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FROM SYSTEMS TO COMPLEXITY THINKING¹



Complexity is a turn away from linearization, from hierarchic levels, to something holographic. Complexity is not lines! It's spirals in the dialogical interplay of narrative-order with story-disorder that produces the self-organization of Storytelling Organizations. This chapter is about the paradigm shift from systems thinking that is linearization to complexity thinking that is spiralization, as depicted in Figure 1.1.

What does complexity have to do with Storytelling Organization? Everything! There are those of us that profess that narrative and story have important differences. Narrative and story are typically treated as synonyms: different words that mean the same thing. Derrida raises two questions. First, what if narrative and story are homonyms: words that *seem* the same but refer to *different* things? Second, what if story and narrative form the border for each other to comprehend each other:

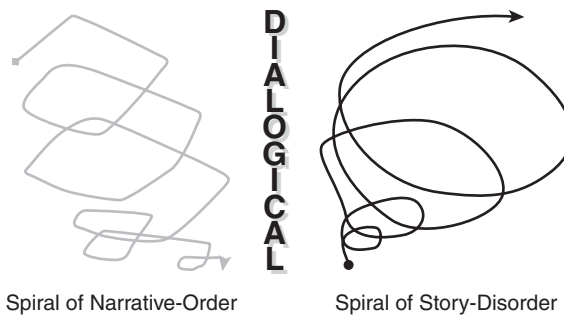


FIGURE 1.1 *Holographic complexity spirals of narrative order and story-disorder*

¹ I would like to thank members of my PhD seminars, especially Al Arkoubi Khadija, Yue Cai, David Tobey and Joe Gladstone for their written comments.

Each 'story' (and each occurrence of the word 'story,' (of itself)) each story is at once larger and smaller than itself, includes itself without including (or comprehending) itself, identifies itself with itself even as it remains utterly different from its homonym. (Derrida, 1991: 267)

Derrida puts narrative into a relationship to stories larger and smaller than themselves:

... The question-of-narrative covers with a certain modesty a demand for narrative, a violent putting-to-the-question an instrument of torture working to wring the narrative out of one as if it were a terrible secret in ways that can go from the most archaic police methods to refinements for making (and even letting) one talk that are unsupported in neutrality and politeness, that are most respectfully medical, psychiatric, and even psychoanalytic. (1991: 261)

The violence is methods that force a narrative linearization out of the interrogation of story, to put an origin, one middle, and one end into a BME linearization. Retrospective sensemaking is the demand to return to the scene to 'tell us exactly what happened' (1991: 260), 'to force a narrative out of the narrator' (p. 263), or to assemble 'narrative fragment' (p. 263) after narrative fragment into some originary detective puzzle in a 'linearity' of writing narratives.

The story (*récit*) is the homonym to narrative, not the synonym. The problem this interplay of narrative-story poses for systems thinking is that various hierarchic ordering models of systems complexity are flat grand narratives of linearization that wash out the stories of multiplicity and difference.

Bakhtin, in the 1920s anticipates Derrida's theory of *difference*, as well as the strange interplay of narrative-control and the more dialogic manner of story. Bakhtin's (1968, 1973, 1981, 1986, 1990, 1993) work on dialogical story gets us to the complexity of convergent-order (centripetal narrative) in opposition to divergent-disorder (centrifugal story) in their language moves.

PARADIGM SHIFT FROM SYSTEM THINKING TO COMPLEXITY THINKING

We begin this chapter by comparing the hierarchic linear levels of systems models of Kenneth Boulding (1956), Louis Pondy (1979), Michael Polanyi (1966), and Robert Pirsig (1974) as shown in Table 1.1. Not only is each a linearity ordering of systems stacked upon systems into a hierarchy of realities, these are each transcendental narrative subtext that is often ignored by previous reviewers.

The dialogism of order with disorder in acts of self-organization was also written about by Edgar Morin (1977, 1996). It is an escape from hierarchic order linear models of systems thinking, into complexity thinking. Boulding, Pondy, Pirsig, and Polanyi, as we shall see, also did not anticipate Morin's complexity ways of looking outside the rule of order into the disorder, self-organization of emergence

TABLE 1.1 Comparison of systems-hierarchic-levels models with non-levels-holographic-complexity

<i>Boulding, 1956</i>	<i>Pondy, 1979</i>	<i>Pirsig 1974</i>	<i>Polanyi's 1966 tacit knowing and emergence</i>	<i>Bakhtin/Boje 2007c non-hierarchic, Non-levels, Holographic</i>
N/A	? As yet unspecified level	N/A	N/A	? As yet unspecified Holographic Multi-dimensionality (4th cybernetics)
9 Transcendental	N/A	Transcendent nature of motorcycle technology (p. 285)	Transcendental values (e.g. Plato's Meno and past lives recall, p. 56)	Polypi-Dialogism of dialogisms (3rd cybernetics)
8 'Role' Social Organizations	Multi-cephalous System	Motorcycle as social construction	Mutual Social Control	Architectonic strategy (3rd cybernetics)
7 Symbolism (Human)	Symbol Processing System	Motorcycle as idea systems (mythos shaped by logos, p. 343-4)	Composition (e.g. literary criticism)	Chronotopic strategy (3rd cybernetics)
6 Image (Animal)	Internal Image System	N/A	Style (stylistics)	Stylistic Strategy (3rd cybernetics)
N/A	N/A	Rhetoric as reduced rational system of Aristotelian order (p. 353)	Voice (phonetics), Words (lexicography), Sentences (grammar) (i.e. 3 levels)	Polyphonic Strategy (3rd cybernetics)
5A Plant	Blueprint Growth System	N/A	Organic/Biotic	Organic
4 Cell (Open)	Open System	N/A	Chemical	Open (2nd cybernetics)
3 Thermostat (Control)	Control System	Motorcycle as control systems	Engineering/ Physics	Control (1st cybernetics)
2 Clockworks	Clockworks	Motorcycle as mechanical	Mechanistic	Mechanistic
1 Frameworks	Frameworks	Motorcycle as framework of concepts and functions	Frameworks (p. 17)	Frameworks as semantic vocabularies

in the everyday practical social communication activity of organizations that is not system parts merged into wholeness, because the parts do not merge, and the whole never seems to be finalized except in narrative imagination.

Systemicity is my replacement word for the outdated static linear-hierarchic conceptions of whole 'system.'² Systemicity is defined as the dynamic unfinished, unfinalized, and unmerged, and the interactivity of complexity properties (such as dialogic, recursion, and holographic yielding emergence and self-organization) constituted by narrative-story processes, in the dance of sensemaking (see Introduction). I invoke the word 'systemicity' in order to attack the 'illusion' that 'whole system' exists, because given the paradigm shift to complexity, and the focus on emergence (and self-organization), organizations are continually being reorganized, and never seem to finish long enough to have merged parts or some kind of fixity of wholeness. Morin (1977, 1993) for example, asserts that 'the whole is greater than the sum of the parts' and has become an illusion, or to put it more bluntly mantra so taken-for-granted, that wholes are being sighted everywhere, and way too often. This I think is Harold Garfinkel's (1967) main message, that people get upset when you start to question that some wholeness exists to sort out the meaning of a conversation (Shotter, 1993) or its complexity (Morin, *ibid.*). This shift to complexity paradigm, alters my earlier definition: I redefine Storytelling Organization as, 'collective storytelling system[icity] in which the performance of stories is a key part of members' sensemaking and a means to allow them to supplement individual memories with institutional memory' (Boje, 1991: 106, bracketed is my 2007 definition amendment). In sum, my concept, systemicity, builds upon system thinking of Bakhtin, but takes it along the paradigm shift into complexity thinking (i.e. Morin) and into deeper aspects of reflexivity (e.g. Garfinkel, Shotter, and the eternal return-recursivity of Nietzsche's 1967 *Will to Power*).³

There may be a challenge made that Bakhtin has nothing to say about system or systemicity-complexity. Yet, I have found a good deal of Bakhtin's writing is not only relevant to systemicity of complexity theory, but is pioneering. For example, in Bakhtin (1981, *Dialogic Imagination*) four essays from his notebooks, begun in 1929–1930, supplemented with conclusions in 1973, but unpublished till after his death in 1975, is a section relating closed system theory to oral and textual stylistics:

2 Bakhtin (1981: 152) uses the term 'systematicalness' to denote unmerged parts, and unfinalized non-wholeness. I prefer my own term, 'systemicity.'

3 There is a piece of work that needs to be done, to look at the differences in what is reflexivity, and how Stein's (1935) recursive writing is a way to get at it, how that differs from Garfinkel's (1967) ethnomethodology, and work by Nietzsche (1967) on eternal return, and how this differs from Argyris and Schön's (1974) espoused-theory and theory-in-use. I used to have engineer-managers at Hughes Aircraft (when it existed) fill in the left column with what they said, and the right side with what they were thinking, but did not say. The differences were amazing. While Garfinkel (1967: 25–26. 38–39) does a left-right column it is I think more about a kind of reflexivity that bridges with Morin's (1996) theory of dialogical complexity.

[System theory has theorized] stylistics as if it were a hermetic and self-sufficient whole, one whose elements constitute a closed system presuming nothing beyond themselves, no other utterances. (1981: 273, bracket addition mine)

Bakhtin is therefore aware of closed systems thinking (before the term was popularized after the Second World War) and aware of the 'wholeness-illusion' quite early on. However, in his dialogisms, and within the chronotopes, in particular, properties, as with Boulding and Pondy, are set in accumulating hierarchic arrangement.⁴

In Table 1.1, the first column recovers some of the original labels of system thinking properties that Pondy morphed in the second column. Pondy dropped Boulding's transcendental word (9) altogether, reworded 'social organization' (8) into multi-cephalous, reworded image (6) into 'internal image' (the difference is image orchestration is image for others), substituted 'blueprint growth' for Boulding's 'plant' (5), and 'control' for 'thermostat' (3). The third column suggests at what hierarchic system thinking levels, Bakhtin's dialogisms are relatable. The last column in Table 1.1 combines Boulding's original concepts, retains Pondy's idea of yet undiscovered levels. In sum, Pondy (i.e., unspecified holographic multidimensionalist) changed the label and meaning of five of Boulding's nine concepts as summarized in Table 1.1 (numbers 9, 8, 5A, 4, and 3).

For example, Boulding's (1956: 205) highest systems level is called 'transcendental' but he worries that he will be accused of erecting 'Babel to the clouds.' Boulding reasoned that from the lowest to the highest order of systems complexity could be modeled in nine levels. From lowest to highest these are: frameworks, clockworks, thermostat, cell, plant, animal-image, human-symbolism, role in social organizations, and transcendental. Boulding views general systems thinking as trapped in various 'mysteries,' where 'up to now, whatever the future may hold, only God can make a tree' and even 'living systems' medicine hovers 'between magic and science' (1956: 206). But this is not the only transcendental aspect. The entire stack of nine systems levels, one atop the other, is a transcendental line, a Babel Tower of systems levels, a linear tower 'systems of systems' (p. 202). The very last line of his essay says it all: 'The skeleton must come out of the cupboard before its dry bones can live' (p. 208). His Babel Tower of Linearization of Hierarchic Order self-deconstructs pages

⁴ This may be an artifact of the way of writing, since for example in *Dialogic Imagination*, Bakhtin sets out the chronotopes in a kind of order by virtue of the chronology of their use in the novel. But in the stylistics and architectonics, those dialogisms are styles and discourse (respectively) without presumed hierarchy (leaving order in counterplay with disorder, as in heteroglossia.) Heteroglossia is the interplay of two spirals, one is counteracting (centripetal) and the other is amplifying disorder (centrifugal). That move by Bakhtin is what makes dialogism of language something to explore in terms of complexity theory of organization.

earlier: 'There may always be important theoretical concepts and constructs lying outside the systematic framework' (p. 202). Exactly!

Lou Pondy, my mentor in the University of Illinois PhD program was seduced by Boulding's linearization of a hierarchy of systems, and became, like me, trapped in its linear logic. Pondy ignored Boulding's transcendental model, and redefined several other levels, but stayed trapped in the Babel Tower. Pondy sees from this tower that there is some kind of difference between 'objective reality' and 'phenomenological' representation or 'socially constructed reality' (1979: 33) and that there is 'language-using, sense-making' by administrators skilled in 'creating and using metaphors... but also poetry' (p. 36). Pondy, however, does not see the limits of Boulding's general linearization, systems stacked upon systems into a Tower.

I think a story told outside the lines of narrative, of Lou Pondy's rejection letter, can introduce the paradigm shift underway from systems thinking to complexity thinking, from linearity to spirals. I was in Lou Pondy's office the day he opened his rejection letter from the editor of *Administrative Science Quarterly* (ASQ). It was 1976. He read parts aloud. I tried not to listen but I had to listen. He gave me the letter to read the rest. I tried not to read but I had to read. The editor wrote that while 'interesting' the article was too rooted in the 'cute school of organization.' Each word 'cute,' 'interesting,' and every 'etcetera' and every 'space' between-the-lines, meant so very much more.

There are *reflexivities-to-fill-in-gaps-in-between-these-lines*: Lou was the Associate Editor of *ASQ Journal*. Lou had published there before. Most of the board of editors had come to the University of Illinois, where Lou is department head of organizational behavior, and went to conferences on symbolism and radical organization theory. There was *prospective-antenarrating-going-on*: Lou and I were revising a paper (Pondy and Boje, 1980) called 'Bringing Mind Back In', a positioning of social definitionism (our terms for social constructivism) in relation to other paradigms of sociology (social factist), and psychology (social behaviorist). My work on 'Bringing Mind Back In' would lead me, step-by-step, to choose qualitative studies over quantitative studies, to publish both kinds in the venerated ASQ (Boje and Whetten, 1981; Dewar et al., 1980; Boje, 1991).

More filling-in-the-blanks, more acts of spiraling reflexivity: 'What was cute about it?' Lou, a former physics major, had adapted noted economist, Kenneth Boulding's (1956) hierarchy-complexity model that says there are nine levels of systems complexity. And in the now, I have an emotive-ethical question: who or what is answerable, because Lou, with tears welling in his eyes, rages, and painfully could not believe his masterpiece had been dismissed, not even sent out for formal review (and that is something I do now for journals I edit). 'Going beyond open systems thinking... is not cute!' Lou says, as I am turning Lou's voice down, giving him some space, and turning up some voices in my head, deeply listening to inside my head and to the drama of Lou in his office (Steiner, 1935 talks about how we tell and listen at the same time). I tuned in, in spirals of reflexivity, to what we were doing in Lou's organization design class, to my marriage, to the

reason I was in Lou's office, and then it dawned on me (see Garfinkel, 1967; Shotter, 1993).

Pondy saw immediately that Boulding's level 4 (cell) was open systems thinking (the interplay of variety-order-control and variety-disorder-amplification), and that the upper levels (especially 6 to 9), were all about the use of language in everyday practical social interactions. Pondy and Boulding saw that Ludwig von Bertalanffy's (1956) *General System Theory* had overlooked non-physic-biological ways in various complexity language-properties such as image, symbolism, social organization (networks of discourse), and transcendental (that as I said Lou dismissed). Unfortunately, Pondy, like Boulding, chose an overly simplistic language model, the *information processing* (sender-message-receiver-feedback loop) model of Shannon and Weaver (1949), and then the Chomsky grammar model. There is no reflexivity there, nor is there transcendental. Both models assume one-logic (mono-logic) thinking about systems. They do not account for ways fragments of experience are recounted socially throughout organizations. Systems thinking ignores how the ways of sensemaking we looked at in the last chapter (Introduction) interact in self-organizing complexity without being hierarchically ordered. Pondy and I had become bystanders, systems theorists who stood outside as omniscient narrators, looking in.

Cooper (1989) castigated Pondy for continuing to use information processing models that were overly simplistic. Cooper explored a Derridian communication model which has the trace, the intertextual, and ways to deconstruct one text, showing its outcropping in many other texts (a kind of reflexivity). Cooper missed Pondy's (1978) attempt to move out of information processing language models, for example adopting Chomsky's language-grammar model in a paper titled 'Leadership is a language game.' In this paper was not only the ordering effect of Chomsky grammar, but the disorder of the language games of Wittgenstein. I go beyond it because 'systems thinking' ignores not just language, but also story and narrative.

I prospected (several antenarratives); I was going to get letters like this. I had to learn to deal with rejection, since I would likely get my fair share, or more. It is now 30 years later. I am getting acceptance and rejection letters, teaching a systems/complexity theory class, exploring and changing Lou's model for making language part of systems thinking to get deeper into reflexivity in what I call 'the zone of complexity' that is deep within, and the transcendental (the really spiritual, more cosmic sphere). I have worked out a storyteller's way to fulfill my mentor's dream, to go beyond, to transcend open systems thinking, to even bring in transcendence that Boulding talked of as the highest level, whereas Lou had tossed it out of his narrative. I go beyond it because 'systems thinking' does ignore, not just language, but story, and narrative.

At the time, in the late 1970s, Pondy had us read Robert Pirsig's (1974) *Zen and the Art of Motorcycle Maintenance*. We thought we were escaping hierarchy, noticing something different was going on. Pirsig argues that there is an 'a priori' motorcycle: 'The sense data confirm it but the sense data aren't it' (p. 128). But this Kantian move by Pirsig, this a priori transcendental has its own fixed hierarchy:

'What we think of as reality is a continuous synthesis of elements from a fixed hierarchy of a priori concepts and the ever changing data of the senses' (Pirsig, 1974: 26). As a Harley (after market) builder and rider, I can appreciate that the a priori motorcycle is continually changing; the vibrations alone throw out bolts, loosen wires, send cracks through the paint and metal. I think what Boulding, Pondy, and Pirsig have missed is that the hierarchies of systems are as Pirsig (1974: 121) puts it 'hierarchies of thought.' Pirsig's narrative of systems of hierarchic order, his linearization tries to escape the Babel Tower with some lateral thinking:

Lateral knowledge is knowledge that's from a wholly unexpected direction, from a direction that's not even understood as a direction until the knowledge forces itself upon one. (Pirsig, 1974: 114–15)

Pirsig is almost aware of the Babel Tower, that these tower levels and shapes are 'all out of someone's mind' (p. 95). It's the stories that are prospective and lateral ways to find one's way out of someone's mental hierarchies of logic. But Pirsig is not consistent: at points a motorcycle is ideas and concepts, 'systematic patterns of thought' and on the same page 'a motorcycle is a system. A *real* system' (p. 94).

Michael Polanyi (1966) has yet to be compared by scholars of organization to Boulding or Pondy, or to Pirsig. Polanyi reviews systems in neuroscience, Gestalt psychology, physics, chemistry, engineering, and linguistics. At first, it looks as though tacit knowing is just a matter of a process of subception (1966: 15), something rooted in cognitive neuroscience, and in a footnote it can be easily confused with sense-making: 'Our tacit knowing of a process will make sense of it in terms of an experience we are attending' (footnote, p. 15). But most reviewers skip the more transcendental metaphysics in Polanyi, tidying up not only tacit knowing but also emergence. Like Boulding, Pondy, and Pirsig, Polanyi is all about linearization, and making a 'tacit framework' for our 'moral acts and judgments' (Polanyi, 1966: 17). For Polanyi the engineer's understanding and comprehension of a machine is deeper than that of the physicist, and since the biologist tends to sentient matters, their understanding is at a higher level than the chemist-physicist-engineer, and since language is so important, those who comprehend language are at a much higher level, and since the universe is ordered, there is some moral sensemaking at the top of his Babel Tower.

Like Boulding and Pirsig, Polanyi sees much mystery in tacit knowing, in thought forms indispensable to explicit knowledge, such that any project that would eliminate tacitness would be 'fundamentally misleading and a possible source of devastating fallacies' (p. 20). But, let's inquire further. What is his transcendental onto-theocracy? It is rooted in Plato's theory of anamnesis (*Meno*), as Polanyi (1966/1983: 22) puts it 'all discovery is a remembering of past lives.' Instead of knowledge just acquired through the senses, in acts of sensemaking, tacit knowing is a recollection of memory of past lives, what Polanyi calls a 'tacit foreknowledge of yet undiscovered things' (p. 23), or 'foreknowledge which guides scientists to discovery' (p. 33) is defined as the 'tacit act of comprehending'

(p. 33). It's as if tacit knowing is taken right out of Plato's (1957: 27–28) *Theory of Knowledge*: 'all learning is the recovery of latent knowledge always possessed by the immortal soul.'

What of emergence? For Polanyi (1966: 35), the 'universe [is] filled with strata of realities' and as with Boulding, Pondy, and Pirsig, with 'higher and lower strata' all 'forming a hierarchy.' As with the others, at each level there is a principle of control that we can see in some great hierarchy of comprehension (p. 36). And not only chemistry, physics, engineering, and biology, but speech acts get ordered into his Babel Tower: 'hierarchy constituting speechmaking' (p. 40) where 'successive working principles control the boundary left indeterminate on the next lower level' and 'each lower level imposes restrictions on the one above it' (p. 41). For example in speech acts, without the hierarchy of control, 'words are drowned in a flow of random sounds, sentences in a series of random words, and so on' (p. 41). We finally arrive at emergence as a totalization of levels, as an elevator in the Babel Tower: 'but the hierarchic structure of the higher forms of life necessitates the assumption of further processes of emergence' (pp. 44–55).

Thus the logical structure of the hierarchy implies that a higher level can come into existence only through a process not manifest in the lower level, a process which thus qualifies as an emergence. (Polanyi, 1966: 45)

... Tacit knowing [is] ... seen to be the relation between two levels of reality, the higher one controlling the marginal conditions left indeterminate by principles governing the lower one... Such levels were then stacked on top of each other to form a hierarchy, and this stacking opened up a panorama of stratified living beings. (Polanyi, 1966/83: 55)

The rhetoric is seductive. Hold on! We almost fell into the same hierarchic-ordering trap that caught Boulding and Pondy! Table 1.1 is way too ordered hierarchically. The 'whole' 'levels' theory is the trap of hierarchic ordering of systems thinking.

For example, Figure 1.1 explores how Boulding's complexities would fit with Bakhtin's dialogisms in a hierarchic-linearization model, the Babel Tower turned into Inverted Pyramid. Boulding theorized nine hierarchic levels of accumulating complexity properties and delineated five master metaphors holding back systems thinking (frame, machine, thermostat, cell and plant). Bakhtin's oeuvre theorized four hierarchically ordered dialogisms, each more complex than the next: polyphonic, stylistic, chronotopic, and architectonic. I fell deep into the hierarchy trap in Figure 1.2, by making Boulding/Pondy/Pirsig/Polanyi and Bakhtin's hierarchic-levels models *seem* combinable, and stackable-strata. The trap is of course the linearization assumption, that effects of properties at each higher level are cumulative, not successive. You do not just stop having mechanistic systems when you become open. For example, Level 4 (open) is theorized to exhibit properties 1, 2, 3, and 4. Unlike duality models (e.g. open–closed, mechanistic–organic), properties after level 1 do not displace the lesser complexities. Similarly, with Bakhtin, you do not just stop polyphony when you enter chronotopicity. In Figure 1.2, I

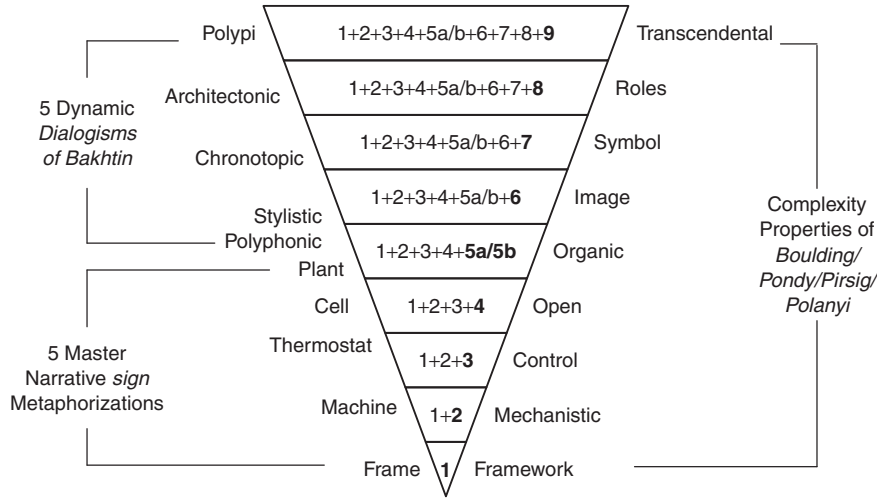


FIGURE 1.2 Combined hierarchic-complexity models of Boulding and Bakhtin⁵

split Boulding’s level 5 into 5A and 5B to accommodate Bakhtin’s polyphonic dialogism. However, there are major flaws in doing hierarchy modeling.

The problem is how to theorize dialogisms in relation to complexity properties, without falling into the trap of hierarchic systems thinking. There is some kind of Heisenberg observer-effect, a linguistic erection of linearization, a Babel Tower with systems stacked atop one another that seems to me to be highly arbitrary. Each level, be it framework or clockworks is someone’s lexicon, someone’s grab bag of words to comprehend it.

Back to the past! Something went wrong that day! Boulding, Pondy, Pirsig, Polanyi, and I got hopelessly trapped for decades in *system’s thinking*, in the logic of order that drives out disorder to erect the Babel Tower. I was a prisoner of the systems thinking tower, its doctrine from 1976 (the event of Lou’s rejection) to 2006 (when I began to move away from systems thinking). I ran from the Babel Tower and began to think of complexity spirals, somehow interlocking with all the rejections I had faced, was facing, and would likely face.

In the next section, we examine how to escape the hierarchic-order trap of systems theory.

OUT OF THE SYSTEM THINKING TRAP

I feel like I have discovered the location of the Holy Grail. Just this week (September 2007), in doing some rewriting of this chapter, I came across the work

⁵ My thanks to Yue Cai (2006) for redrawing my original model, and granting permission to use her more stylized graphic here.

of Edgar Morin (buried in a teaching material box, in a folder I have been meaning to read for the past eight years). Low and behold, Morin and Bakhtin are both using the word *dialogic*, but defining it differently.

Edgar Morin (1992) came up with a dialogic principle to facilitate the paradigm shift from system to complexity thinking. He defined it as the “dialogical” relationship... between order, disorder and organization’ that is ‘antagonistic, concurrent and complementary’ (Morin, 1996: 11).

Mikhail Bakhtin defines several types of dialogisms: polyphonic, stylistic, chronotopic, and architectonic. These are developed more fully in the next chapter. I will only point out that both Morin and Bakhtin made language their primary focus.

Besides the dialogic of order/disorder/organization, Morin (1996: 14) in two sentences specifies a way out of hierarchic order, to let the properties of what I call systemicity interact without the presumption of hierarchy:

The ‘hologrammatic’ principle highlights the apparent paradox of certain systems where not only is the part present in the whole, but the whole is present in the part: the totality of the genetic heritage is present in each individual cell. In the same way, the individual is part of society but society is present in every individual, through his or her language, culture and standards.

The flaw of hierarchic systems thinking can be overcome by looking at holographic combinations of complexity. If we apply Morin’s dialogic and holographic properties together, we can see that complexity properties, and dialogisms, may or may not be hierarchic to one another.

Morin, like Bakhtin treats language as the motor of complexity. For Bakhtin, it is the heteroglossia of language, the opposition of centripetal (centering spiral of order) and centrifugal (decentering spiral of disorder) forces of language (see Figure 1.1, above). For Morin the speech acts are dialogic in social activities of order/disorder/organization.

In sum, Edgar Morin (1977, 1992, 1996) proposes three properties of complexity: dialogical, hologrammatic, and recursivity.

- 1 **Dialogical** Dialogical is the interplay of order, disorder, and organization that is antagonistic, concurrent, and complementary (Morin, 1996: 11). Like Pondy and Boulding, Morin wants to go beyond open system thinking, and its predecessor, von Bertalanffy’s General Systems Theory ‘Moreover, General System Theory, which is founded solely on the notion of the open system, is wholly insufficient when applied to living or social systems’ (Morin, 1992: 382). The dialogical property of complexity comes from the work of Henri Atlan, and not (as far as I know) from Bakhtin. As Morin (1996: 13) explains: ‘At the birth of the universe there was an order/disorder/organization dialogic triggered off by calorific turbulence (discord) in which, under certain conditions (random encounters) organizing principles made possible the creation of nuclei atoms, galaxies

and stars.' It is the dialogic (order/disorder/organization) that auto-produces self-organization in the physical, biological, and human worlds. We can apply dialogism to Storytelling Organizations, where past-looking narrative histories, founding narratives and future-looking strategy stories are retrospectively prospectively sensemaking (see Introduction).

- 2 **Hologrammatic** As in laser photography, the whole is present in the part (i.e. the photo embeds multiple perspectives). The Hologrammatic Principle is where the *dynamics of the whole are present in the part*, as in laser photography. Holography allows complexity properties to be non-hierarchical. Holography is implicated in processes of complexity beyond mere open system thinking and is what I call '*systemicity*' thinking. I want to suggest that eight sensemaking registries are holographic, rather than hierarchic to one another. In holography various lenses combine to consummate dimensions without presuming hierarchic ordering. Eight ways of storytelling sensemaking constitute an octagonal holographic holography. Each sensemaking registry has its tragic flaw (see Introduction for these). Each of the sensemaking ways can become a way to control social interaction.
- 3 **Recursion** Recursivity is a 'dynamic and generative feedback loop' between whole and parts where 'order and disorder, observer and observed' (Morin, 1992: 371) are situated. The Recursion principle moves beyond open system theory's opposition of feedback-regulatory loop and feedback-amplification loop by situating a self-organization (generative) loop. An example of recursion is narrating and storytelling shapes systemicity, and systemicity shapes narrative-story.

Systems theory, trapped in cybernetics, narrated a view of organization that privileged order over disorder, thereby obscuring emergence, self-organization, and especially the language games of narrative-story that constitutes phenomenal complexity in dialogic/holographic/recursion. Complexity theory paradigm allows for reflexivity-transcendence, as well as retrospective-prospective sensemaking.

It's time to move from hierarchic systems thinking to holographic complexity thinking. To get at the holographic nature of story emergence in systemicity complexity we need to define emergence more carefully.

What is Story Emergence in Complexity?

Jeffrey Goldstein (1999) reviews how G. H. Lewes first used *emergence* over a century ago. In the 1920s the word combined with evolution, 'emergent evolutionism' (Goldstein, 1999: 53), and did not define the process of emergence. With the advent of complexity theory, emergence took on many new meanings (Langton, 1990; Lewin, 1993; Waldrop, 1993; Kauffman, 1996; Holland, 1998; Goldstein, 1999; Stacey, 2006, to name a few). Ralph Stacey (1996: 287) defines it this way:

Emergence is the production of global patterns of behavior by agents in a complex system interacting according to their own local rules of behavior, without intending the global patterns of behavior that come about. In

emergence, global patterns cannot be predicted from the local rules of behavior that produce them. To put it another way, global patterns cannot be reduced to individual behavior.

I think it's important to point out an alternative definition to the way Polanyi, and Stacey are defining emergence. For Foucault (1977b: 148–9) emergence is the 'moment of arising ... always produced through a particular stage of forces ... or against adverse circumstances.'

It will also help to define qualities of emergent stories. I theorize at least five: *authenticity*, *contagion*, *institutional support*, *entertainment value*, and *cultural force*. Most emergent stories lack the quality of authenticity, where they are believable beyond those present. Most also lack the quality of contagion, where gossip jumps to outsiders to become rumor (Lang and Lang, 1961). Most emergent stories lack the quality institutional support to where they become legend. A few have entertainment value.

In and between *Storytelling Organizations*, at least eight ways of sensemaking intertwine to constitute a systemicity that is more complex than just an 'information-processing network' approach so prevalent in system thinking (Boje, 1991: 107).

My reference to emergent story (dispersion) in relation to control narrative (centering) is in its more dialogical manner than a mere information processing model. Storytelling complexity does not obey hierarchic order. What Boulding proposed and Pondy embraced, is a narrative teleology. The wrong step was to miss the fact that people in everyday life narrate in ways that are out of control. They mix a level 1 framework with say a level 9 transcendental, while skipping the intermediate levels (e.g. 2). Out of intense simplicities, intense complexity can emerge. And vice versa, as Winston Churchill once said, 'out of intense complexities intense simplicities emerge.'⁶ There is this unity of consciousness in hierarchic-systemicity theories, a narrative control reduction of the Polanyi dialogic manner of storytelling complexity and simplicity.

My contribution is to integrate Boulding and Pondy with Bakhtin, but without hierarchic thinking, to launch what we call the 'Third Cybernetics Revolution' (Boje and Baskin, 2005). First cybernetic is control by deviation-counteraction feedback loops; second cybernetic adds to first cybernetic, the open systems complexity property of deviation-amplification (requisite variety making to organize environmental complexity). To get beyond open systems is to invoke the third cybernetic revolution of jettisoning dualities, hierarchies, and especially levels. This brings us to holography.

In this next table (Table 1.2), I give the integration of Boulding, Pondy, and Bakhtin some storytelling sensemaking flesh, in an integration of storytelling sensemaking registries and systemicity complexity thinking.

⁶ This is an often cited remark. See Churchill Quotes web, http://www3.thinkexist.com/quotation/out_of_intense_complexities_intense_simplicities/15826.html

TABLE 1.2 *Sensemaking registries of systemicity storytelling complexity*

Antennarratives	That emergent story has not escaped narrative prison is missing from Boulding/Pondy. Narrative police are still trying to arrest emergent story and antennarratives, as always. Small antennarratives (bet and before fragments that aspire to narrative coherence) can transform a calcified image narrative.
BME Retrospection	Retrospective sensemaking with BME (beginning, middle and end) progressive sequencing is missing from Boulding/Pondy.
Emotive–Ethical	Emotion sensemaking can convey an ethical urgency, a sense of what Bakhtin calls answerability of the teller to tell a story of oppression or the listener to act to bring about social change. Answerability is also part of architectonics, but not conceived as emotive reflexivity.
Fragmentation Retrospection	No whole stories, just fragments told in ongoing discourse are missing from Boulding/Pondy.
Horsesense	Horsesense is Rosile's term for describing how one body registers the sensemaking of another's body. Embodied sensemaking is not part of Boulding/Pondy's modeling of complexity properties.
I–We, Sameness–Other, Transcendental, and Hegelian Dialectics	Dialectics is missing from Boulding/Pondy. ⁷ In Mead there is self-reflexive awareness. In Ricoeur is the Sameness–Other dialectic of narrative identities. In Kant transcendental reason and aesthetics are reflexivities a priori to retrospection of BME or fragmentation sensemaking. For Hegel, antithesis and thesis oppose each other. Horkheimer and Adorno dispute if some kind of synthesis results.
Polypti	Dialogisms of polyphonic, stylistic, chronotopic, and architectonic that invite reflexivity commingle with what Boulding calls image, symbol, social network. Boulding misses the polyphonic. <ul style="list-style-type: none"> • Polyphonic is fully embodied voices, not in hierarchy. They fully engage and debate one another, including author's voice. • Stylistic is juxtaposition of visual, oral, and textual ways. In managerialism there is telling through <i>image orchestration</i> to make it appear debate or dialogism is happening. • Chronotopic is interplay of pluralized ways of conceiving space–time in the symbolism, reflexive, retrospective history, and prospective teleology of storytelling organizations. • Architectonic dialogism is the interanimation of cognitive, ethical, and aesthetic discourses in social and societal discourses that prescribe and co-produce roles.
Tamara	Boulding/Pondy ignore the context of sensemaking. Sensemaking ways are contextualized in the physicality of space–time, in the impossibility of people being everywhere at once to hear all the simultaneous storytelling going on. The reflexivity on what went on in rooms you are not in is never-ending.
? Sensemaking registries not yet discovered	Pondy (1976: 2a) holds with 'systems of unspecified complexity,' that is, what other sensemaking registries might be in interplay with storytelling complexity and systemicity.

⁷ In his last paper, which I had published in a special tribute issue of *Journal of Organizational Change Management* to Lou Pondy, he reflects upon how the Boulding model is too much about harmony and ignores social conflict (Pondy, 1989).

Next, I develop the holography theory which I will apply to an early study I did of storytelling systemicity.

HOLOGRAPHY THEORY AND COMPLEXITY THINKING

Instead of hierarchy, I seek a more holographic understanding, where all complexity properties may be refracted in any of the other ones. *Holographic inquiry* is defined as interrelationships of storytelling-sensemaking and complexity-properties in any order, with from 1 to 13 or more dimensions (facets) reflecting one another. It is concerned with the interactivity of hierarchic as well as dialogic systemicity complexity with storytelling. 'Gon' is the root-word of each of the dimensions, and means 'angle.' I mean it more in the 'agonic' sense as *does not have a bent or angle or an 'end.'* Agonic is therefore opposite of 'gon' and means not an angle, but all the 'agons' from digon to tridecagon, and beyond. For example, the 'E' in BME is an 'End' that can drive people to an imposition of values (ends). In short, the connotation of the 'gons' is double meaning with 'agons' (without an end-value). What is holographic, is that pick up any one 'agon' and you see the refractions of the other dimension lenses. To date, the interactivity of various complexity properties has not been theorized or studied empirically. My adjusted interactive holographic model is presented in Figure 1.3. I purposely put them out of clockwise hierarchic ordering.

This holographic model exhibits the interactivity of properties of systemicity-complexity, including emotive-ethic, fragmentation, antenarrative, and Tamara that were left out of the Boulding/Pondy system thinking model (see Introduction and Table 1.2 above).

TABLE 1.3 Holographic complexity chart

Monogon	– 1 dimension
Digon	– 2 dimensions
Trigon	– 3 dimensions
Tetragon	– 4 dimensions
Pentagon	– 5 dimensions
Hexagon	– 6 dimensions
Septagon	– 7 dimensions
Octagon	– 8 dimensions
Nonagon	– 9 dimensions
Decagon	– 10 dimensions
Hendecagon	– 11 dimensions
Dodecagon	– 12 dimensions
Tridecagon	– 13 dimensions

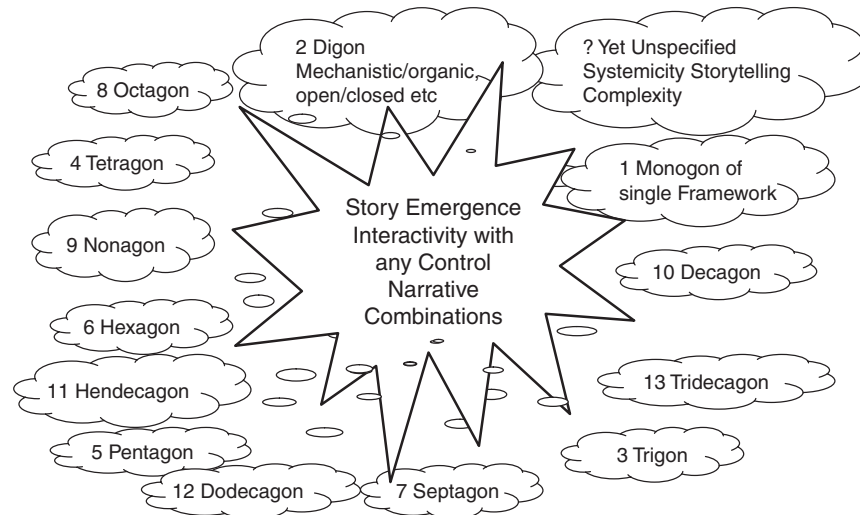


FIGURE 1.3 Holographic systemicity complexities

We know nothing of the combined interactive effects of different combinations of holographic dimensions and about their reflexivity in Storytelling Organizations. Yet, it is these combined effects at triadic, quadratic, and more complex groupings that produce what I am calling *reflexivity-transcendental sensemaking* that is beyond retrospective-prospective-sensemaking.⁸ With each combination beyond dyadic, from triadic to tridecagon (should we be able to imagine such complexity), the interactions produce dialogic relations among control narratives, systemicity complexity, and emergent stories. Without a theory of holographic complexity, we cannot sufficiently appreciate the dynamics of at least the eight (octagonal) sensemaking ways. We remain trapped in monogon, digon (dualities), or at best trigon (hierarchical) system thinking.

To summarize, my thesis is that in contemporary times, Storytelling Organization complexity exhibits highly interactive properties of storytelling systemicity complexity in holography that is not always about hierarchy. Most narrative research is stuck at BME linear sensemaking and hierarchy thinking. Theories of systemicity complexity are stuck at Boulding/Pondy's first four hierarchical levels, and are blind to storytelling emergence because the information processing model of communication is not sufficiently robust and holographic, and does not deal with interactivity of non-hierarchical relationships with hierarchical ones. Holographic storytelling can run from one dimension (monogon) to multiple

⁸ Refer back to the Introduction, to Figure 1, and the temporality is retrospective-prospective, but there is the other zone of complexity in sensemaking that is all about reflexivity-transcendental.

complexity property interrelationships, from two dimensions (digon) to many more complexity dimensionality up through tridecagon (13 dimensions and beyond). Storytelling is *holographic* in the sense that it can interrelate more than one complexity property.

Next I elaborate on how holographic systemicity-complexity properties are relevant to various organizations that I have studied.

STORYTELLING ORGANIZATION SYSTEMICITY

One of my earliest empirical investigations of the Storytelling Organization theory was the Gold Office Supply study (Boje, 1991). I transcribed over 100 hours of tape and video recordings of talk, week-by-week, over an eight-month period. This was accompanied by participant observer field notes and by document analysis. I retheorize the study from ordinal, hierarchic to dialogic associations of storytelling complexity properties. I did not find BME retrospective narrative sensemaking as prominent as the literature then (and since) suggested. What I did observe at Gold was the inextricably intertwined relation of highly fragmented (tersely told) narrative sensemaking and the ever changing and rearranging dynamic complexity of 'systemicity.' That is, to interpret the transcript required months of participant observation, hundreds of hours of transcription, and investigation of what words, phrases, and stuff left out meant to them, and to me.

My position that a dialogical story is not just the lines of the narrative retelling, but the silences between the lines, and what the hearer is filling in in-between-the-lines is a source of controversy in narrative studies. In *Gold Office Supply*, I found that a phrase as short as 'you know the story' (lines 1163-4) or even a nod, could indicate I was to fill in the blanks.

How do other narrative scholars interpret Gold? Yiannis Gabriel (2000: 20) argues that my terse telling does not meet his BME stricture of what is a *proper* story, that I sacrifice what makes a story a story in order to explore systemicity. Barbara Czarniawska (1997, 1998) once thought only BME defined *proper* story, but her 2004 book picks up on the fragmented, high interruption, code-nature of telling I studied. For me, storytelling is to systemicity what precedent cases are to the courts. In a courtroom, various stakeholders perform sense-making narratives and stories to cope with the equivocal situation of inquiry into the many sides of tellings told by defense and prosecution witnesses. Accounts of eyewitnesses often do not agree, and may also disagree with forensic accounts.

Storytelling and antenarrative trajectories pass through the event horizons of space-time stitching together, weaving together many agons.

Next, I work out holographic theory using examples from *Gold Office Supply* study.

Monogonic thinking

Systemicity-complexity is an improvement system writing, which presumes 'monogon.' Monogon is defined as monologic, monovocality, and mono-linguagedness of one-dimensional system theory. With monogon (one) dimension thinking, there is this reductionism:

Every correct judgment corresponds to a particular unified systematic-monological context, rather than being attached to a personality. (Bakhtin, 1973: 65)

The implication is that our personalities live and work, in a 'plurality of consciousnesses' that is multi-dialogic (Bakhtin, 1973: 65). Yet, from monogon to tridecagon, and beyond, it's always about some kind of control of one sensemaking against many others. For Bakhtin (1973: 12) 'narrative genres are always enclosed in a solid and unshakable monological framework.' Coherence narrative posits mono-system-wholeness, mergedness, and finalizedness. The single observer posits unitary mono event horizon wholeness with one complexity property. Heisenberg's *Uncertainty Principle* applies here. Even the monogonic observer is an intrusion to systemicity, altering the event horizon.

In the Gold study, there are several monogonic frames, the conglomerate, the sales culture, and the mechanistic enterprise. Each tries, like some kind of black hole, to absorb everything into itself. Mechanistic narrative, for example, imprisons Gold in linear storytelling of a BME plot of coherence, and a resolute belief in whole-system, with merged part-relations predetermined by the conglomerate, by Doug's mechanistic and control training, or by reversion to Billy Gold's feudal sales culture.

A story can be more than backward-looking BME or fragmentation retrospection. It can convey a forward-looking prediction of future organizational behavior. What is interesting is that most of the telling is left unstated in the terse telling. Besides trailing people around in most every situation taping their talk in their work situation, my colleague and I conducted a vendors' focus group. It becomes obvious to those in the next room, that vendors are also aware that Gold is 'a ship without a rudder right now and I think it concerns their salespeople as well' (362-4). What is being tersely told is expounded upon by Doug and his upper echelon after the event. There is terror. What if the sales people are about to jump ship for some other office supply company? It has happened before to Gold, and the really devastating prediction is once again they will take the most valuable customers with them.

CEO Turnover Story by Vendors

Dan: Yeah, my boss will call from	337
We're based out of the Northwest and	338
he'll say 'Well Dan who is running the	339

ship at Gold now?' He can see a	340
lot of the proposals that we've	341
presented and were accepted six months	342
ago still in effect because there's	343
been turnover[***]	344
You know is the next administration	356
going to come in and make changes to	357
that? One point that Jeff made	358
earlier that I want to touch on is our	359
concerns are shared with their	360
salespeople. They definitely know	361
sometimes that they're kind of a ship	362
without a rudder right now and I think	363
it concerns their salespeople as well	364

Relationships with vendors and contract customers, as the animated discussion following each focus group reveals, constitutes an important interorganizational systemicity for Gold, but reading the dynamics requires lots of fieldwork to understand context of textuality, orality, and visuality that is in interplay in the moment of Being.

Gold's history is propaganda generated by the powerful conglomerate, and each CEO agent, to control the sales force, vendors, and customers. Such narrative frameworks of monogonic, simplistic, monologic, complexity have been unchallenged since Aristotle's (350 BCE) *Poetics*. Yet, even Aristotle complicated the frameworks. Narratology remains blind to Aristotle's extra-narrative framework categories, 'epic-story' and 'history.' Epics are longer, more complex than narratives, with more characters, and shifting dramatic personae, yet it is still an imitation. History 'has to deal not with one action, but with one period or all that happened in that to one or more persons, however disconnected the several events may have been' (Aristotle, 350 BCE: 1459a, #21: 256). As in simple narrative, and epic stories, the whole of the *living story* is not performed, only a portion, a simple or complex plot of a few characters and incidents, a narrative telling to give the desired cathartic effect (pity, fear, authenticity, believability).

Digon holography

Digon inquiry explores dualities, such as closed–open, mechanistic–organic, male–female, emotive–rational, etc. For example, in Gold Office Supply, at the digonic two-dimensionality, one monogon polarity is hierarchic to some other one.

Storytelling organizations, such as Gold, can be analyzed according to the distribution and frequency of various framework types that are in digonic relations.

In recent work, we have mapped the relationship between fragmented narrative tellings and the more epic stories of Enron Corporation (Boje and Rosile, 2003a). In Gold, the sales culture framework is being opposed by the conglomerate's demands for a more professionally bureaucratic framework.

The story was not found to be a highly agreed-upon text, told from beginning to end, as it has been studied in most prior story research. Rather, the stories were dynamic, varied by context, and were sometimes terse, requiring the hearer to fill in silently major chunks of story line, context, and implication. Stories were frequently challenged, reinterpreted, and revised by the hearers as they unfolded in conversation. (Boje, 1991: 106, boldness mine)

Founding story tersely told In over hundred hours of taped talk, this was the most complete rendition of a BME organization story. Refer to the Introduction for the example of how tersely told is the Goldco founding story. More frequently, bits and pieces of narrative fragments were shared and the listeners were left to fill in the blanks, based on their knowledge of stories behind the tersely told fragments. Much of the story being told is not actually uttered. There is no whole story, and even in this rendition, Doug is tilting the telling to make his point – 'nice toy' 'fun,' and 'we don't have the luxury of screwing around.' Listeners around this meeting of Doug, several managers, and myself, are expected to know the details, to read what is in-between-the-lines. Doug is steering Sam's telling, fitting it to other instances when Gold had picked up a division or entered new territory, on a whim. This storytelling is intertextual to many other storytellings people are expected to know. The story left implicit (in-between-the-lines, in what is oral or written), is embedded in a systemicity of eight, and like more, sensemaking currencies. For example, a conglomerate owns Gold, and is about to sell Gold with a Midwest and an eastern office supply company. They need the numbers to look right for investors.

What was ethical in the sales culture is now unethical in a bureaucratic frame. It's the story of Weber's bureaucracy in context with feudalistic nepotism, and charismatic sales frame. The fact that ethics is at issue in frameworks speaks to the need to develop a more holographic model of complexity. The problem for the dyadic holographic of any two frameworks, such as the salesperson and bureaucratic culture, is that they easily become a duality, rather than a conjunctive relationship.

Over the eras, epic story has gotten shorter, since the attention spans of audiences no longer span a month or weeks or days to tell an epic. Epic story is 'made up of a plurality of actions' including simultaneous episodes of diverse kinds, but is not as nuanced as history (Aristotle, 350BCE: 1462b, # 7: 265). Now epic can be told in 90 minutes or split into a series of narrative-episodes, told one by one. The whole concept of simultaneous telling in an outdoor festival, as in Aristotle's day, is now unthinkable.

Mechanistic–organic duality has a long history in *digon* system thinking. For example, Thomas Hobbes (1958: 180–1, caps in original) wrote *Leviathan* in 1651 as mechanistic system that dominated over the organic: ‘And first of systems, which resemble the similar parts or muscles of a body natural. By SYSTEMS, I understand any numbers of men joined in one interest or one business.’ The *Leviathan* was the Commonwealth or State, which Hobbes (1958: 23) describes as ‘an artificial man, though of greater stature and strength than the natural... in which the sovereignty is an artificial soul, as giving life and motion to the whole body’ with nerves and motion, and ‘having an artificial reason.’

Narratives are stereotyped, and are not only typed and counted, their machine-like movements are tracked across space–time. This is a technical (clockwork) sensation of time being narrated, within the limits of linear plot-lines. Humans imitate the machine, repeating highly scripted behavior, to behave as *Leviathan* cogs with artificial souls. Leaders mimic clockwork-machine masters, and everyone else is a clock-slave. Machine temporality is only one possibility, but others such as biological or historic time, can only be interpolated into machine temporality, into linear plot-sequence.

Trigon

Trigon interrelationships of three complexity properties can be enacted with or without hierarchy. For example, one of Gold’s trigons is frameworks, chronotopes, and architectonic combinations.

Boulding (1956) specifies ‘social organization’ complexity, as an awareness of roles – there is not compliance, the square peg does not fit neatly in a round ‘hole’ identity construction. Architectonic interanimation of cognitive, ethical, and aesthetic discourses, of which story is domain (with metaphor and trope) is manifest, as the organization adapts to societal discourse, and actively shapes it. Metaphorization is mimicry. Boulding does not say that complexity properties of mimicking framework, mechanistic, control, open, organic, etc. have vacated discourse.

Contesting frameworks (sales, conglomerate, etc.) interact with various Bakhtinian chronotopes (romantic, chivalric, biographical adventure, etc.), as well as with architectonics (ethical-answerability, cognitive frames, and aesthetic discourses) constructing trigon complexities. We can relate a number of chronotopes that expand narrative types, to interaction with frameworks and architectonics.

Architectonics was first only a cognitive project by Kant (1781/1900: 466): ‘By the term *Architectonic* I mean the art of constructing a system... Reason cannot permit our knowledge to remain in an unconnected and rhapsodistic state, but requires that the sum of our cognitions should constitute a system.’ Bakhtin (1990) preferred the term ‘consummation’ to construction, and was careful to not assume a monophonic, monologic, or mono-languaged system (rather he preferred to look at the unmergedness, the unfinalizability of system, or what I defined above as *systemicity*). Bakhtin added ethical and aesthetic discourse to Kant’s cognitive architectonic. Ethics here is not ethics of conceptions of beauty,

but the very notion of answerability. Ethics is interanimated by cognitive and aesthetic discourse (of which story is a domain). Bakhtin (1981, 1990) posits what I will call an A-B-C-D model of storytelling, and its more architectonic dialogism:

- A – Who are the authors consummating the systemicity?
- B – Who are the beholders of the systemicity?
- C – Who are the characters in the scripted systemicity?
- D – Who are the directors of the storytelling systemicity being consummated?

Romantic narrative, for example, is an adventure-time chronotope that begins with a ‘flare-up’ (Bakhtin, 1981: 81) happening to some hero or heroine, and by the end of the plot, they make a successful overcoming of initial obstacles, where relationships are tested, but not broken. One obstacle for Doug is the old salesperson’s culture of nepotism. Greek romance is the earliest of the chronotopes, one that dominated narrative writing for centuries, and is still a way in which organization tales are told. Doug in the Gold study is such an adventure hero. He becomes the ‘savior’ figure, able to protect Gold from the conglomerate monster. In the Greek romance adventure chronotope there is no biographical maturation, no transformation of the basic character. Billy Gold remains as he always was, and Doug does not change.

Tetragon

At the quadratic level, four complexities become storied in either hierarchic or dialogic ways. For Boulding and Pondy, framework (frame) precedes control (clockwork), and is followed in higher order complexity by mechanistic (thermodynamic), and open (cell). Each of these is obvious in the textual examples I presented from Gold. For Bakhtin, four dialogisms (polyphony, stylistic, chronotopic, and architectonic) are hierarchic. Voice, styles of writing and orality, chronotopes of space–time that compete, and architectonics of Doug trying to install a moral ethical discourse where the aesthetics of sales culture and the cognitive framing by the conglomerate run differently, are examples I have drawn out of the study. It is possible that neither hierarchic model is borne out in organizations, or in all cases. It is possible that the theory is holding back our observations of complexity relationships that do not follow hierarchic patterns. Or, it is likely that there is some combination of hierarchic with some complexity properties in certain situations, and these interact with some that are not behaving hierarchically. Several chronotopes such as the ones about adventure may be hierarchically ordered complexities, but perhaps the others are not. For example the idyllic (number 9) may interact with romantic, everyday, and chivalric adventure.

Pentagon

Storytelling that holographically stitches together five event surfaces seems a performance too intricate to contemplate. Yet Euclid described pentagons in 300

BCE. In the US the five main armed forces are installed in the Pentagon building constructed in 1943, shaped as concentric pentagons, with corridors stretching 17.5 miles. Here I am more concerned with conceptual pentagons. Boulding's signs of frame, machine, thermostat, cell, and plan are hierarchically conceived conceptual pentagons. In Gold Office Supply, the storytelling is not anomalous, with tellings plucked out of their natural setting. They occur in the complexity of space-time, which can have at least five dimensions.

Rather the storytelling is multi-dimensional, sometimes with the intertextuality of a pentagon. The founding stories of Goldco specialties and Printing divisions, and Reno Branch denote patterns that are no longer acceptable by shifting frameworks. These stand in relationship to other complexities. For example, a pentagon holographic story network in Gold would be that (1) founding stories are refracted in shifting frameworks, (2) that reverberates in the word being on the street about selling Gold, (3) exciting storytelling among salespeople vendors and customers about future scenarios such that (4) deal contracts may shift yet again, and (5) provoking a restorying of what is and is not ethical behavior at Gold. In short, frameworks, polyphonic social networks, open, and architectonic complexities are interactively dynamic.

Hexagon

Kenneth Burke's (1945) infamous pentad (act, scene, agent, agency, and purpose) could become a hexagon. Burke (1972: 23) says that 'many times on later occasions' he 'regretted' not adding a sixth element, called 'frame' (Burke, 1937). Aristotle's (350 BCE) narrative elements are hexadic and hierarchically ordered: plot, character, theme, dialog, rhythm, and spectacle. Aristotle also wrote about frame but did not include it in his one list of six. Burke got his pentad by collapsing Aristotle's dialog and rhythm into 'agency.' In Burkean narrative theory, the translation of Aristotle's hexadic is as follows: plot is act, character is agent, theme is purpose, dialog and rhythm are agency, and spectacle is scene (see Boje, 2002). Burke, unlike Aristotle, developed ratio relationships among dyadic pairs, such as the famous scene-act ratio. We could easily analyze Gold and find the pentagon in play.

Septagon

If we retheorize Aristotle's narrative elements without hierarchy and include his focus on frames, which is something Burke wanted for his own work, then we have a septet or septagon. Further we can pluralize the elements, so that there are many plots (and counterplots), characterizations, themes, rhythms, dialogs, spectacles, and frameworks that are interactively dynamic complexity properties of the Storytelling Organization. We can do this in the Gold Office Supply study. Doug and the conglomerate have a plot being resisted by counterplots preferred by salespeople, customers, and vendors. There are characterizations of the

divisions as ‘toys’ and ‘play things’ and of founder Billy Gold, and an executive named ‘Fox’ that speak to ethical character flaws. There are themes I call antenarratives that are emergent, such as customers and vendors, and sales crew ‘in the know’ about the pending sale of Gold. The rhythms of the CEO and upper management turnover is wreaking havoc with cycles the customers and vendors would prefer, and what can emerge is the exit of the top sales people, taking their accounts with them to a competitor with a more attractive cycle. The dialogs in the hallways, in boardrooms, and focus groups are interanimating and highly intertextual. The spectacle of moral crisis is in play and it affects the other elements. I used the septagon in the Enron spectacle study of some 5,000 Enron narratives, as well as antenarrative clustering traversing and morphing in space–time (Boje and Rosile, 2002, 2003a; Boje et al., 2004).

Octagon

I did the dance of eight sensemaking registries in Gold (in previous section) and need not recount them again. What I did not do was to show the eight factorial ways in which these ways of sensemaking constitute the dance of simplicity and complexity. Each of the eight sensemaking frameworks of narrative control is exacting about the selection of incidents and characters. BME puts them in linear relation, the others in non-linear. Polypi dialogisms, for example, are still narrative control, at the level of dialogism interactivity, when one dialogism dominates the others.

In the next example, from a customer focus group, all eight sensemaking ways are in play. Several antenarratives are clustering: ‘turnover in senior management’ (line 343), ‘change in philosophy’ (lines 346–7), agreements are worked out and new management changes the agreements (958–61). These antenarratives are ‘bets’ and ‘pre-stories’ that some BME narrative will emerge, such as ‘we have to reinvent the wheel’ (961–2) every time a new CEO is installed at Gold because they are not honoring old deals. Frank is a customer, from a large corporation, a purchasing agent, who expresses emotive–ethical concerns. ‘I don’t care how they resolve their internal politics’ (350–1), ‘I need the product’ (352), but with the turnover each ‘president has [their] own stamp of how he is going to operate and things change’ (347–9). The video of Frank shows very emotive behavior, and the audio reveals an inflection of tonality that vibrates in ways that the words of the transcript below do not capture. The audiotape of intonations and pauses, and videotape of body language reveals a *horsesense-making* going on that is occurring beyond the words. Several I–we dialectics are evident in the transcript. The ‘I’ of the purchasing agent is opposed by the turnover in CEOs, as well as new vice presidents, and sales managers. The rapid turnover has resulted in systemicity problems of stability and access in Gold’s relations to customers. Doug, the CEO who hired a marketing professor and me as consultants, is the latest in a succession of five CEOs brought in in just two years.

A Customer Story

<i>Frank:</i> And I'm seeing symptoms of the	342
turnover in senior management they	343
have had senior management that they	344
have had in the past 14–15 months	345
where they have had a change in	346
philosophy. A certain president has	347
own stamp of how he is going to operate	348
and things change. My major concern is	349
the end result. I don't care how they	350
resolve their internal politics	351
I need the product	352
[***] They do listen but with half an	954
ear maybe because of the change in	955
management.	956
Certain management we have had	957
discussions and we have come to agreements	958
and the systems have been worked	959
out. New management comes in a new	960
president of the company and we have to	961
reinvent the wheel and we go back and I	962
mean it's in writing it's documented	963
these agreements are documented and then	964
go to the next person	965

The polyphi of dialogisms is part of what I learned (but did not, at that time, have language to express) in eight months of participant observation. There is a polyphony of frameworks in play, from the old school ways a salesperson's culture worked, to the new expectations of a conglomerate that wants to bundle the regional Gold company with two others to make a national office supply company, to be put up for sale (this becomes evident in other exchanges in this focus group). I am working on stylistics, helping the CEO restylize the annual report to reflect a better image to the conglomerate, to give the bottom line numbers and ratios a story that the conglomerate will buy into. Doug, the latest CEO, is changing the ways of sensemaking, adding a way of making sense that is from his prior job, where the kinds of unprofessional behavior he observes in his sales force, in not keeping deals that were made, does not keep recurring. Doug is shaking up the ways of making sense, and does so with some very emotive–ethical as well as answerability ethics dramatics.

For example, one story that was repeated in many office conversations concerns how, upon Doug's arrival as the latest CEO, there were assigned parking spots. Doug, in almost his first meeting with the executives, uprooted a 'reserved for the CEO' (one was also reserved for each of several VPs) parking sign and threw his on the executive meeting table, demanding to know 'who put up this sign? This is not the kind of leadership I will have around here.' He is holding the VPs at the meeting accountable. There was also a guy who supposedly worked in the warehouse that spent much of his day washing and detailing executive's cars. The offending executive, for this and other good reasons, was fired by week's end. Not only this but there is a general moral crisis he perceives, where prizes the vendors think are going to sales people for selling more than others, are going to managers, and to executives' family members instead of to sales people. Doug is shaking up the fabric of operating philosophy in its architectonics, in the new cognitive, new aesthetic, and especially new ethical ways of sensemaking. Storytelling about the shakeup at Gold helps customers and vendors make sense of a shift in operating philosophy that is apparent the customers have noticed. This telling is quite terse (347-9, 957-66). There are narrative fragments of retrospective sensemaking (342-51, 954-65). Yet, there is also reflexivity, not just BME or fragmentation-retrospection, about how the senior management listens with half an ear (954-5) and how customers and management come to agreement and work out systemic-agreements, but new management comes in to reinvent the wheel, voiding past agreements (954-62). Finally, there is a Tamara here I did not specify in the published article. The focus group in the recording room is being conducted at the behest of Doug, his VPs and senior managers, who are behind a one-way mirror in another room. After the customers head out for more gourmet food in another room, the upper echelon of Gold begin to discuss with their consultants what is going on, what are the implications of what they just saw and heard. By the way, the customers did remark, 'that looks like a one-way mirror' and 'It'll be Doug and his VPs behind it, watching us.' They are not strangers to Tamara, to how there is simultaneous storytelling in different rooms, how people chase storylines from room to room.

In organizations, storytelling is the preferred sensemaking currencies of human relationships among internal and external stakeholders. I have asserted eight are in interplay. The institutional memory of the Storytelling Organization is embedded in the distributed Tamara-systemicity of talk, written records, and in the living memory of how people do what they do across many times and places. People are more than just limited information processors. People are symbolic, reinterpret history, bring multiple discourses (ethical, cognitive, aesthetic) to bear in the moment of performing stories, especially collectively told ones. Sensemaking storytelling is highly embedded in *talk*, in *visual* image and body language, and in the *textuality* (i.e. writing) done by Gold.

The storytelling at Gold was oftentimes reflexive upon ongoing moral crises. In the Goldco founding story (above), Doug the CEO is eliciting a telling from Sam in the context of a discussion about which division and which offices in other

cities and states might have to be sold off. Doug is managing the transitions of this office-supply firm from a company of nepotism and questionable ethics, steering it away from further moral failure. Keep in mind that the framework of a sales culture may have practices that are ethical, but to more bureaucratic (play by rules) framework, those same practices are considered unethical.

Some practices are unethical in any framework. Doug told me he had come in after midnight to meet the night warehouse crew. In walking past his office, he noticed a light on in his secretary's outer office. Thinking that she had forgotten to turn out the lights, he entered. He saw a pair of men's trousers, tie and jacket, and a woman's dress, high heels, and panties, all strewn about the floor. He heard groans of apparent ecstasy and pleasure coming from his own office. He opened the door and there was the vice president of marketing atop the sales manager, and oblivious to his presence, on top of Doug's expensive leather couch. He grunted, 'I just bought that couch!' and withdrew, closing the door behind him.

The next day, Doug asked me, 'Dave, what should I do? Fire one, fire them both, what?' I said firing the executive seemed appropriate, since this was the latest of many incidents of sex in the workplace, not to mention some drunken excesses at various affairs with employees, clients, and vendors. Doug replied, 'this morning I accepted his resignation, and wrote him a letter of resignation.' 'Why not fire him?', I asked. He explained that if he fired him, the word would get on the street in ways that would drag down the image of the company. 'What about the sales manager? Do I fire her or let her go?' 'Have you talked to her? Maybe it was forced or coerced. He is her boss, after all,' I added. Doug did talk to her and established that it was apparently consensual sex mixed with quite a bit of alcohol. Doug and his remaining executives kept her on. To release her at the same time as the VP of marketing would create way too much chaos among salespeople, customers, and vendors. There is a grey area here. Upholding the moral shift from salesperson's to more bureaucratic framework, also meant the practicality of ethics: to not offend the conglomerate who want a squeaky clean image for Gold.

There was the matter of the Laker's tickets, Hawaii trips, TVs, stereos, and other prizes given by vendors to reward salespeople that were moving their products. Doug told me something I was hearing from VPs, managers, salespeople, vendors, and customers in confidence: the prizes were being taken by VPs, some managers, and their families, and very few actually went to the sales people.

I dug out in subsequent field interviews with them, that this had been a problem in the link line of successive CEOs. CEO Ed Fox engaged in very questionable behavior and was replaced by yet another and another CEO, until our current CEO Doug took the job. Doug put an end to the unethical practice. Each new CEO sent in by the conglomerate was supposed to change the salesperson culture into something more professional, and sellable to investors.

There were nepotism practices of Billy, which were understandable, but not for the next four CEOs. For example, those-in-the-know would tell me that Raymond, a former CEO, was once a hero figure for adding several branch offices (tersely told in lines 727-31). The full meaning is inaccessible unless one explores

Gold extensively to unpack extended meaning in intertextual referents of context, other stories, and history.

Although many researchers might challenge if this next excerpt is a story at all, the teller, Sam, does identify the telling as a story by interjecting, 'I guess you heard this all already' (732) and 'I guess you heard the whole story before' (736–7). Even the words 'you know' (739–40) invite the hearer to fill in the blanks. My point is that story and narrative fragments are in-between systemic-ity and context. This is an example of a storyteller briefly referencing a fuller storyline, which I observed throughout the stories shared by executives, managers, salespeople, vendors, and customers. I am Dave in this one.

Reno Branch Story of Nepotism

<i>Sam:</i> I think five years ago there was no	727
Executive Committee. He just ran	728
the place the way he wanted as if you	729
wasn't here. Raymond was [conglomerate's]	730
man and he did what he pleased.	731
I guess you heard this all already	732
<i>Dave:</i> I heard about the high growth (nodding)	733
<i>Sam:</i> Yes we picked up San Diego	734
<i>Dave:</i> Reno?	735
<i>Sam:</i> Ed Fox picked up Reno and I guess	736
you heard the whole story before.	737
That's why we picked up Reno because	738
Ed Fox had that with his father. You	739
know.	740

These stories and other stories made the rounds and reinforced Doug's image as the reformer-savior who would not put up with special privileges for executives that had been perfectly OK in the old framework. This Doug-as-savior theme resurfaces in stories from vendors and customers. The ripping-out-the-parking-sign, the required resignation of the VP, the end to nepotism site growth were all enforcements of ethics since Doug became CEO. A year from now this might be tersely referred to as the parking-sign story, the couch story, Reno story, and may all be part of institutional symbols and terse telling.

Beyond Octagon

From nonagon to tridecagon, the relationship of storytelling to complexity properties must await empiric (ethnographic) investigation. Even hendecagon (11 dimensions) yields some 40 million combinations. Tamara-land is my name for many

storytelling episodes going on simultaneously across a landscape of stages of one or many storytelling organizations (Boje, 1995). Anecdote, or story, on one stage or fixated on one screen, with stationary audience, has succeeded what was once epic story, of the fragmented wandering audiences that even Aristotle with his BME preferences wrote about.

LIVING STORY SYSTEMICITY

In sum there is no whole story. One never gets the whole story. There are only narrative fragments in systemicity. Whole story is just BME narrative fiction. Nihilism is forever announcing the end of coherence, in the restorytelling of our living story, as we and others reframe in acts of exclusion, embellishment and terse-telling. Any claim to whole story violates the nihilistic principle of infinity of interpretations (Vattimo, 1988). Whole story is *poetic* illusion. We keep hoping that someday the whole story will come out, but it never does. Instead I am proposing a theory of living story, one intertwined with systemicity complexities.

Living stories are transitory antenarratives changing in the moment, becoming reinterpreted, restoried, told differently in each situational context, just plain unstable, as versions proliferate and emerge. Living story is all that happens to all the persons, simultaneously, in all the space-time horizons where storying is going on. Living story is simultaneous, and includes the little people, not just the victors with the swords writing hi-story. People in living stories cannot know the whole story because stories have contextual meaning. Story-sensemaking is betwixt and between persons and context.

Living stories are intertextual, betwixt and between texts, posing answerability to Others' counterstories we know in part, and our acts of *discovery*. Aristotle seemed aware of discovery, 'as the very word implies, a change from ignorance to knowledge' by reading signs, disclosures, re-membling, reasoning, composite discovery, or discovery from the incidents themselves (Aristotle, 350 BCE: 1452a, #30: 237). We cannot split ourselves to be simultaneous in the Tamara-land of the landscape of the chronotopic diversity of space-time the tellings are happening in. Living story is the dance of lust for coherence of whole with differences, contingencies, multifinality, unmergedness, unfinalizedness, and plurivocality of systemicity.

Collective Memory is our next chapter. It is also collective forgetting, collective rehistoricizing, and collective striving for coherence.