the elements it is trying to make sense of, or organize, there is always something missing.

Hence, there is a compulsion to restructure and restructure and control; to introduce structure, plot, themes, and actors with roles and spheres of action and causality; to impose narrative on antenarrative. There may be an illusion imposing narrative or increasing the dimensions of orgrammar will produce order, unambiguous solutions or meaning. But it is an illusion.

One of the themes running through the paper is interdependence: interdependence between societies and between finance economics and business; interdependence as the need to take a multi-disciplinary approach to the theory and practice of business and economics; Dasein means that for the most part the perceiving subject is inseparable from the perceived object; interdependence as a need to take account of the importance of different spheres of Being, between the material and the spiritual worlds, between profit and ethics and social responsibility; interdependence as the need to abandon policies based on maximisation of the wealth of particular individuals and groups at the expense of others.

Another largely implicit theme is deconstruction. Essentially outside help with business problems involves deconstructing their formulation by managers who are too close to the problem to see it. Interesting problems, that is those that are beyond algorithmic solution are usually too closely associated with a transitory system state to be prone to algorithmic solution: maybe muddling through is the optimal solution to interesting problems. Deconstruction also involves revealing from time to time the *Other*: not only disgraceful CEO's, but in the form of alternative orgrammars. As Ghoshal pointed out in one of his last papers, business schools are not only too respectful of pretty tired business concepts like competitive advantage, efficient markets, shareholder value, normal distributions and such like; but they present them as part of a universal orgrammar. Another aspect of orgrammar with respect to business problems (and Dasein) is the managers and academics (including this one) who pose the problems are part of the problem.

7. References (to be completed)

Ayer, A.J. (1952), *Language Truth and Logic*, Dover Publications, New York.

Baldock, J. (ed.) (2009), *The Tibetan Book of the Dead*, Trans. Lama Kazi Dawa-Samdup Arcturus, China.

Boje, D. M. (2001), *Narrative methods for Organizational & Communication Research*, Sage Publications, London.

Boje, D. M. & Grace Ann Rosile, (2002). *Enron Whodunit?* *Ephemera*. Vol. 2(4), pp. 315-327.

Boje, D. M. & Grace Ann Rosile, (2003), *Life Imitates Art: Enron's Epic and Tragic Narration*. *Management Communication Quarterly*. Vol. 17 (1): 85-125.

Boje, D. M., Rosile, G.A., Durant, R.A. & Luhman, J.T. (2004), "Enron Spectacles: A Critical Dramaturgical Analysis". Special Issue on Theatre and Organizations edited by Georg Schreyögg and Heather Höpfl, *Organization Studies*, 25(5):751-774.

Boje, D. M.; Rosile, G. A.; & Gardner, C. L. (2007). "Antenarratives, Narratives and Anaemic Stories" Chapter 4, pp. 30-45, *Storytelling in Management*, Editors: Ms. Nasreen Taher and Ms. Swapna Gopalan, Publisher: The Icfai University Press, India.

Corbin, H. (1990), *Spiritual Body and Celestial Earth*, I.B.Tauris and Co..Ltd., London.

Dreyfus, H.L. (1999), *Being-in- the- world: A commentary on Heidegger's Being and Time Division 1*, The MIT Press, London.

Eco, U. (1989), *The Open Work*, Trans. Anna Concogni, Harvard University press, Cambridge Massachusetts.

Evans-Wentz, W.Y. (ed.), (1957), *The Tibetan Book of the Dead*, London

Fechner, G.T. (1907), *On the Question of the Soul*, Hamburg and Leipzig.

Forster, M.N., (2004), *Wittgenstein on the Arbitrariness of Grammar*, Princeton University Press, Princeton.

- Gödel, Kurt, (1962) "On Formally Undecidable Propositions of Principia Mathematica and related Systems". Trans. B.Melzer, Oliver. Edinburgh, (1962)
- Heidegger, M. (1996), Being and Time, Trans. Joan Stambaugh, State University of New York Press, New York.
- Jung, C.G. (1981), Psychological Commentary on the Tibetan Book of "The Great Liberation" in Psychology and Religion: West and East, Trans. R. F. C. Hull, Princeton University Press, Princeton.
- Kafka, Franz (1923), The Trial, Trans. Willa and Edwin Muir, Schocken Books New York.
- Kauffman, S. and Levin, S., (1987), Towards a general theory of adaptive walks on rugged landscapes, *J. Theor. Biol.*
- Kauffman, S.A., (1993), The Origins of Order, Self-Organisation and Selection in Evolution, Oxford University Press, 1993.
- Knight, F.H. (1921), Risk Uncertainty and Profit, University of Chicago Press, Chicago.
- Lucas, J.R., (1961), "Minds Machines and Gödel," *Philosophy* 36 , pp. 112-27.
- Liotard, (1979), The Postmodern condition, A Report on Knowledge, trans. Geoff Bennington and Brian Massumi, University of Minnesota Press, Minneapolis.
- Matthews, Robin, (2011), Transition, Evolution and Change on the Organization Matrix. Forthcoming.
- Mintzberg, H., (1989), Mintzberg on Management, Free Press, New York.
- Newman, M (2008), 'The physics of networks', *Physics Today*: 33-38.
- Penrose, R. (1989), The Emperor's New Mind, Vintage, London.
- Searle, J.R. (1969), Speech Acts: An Essay in the Philosophy of Language, Cambridge University Press, Cambridge.
- Searle, J.R. (1997), The Mystery of Consciousness, Granta Books London.
- Thomas, D.W., (1995) Gödel's Theorem and Postmodern Theory, Modern Languages Association, pp.248-261.
- Watts, D (2002), 'A simple model of global cascades on random networks', *Proceedings of the National Academy of Sciences* 9: 5766-5771.
- Watts, D.J and Strogatz, S.H (1998), 'Collective dynamics of 'small-world' networks', *Nature* 393 (6684): 409-10.
- Wiener, N. (1950), The Human Use of Human Beings, Houghton Mifflin, Boston.
- Wittgenstein, L. (1963), Philosophical Investigations, Trans. G.E. M. Anscombe, Basil Blackwell, Oxford.

Notes

¹ Kafka (1923) gives a number of possible interpretations of the Law in the text of *The Trial*.

² Searle (1998) gives a simple example of not stopping. If we ask a machine to find a whole number greater than 6 will stop at 7: but if we ask it to find an odd number that is the sum of two even numbers will not stop.

³ Jung (1958); Evans Wentz (1927); Baldock (2009)

⁴ Newman (2008).

⁵ The question of as to whether a system state is equilibrium is irrelevant. The state is momentary: 'temporary tranquillity' in Joan Robinson's words.

⁶ Heidegger (1996); Dreyfus (1999). Dasein means literally being-here or being-there. The implication of choosing Dasein to describe the real world is that there is no separate intending subject (decision maker) deciding what to do; instead the subject is part of the world, inseparable from the world whose decisions are governed by the prevailing orgrammar or orgrammars. Heidegger's Dasein corresponds to the Buddhist notion of attachment; (wo)man's behaviour is programmed/conditioned by properties of orgrammar. This view is completely at variance with the stance taken by many economists and most academics in business schools (particularly strategists); in which rational subjects make decisions about a separate (predicate) world. Where Heidegger's view differs from that of contemporary cognitive science is in the possibility of living authentically; that is, being distinct from the crowd by being conscious of the predicament of death. Heidegger's limitation is that he seems to perceive that there is only a single sphere of Being. However authenticity in is surely a kind of meta cognition. See later comments, on the Bardo Thodal, on the absence of orgrammar nothingness and death.

⁷ The idea of interconnectedness of different spheres of Being is what Jung was trying to capture with his concept of synchronicity, and Swedenbourg with the concept of correspondences.

⁸ A mapping, as in (the relation of) a landscape to a map, is simply the transformation of one thing or symbol into another. Orgrammars are not axiomatic systems. But their incompleteness is demonstrated below (pages 6-7).

⁹ Lucas (1961); Penrose (1989); Searle (1998).

¹⁰ If relativism is seen in the sense of allowing the possibility of alternative orgrammars, then it is unexceptional.

¹¹ Stories appear in many different media. They may be literary; plays, novels, short stories, fairy tales, comics or myths. They may be passed down through the generations verbally. They may be implicit in pictures, portraits, charts, maps, diagrams or tables of numbers, graphs, or cartoons: or told in film or TV, or in photographs or dreams or fantasies. Mathematics tells stories in its own language as does every academic discipline, or company report, or advertisement, or police or hospital record. Stories may be open works or they may be closed. The more open the work to interpretation, the closer it is to story; the more closed, the closer it is to narrative. Some narratives appear to be entirely closed, but they are opened up to alternative narratives by deconstruction, the appearance of difference, the continuing presence of the other or the shadow. The medium affects the message, the meaning and the interpretation. The intention of the author becomes irrelevant as the text of the story or the narrative is disseminated: ownership of intention rests with the reader, the viewer, the interpreter; his or her moods, dispositions; the influence of the crowd.

¹² Wittgenstein (1953); Forster (2004); Lyotard (1979).

¹³ There are many morphologies corresponding the dimensions of orgrammar we wish to focus on. Limit discussion for the moment to morphologies in Dasein. What we focus on in Dasein is determined by orgrammar. Figure1 gives a broad indication of the dimensions (aspects) of organizations that capture our attention, for example; elements of the value chain; activities (subsets of value chain elements); categories from management accounting; elements from the balanced business scorecard, six sigma (or some such fad). Probably alternative morphologies should be aligned with payoffs of organizations and stakeholder groups. Denote set of all morphologies as \mathbf{K} and particular morphologies, \mathbf{k} , ($\mathbf{k} \in \mathbf{K}$) each containing $i = 1, 2, \dots, m$ elements. So \mathbf{k}_i are elements of a particular morphology.

¹⁴ See Boje references above and below.

¹⁵ Interdependence through time is referred to as positive feedback that takes systems upwards (virtuous circles), as exemplified by the boom/bubble period in the years leading to the financial crisis beginning in 2007: and take systems down (vicious circles), as exemplified by the recession/depression experienced from 2007 onwards in the world economy.

¹⁶ Boje's antenarratives throw an interesting light on this point. As well as indicating something that precedes something else, ante is connected by Boje to a bet that is made before the cards are dealt or before the odds (in a horse race for example) can be staked out precisely. Boje's view of antenarratives as bets is close to the view

that probability should be not be defined on relative frequencies or on logical possibilities (the odds of a head coming up when tossing a fair coin, or a jack being picked from a deck of cards). Instead probability should be defined on the unknowable and possibly infinite space of the potential of a situation. This is similar to the notion of risk implied by fat tailed distributions. Fat tailed distributions may have infinite variance, in contrast to normal or Gaussian distributions which have limited variance. In fat tailed heavy tailed distributions, extremes are usual.

¹⁷ The completeness problem for axiomatic systems concerns whether every statement within a system is provable within that system; which for orgrammars such as **g** rules out statements like, T is not provable in **g**. Consistency means that everything that can be proved (logically) true cannot also be proved false which also rules out statements like the one above. Truth in this context should not be confused with meaning. In addition to 5 above see, Thomas (1995); Godel (1962).

¹⁸ Ayer (1952).

¹⁹ Fechner (1907) story described by Corbin (1990) goes as follows. One fine spring morning seeing the light casting what looked like a halo over the earth, Fechner felt that he had concrete evidence that “the earth is an Angel, a gorgeously real angel, so like a flower”. But, he thought, nowadays such experiences are dismissed as imaginary. It is taken for granted that getting to know the earth is just a matter of researching mineral collections

²⁰ Stories that make up antenarratives, occupy a space of orgrammar (and Being) that is extensive, more extensive than narratives because they are not limited by narrative method; the orgrammar of narrative is a subset of the orgrammar of antenarratives. The question is: where on the continuum of orgrammars, are antenarratives situated? Figure 5 illustrates this.

²¹ Russell’ paradox is this. Consider the set **R** of all sets that do not contain themselves. If **R** exists then it is a member of itself if and only if it is not a member of itself. The set of all orgrammars **G** belongs to **R**

With respect to orgrammar, if $G \in R\{G : G \notin G\} \Leftrightarrow G \in G$.

²² Perhaps this is what Jung had in mind when he wrote of synchronicity, or Swedenborg had in mind when he spoke of correspondences.

²³. See Matthews 2011.