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Narratives of coherence
The role of affordances and homologies

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Introduction

Organizational change is usually provoked by some outside event – often a perceived risk of failure but sometimes the perception by senior management of a major but unexploited opportunity. When a change project is committed its very nature is threatening not only to the status quo but to the coherence or sense of unity which pervades the organization and which helps to define it for its members and stakeholders. Management in this world is perhaps best labeled as "coherence seeking" – where what is sought is a pervasive yet dynamic feeling of confidence that the world is predictable and that things will work out as desired. The successful change project will achieve Antonovsky's (1979) definition of coherence: comprehensibility, manageability, and meaningfulness.

These three concepts are also the hallmark of successful "complexity reduction". Change projects and the organizational environments in which they most often occur are marked by complexity. Complexity involves a multi-dimensional ecology of world and consciousness, objects and perception, opportunities and language. This multidimensional world is very different from the efficiency based, profit-maximizing, cost-minimizing, customer-satisficing world of management. Managers are trained to act on simplicity. The coherence-seeking aspect of organizational change is but one attempt to reassert such simplicity. Organizational change projects redefine what coheres. Managers are then left with the task of seeking to restore or assert a new coherence. This chapter addresses how to surface and discuss the resulting coherence seeking behaviour.

Complex systems

The work in this chapter emerges from the study of complex systems. Complexity studies are explicitly aimed at developing an understanding of the multi-dimensional. This understanding often involves the borrowing of concepts from other disciplines. Two concepts which are seldom taught to managers can provide key insight into the workings of the day today complex system or

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systems we call organizations – and more importantly into the effects of change. These concepts are (1) affordances and (2) homologies.

One key to understanding the multifaceted ecology of organizations is the concept of 'affordances' – the assumed mechanism whereby "possibility" presents itself as weak signals to consciousness. These possibilities in the form of affordances invite responses by their perceivers. Affordances thus act as attractors drawing humans into action. Humans live in a world of active subject–world inter-relationship(s). The world acts, makes occur, and initiates possibilities. Affordance is a word for this activity.

A second key lies in furthering one's understanding of what is meant by a model and by the concept of shared models. This deeper understanding echoes in the concept known as 'homology' – a term borrowed from developmental biology. Homology is the study of sameness. When two items, events, or contexts share an underlying model – when there is sameness in the underlying model – they are said to be homologous.

When change projects address the near term, when managers look at next steps, when we each go about contemplating the next possible action, or what Stuart Kauffman (2002) called the adjacent possible. The multitude of adjacent possibles available to us at a given instant can perhaps be taken as a hallmark of complexity. J.C. Spender notes: "the degree of complexity present is the extent to which our efforts at reduction have failed" (Letiche and Lissack, 2010). In truth we do not go through life overwhelmed by the apparent complexity continually confronting us. Instead we make choices about what to deal with, what to see, and what questions to ask.

Affordances and homologies interact with self and other as we go about contemplating next actions. The dialogue about them is often key to the creation and continuation of coherence in and about the organization. Change projects which ignore this dialogue risk the substitution of uncertainty for coherence and thus failure.

Affordances – opportunities for next actions

Change projects address opportunities. When self and context meet the opportunities which are presented to that self and which is that self recognizes are what we call affordances. J. J. Gibson (1977, 1979) first used the term "affordance" to refer to actionable properties between world and actor (a person or animal). To Gibson, affordances are relationships. They exist naturally; they do not have to be visible, known, or desirable. "Affordances provided by the environment are what it offers, what it provides, what it furnishes and what it invites" (Gibson, 1979, p. 127). A chair can also afford holding things and therefore affords being used as a "table", or it can afford being used as a step stool, or as decoration as an art object (among many other possibilities). Affordances extend across users and vary with them. "An affordance is an action possibility available in the environment to an individual, independent of the individual's ability to perceive this possibility" (McGrenere and Ho, 2000).

Affordances are about opportunities, dangers, and possibilities that call organism, consciousness, and environment to activity and sense-making. Affordances are what points to the adjacent possible. Getting the balance right of the "something out there" and the "consciousness of the actant" may be a philosophical nightmare, but we do it every day. Opportunities for action only exist if there is an actant to whom they appear.

Affordances occur when self and other, perceiver and perceived, objects and persons meet in actionable combinations. Affordances invite participation, action and response. When circumstance invites reaction, context demands a response, or the situation offers opportunity, something is afforded. In affordance, perception, information, and activity are related in a manner that

seems to beg for action. Affordances are not just labels – i.e. the product of a subject's naming something. Nor are affordances retrospective – i.e. a quality of reality identified after-the-fact. Affordances are prospective – context invites action, environment points to activity. In affordances, world, situation and location, point to action, shout for response and offer opportunities for attainment.

The financial crisis of 2008–10 is illustrative of the working of affordances. According to most observers it was the all-pervasive belief that housing prices could only rise that afforded easy lending and lax regulation, which in turn allowed the housing bubble to inflate. The belief in always-rising prices allowed lenders – supposedly rationally – to look only to the value of the underlying asset (which the belief set asserted could only rise), rather than to the ability of the borrower to make payments. The same beliefs allowed regulators to be unconcerned when stories arose in the media regarding "liars' loans" (loans made to people who blatantly could not afford them and who lied on their mortgage applications). The belief in rising prices afforded the bullish lack of unease or of controls. Beliefs and stories provided a context that afforded resulting actions. Affordances are thus a matter of mind and circumstance, and of the resonance between them.

It is important at this point to remind the reader that just as self interacts with context so too can other interact with context. Affordances are the possibilities and structures, opportunities and demands that physical and social environments present to existence. Affordances only exist in the relationship amongst situated environments and the observer. That observer need not be self: it could be other. Others will find their own affordances in context.

While academic models may assume for the sake of simplicity a stasis between what has been and what will be, managers in the real world do so only at their peril. Relationships between world and consciousness manifest themselves in concrete networks of activity. There is no single determining logic to these dynamic and emergent relationships. Possibilities, dangers, and spiritual beliefs all resonate with circumstances, others, and innovative actions. The effort to reduce all affordances to a few causal combinations amounts to reduction ad absurdum.

The absence of stasis means that one cannot predict and control affordances. One affordance will be violent and destructive, and another creative and fulfilling; the one can open up a field of fear and aggression, and the other an opportunity-space for generativity. Affordances can (but only can) bring us from a possibility space to an activity. One will be drawn out by affordances, feel compelled to do things by affordances, and be confronted by possibilities by affordances. The logic of affordances is a logic of relationship and possibility. Affordances are about the *could be* and not the IS.

Homologies – the sameness of models

Change projects make extensive use of model. Models of other change projects, models of the organization, models of the environment in which the organization operates, and models of the desired future all play a role. The goal of the use of these models is to produce coherence as the change project progresses.

Two keys to coherence are comprehensibility and meaningfulness. In managerial studies we refer to this as sense-making (Weick, 1995). When "making sense" we can do one of two things. We can make sense of the world by finding a pre-established category for what we observe, ascribing (assigning) a label to what we see, looking up in some code book what rule or regulation applies and then trying to stamp out deviations from the behaviour we believe goes with the label we have assigned. Or, we can look for some principles, some stories which resonate in a deep

sense with our process of trying to understand what we observe. As we seek to determine which principles to apply and how the current observation may require a given principle to change, we engage in an emergent process of sense making. In the first case, bureaucrats, regulators, and managers seek to measure and eliminate differences from the fixed label or category. In the second, policy makers, doctors, and parents try to adjust what they know to what they see unfolding before them. Both paths are ways of making sense, of finding coherence in a given situation, and for using that coherence as the basis for further action.

The first path is the world of the computer, the second that of the environment. The unknown, unexpected, and the new can challenge the capabilities of those on the first path. Indeed, our labels for these emergent events include "miracle", "disaster", and "nasty surprise". These emergent events include the housing bubble and the subsequent financial crisis. For those on the second path, the unexpected, new, and unknown are part of the process of sense making and not its challenge. Deviance from norms becomes the basis of dialogue and query rather than the basis for statistical disregard. That dialogue is key to the success of organizational change projects.

Many projects fail because dialogue is avoided in favour of labels, categories, and checklists. A "normal" strategy for dealing with the complexity around us is to attempt to categorize what we encounter and to draw boundaries around what we are willing to "deal with" as opposed to that which we otherwise "treat differently" or ignore. The act of boundary setting, like the act of categorizing, is a brute force method of complexity reduction. Rorty suggests that we need a way of reducing the world enough that we can cope and act. This perspective suggests that the use of labels helps people to have some actionable view of the world. Labels form a very valuable role in limiting the world. Instead of actively discussing the multiple approaches which may all be interpretations, enactments, decodings, or embodiments of a model, managers often act as if there is but one or perhaps two decodings. These "privileged" interpretations are given status as names, labels, or symbols – and the labels are then used as guides for action.

Here is where the risk occurs. By making assumptions (and in so doing restricting ourselves to a particular or one method of decoding) we predetermine what might be learnt, which will limit the options that appear to be open to us as managers. This is because by adopting a particular perspective, and therefore making particular assumptions, we limit what we can "see". The perspective acts as a lens that only allows particular features to come into focus – all other features are lost, or assumed not to be relevant to the problem at hand. Furthermore, in communicating with others by making use of a particular viewpoint we limit their ability to "see" what is relevant.

Managers in general and organizational change leaders in particular have a tendency to assert labels instead of defining models and to identify best practices rather than explore affordances. The mistake is one of substituting an indexical (a placeholder) where either model or context demands an individual. Such a casual reference to indexicals in situations where the models and their use demand individuals (i.e. situatedness and context dependence) results in the replacement of a strong homological relationship with a weaker analogical one. Management scholars then compound the confusion by claiming that such indexical models can be used instead of experiments on the real world. Organizational users of models often demand accuracy despite the unreasonableness of the requirement. Given their role in the linear decision process, models are all too quickly assumed to be accurate depictions of reality. So, though the provisionality and contingency of all models is well-known, popular culture persists in utilizing them as if they were more than they are.

The problem with ascribing a label, and using it as your method of explanation, is that once one has ascribed it, once one has said this belongs to Label X, then the explanation is done.

Boundaries are often found in the narratives and labels: "the seeming durability of identity is actually contained in the stability of the labels used by organizational members to express who or what they believe the organization to be" (Gioia et al., 2000).

What kinds of model work?

If labels and categories are limiting as models, the question which naturally occurs is to ask what kind of model can be broadening? Most change projects are neither about limiting the scope of the organization nor about limiting its degrees of freedom. They require a set of models which allow for the exploration and exploitation of the adjacent possible and all its affordances.

Mental models which allow us to make internal predictions in order to determine our potential actions in the possibility space we face satisfy the criteria. Labels, metaphors, analogies, indexical simulations, and statistical formulations do not. The models which provoke resonance are those which we run in our heads in order to help determine what we should do with the possibility space in which we find ourselves. We run the model in order to make predictions. We assess the desirability of the mental outcome and then perhaps rerun the mental model. Based upon the encoding (translating the world into the model) and decoding (translating the results of our simulations into the world) regime in our heads we act or not. The model remains open to the inputs of context and situation. It allows for stories to be told, and for a range of potential actions.

Homologies are the sameness of a model which is perceived by an observer to be "behind" two or more situations. Homologies allow the observer to mentally interact with multiple affordances and where possible to "elect" the context for the next action. Homology assumes that context is variable. Labels assume that context is given. Complexity recognizes that both assumptions apply in the world.

The term homology was first used by Richard Owen in 1843 who defined it as the study of sameness (homo: same and ology: study of). The original definition of homology by Owen identified two entities as homologous if they were "the same". Owen's famously vague and broad definition of "homologue" as "the same organ in different animals under every variety of form and function" (1848, p. 7, repeated from 1843, p. 374) invokes a notion of sameness as "proceeding from a common archetype" (Gould, 2002). The meaning of "sameness" differentiated between superficial and essential similarity, i.e. between analogy and homology.

Different self(s) will interpret a model differently. Differing contexts will perhaps lead the same self to interpret a model differently. An important aspect of models is the indexicality of their subject. Indexicality is the quality of being able to serve as a "stand-in", as a generic variable. Indexicals derive their meaning from an interaction with their contexts and situatedness. The greater the indexicality of the subject, the more likely it is that multiple observers will reach similar conclusions from an examination of both model and modelled and that by abduction and induction the results of a model will be socially accepted as 'facts' about the modelled. When the real world system has indexicality it is easier to accept the indexicality of the necessarily simpler model. When the real world system, by contrast, has individuality, the indexicality of the model becomes a limitation, which tends to restrict the validity of the model to group behaviours, provided that the law of large numbers (itself an indexical model) applies.

We are better able to accept modelling results concerning atoms (which are highly indexical) than about modelling results concerning ourselves (whom we think of as individual and not indexical). Both horoscopes and Myers–Briggs tests serve to replace our individuality with indexicals (Capricorns and INTJ's). Wolfram's (2002) "new kind of science" replaces our

individuality with simple programmes. The agent based models of which Casti, Holland, and other computer simulation types are so fond, replace our individuality with other indexicals, namely agents. Simulations have their place but they cannot supplant interactions in the "real world".

Another way to say this is that models are partial truths; they partially reflect some aspects of reality. Good models have well defined relationships to reality so that we know how and when to use them. This means that we recognize which aspects of the model are related to which aspects of reality. This is not a piece by piece correspondence, but a behaviour by behaviour correspondence. Our use of models is clearly not only a property of the model, but a property of our (incomplete) understanding of the relationship between the model and reality. To the extent that managers base change projects on models without a continual cross check with "reality", coherence is threatened. To the extent that managers encourage dialogue about that cross check coherence can be enhanced.

Cues not codes

In their role as "complexity reducers" managers often forget that models are more than just labels. It is after all more efficient to assert the presence of a label and then to "look up" the appropriate behaviour or next action based upon the label and not the situation being modelled. This behaviour treats context and observation as if were a code. Code is the formal name for the use of a token to signify a specific and defined meaning. Codes are reductions. Any reduction's effectiveness is determined not only by the nature of the reductive process but also by the context in which the reduction is employed. Thus, when the goal is efficiency, codes can be very helpful. Morse code allowed for the transmission of a significant amount of information in its day. Codes can be dealt with via look-up tables, statistics, and Shannon's information theory. To assume or assert that messages consist of codes is to risk ignoring much of the meaning.

But, codes are efficient. And managers like efficiency. One source of the housing bubble and the subsequent financial crisis was the pervasive belief in a code: "housing prices always rise". If the code is accepted as an underlying truth by market participants and regulators alike, there is no one to ask the "what if?" questions which otherwise accompany cues. Surely when the general media is discussing such items as "liars loans" (loans made based on false documentation) with no money down, the cues that there is "irrational exuberance" are rampant. But, as we all know only too well, those cues were ignored for the sake of the all-pervasive code. "It does not matter because housing prices only go up."

Our modern world, and especially the managers of organizations, has come to rely on codes, because codes are efficient. Look-up tables work. A means x. B means y. C when found in situation g means w and in situation h means z. Science, obviously, places a great emphasis on codes – as does management. Complexity thinking suggests that codes are just not as omnipresent as our linguistic tendencies might suggest. The minute one starts looking at interrelations, ambiguities, weak signals, or at the vast number of combinations of things that could occur, one discovers that the very notion that a look-up table works starts sounding questionable.

Day-to-day language works because of its usual appearance in a disambiguating context; we are able to choose one of several meanings for a word or sentence because we are in fact guided by the immediate verbal surroundings, the nature of the speech act in which the words are uttered and perceived, the social and historical setting and so on. As speakers, we usually attempt to

construct our sentences in such a way as to eradicate any possible ambiguities and, as hearers, we assume single meanings in the sentence we interpret.

Affordances suggest that meaning is contained from inside one's self. When one encounters a signal, the signal evokes a meaning based on what's going on in the receiver's head and is not based on what the transmitter of the signal intended. We refer to these signals as "cues". The inability to define the environment in which a signal will be interpreted, and the parallel inability to predict affordances are what render cues complex and their study part of qualitative complexity. Cues are thus the label for the emergent meaning which results from an intersection of attendance to environment, situation, history, and cognition, such that semiotic affordance are perceived to allow for action, assignment of cognition, label, or code, or for boundary breaking.

We create semiotic affordances by telling stories. What matters about a story is what the listeners do with it, not the smile it brings to the face of the teller in its one hundredth reincarnation. Listeners use the images evoked to create meaning – meaning that goes on to inform actions. When we tell stories and share languaging, the changing context can bring us from raw experience to the possibilities and limits of shared consciousness. Such sharing is the exploration of homology. Affordances and their import demand an attention to underlying homologies rather than to labels.

Our modern sense of efficiency has led to the presumption that when a label can supplant a story it is more efficient and thus "better". The problem with that presumption is that the study of labels and associated rules is devoid of a study of context and the opportunities presented by context. Such opportunities are affordances – the then present context affords one the opportunity to do x.

Cues work when affordances match an available homology. Cues fail when the context seems to provide no linkage to an accepted homology despite the enticements of what may otherwise seem to be an attractive affordance. Cues are what evoke stories and schemas which have room for the listener. Cues thus can evoke resonance by evoking schemas – the resonance which helps create meaning and will for the next action. By contrast, codes only evoke a pre-planned meaning memorized or drawn from a lookup table. Codes can only produce a retrospective judgment of alignment. Cues are emergent. Codes are backwards looking. In the difference between cue and code, between the successfully told story and the dry repetition of memorized verse, lies the potential for resonance and the difference between judgments and actions.

Affordances in their application typically are cued and not coded. They are situation and context dependent. Their perception and being attended to is a function of the mental state of the observer and not a direct quality of the item or situation offering the affordance. To the extent that affordances limit the actionable range of adjacent possibles, some portion of that limitation is thus a result of the mental state of the observer and is a direct function of the homologies available to that observer and which he/she accepts.

Dialogue and narrative as complexity reducers

Because science as we have defined it in the Western world is supposed to leave out notions of self and of other, its use of models is generally accepted as "objective" and the standard to which other "professions" should aspire. But by definition management includes people and thus includes self and other. Scientists are too well aware that in reality science also includes self and other. The power of affordances and homology has led to many a scientific breakthrough – not due to the intrinsic nature of the subject matter being studies or the data collected but due to the humanness

of the scientists who saw adjacent possibles and commonalities of model due to their own experience history and context. Management "science" as it is all too often taught ignores this. Deconstruction studies are often focused on it.

Complex systems are those which contain interweaving(s) ("plex"). One source of those interweaving(s) is the potential for repeated encounters where history and memory have the possibility of playing a role. If we each were merely an abstract statistic and if we were destined to have no possibility for repetitious encounters, then the abstract rules of science – especially the physics which management scientists seek to emulate – might work as models. Such is not our world. We do have histories, we do have memories; those histories and memories can be transferred (and distorted) through storytelling and, in the face of this, we have the potential for repeated interactions. Those repeated interactions (or at least their possibility) are what make affordances recognizable and homologies actionable. Judgments, categories, and labels may be constructible from the statistical observation of indexicals, but affordances and homologies only create the possibility for action with the recognition of individuals.

There is a complexity reducer which makes use of affordances and homologies in dealing with individuals: respect. Respect here is meant as the possibility to be seen (spect) again (re). It has nothing to do with holding in esteem (the more traditional meaning of respect). By actively recognizing the possibility of being seen again and/or interacting again we give rise to very different set of homologies and affordances than when we view each individual and encounter as a statistical "one off".

Respect is a quality we practise rather than one we ascribe. To assign the label "respect" but not follow through on the implications for repeated sight or interactions is meaningless. In the housing/financial crisis, banks and analysts offered the label of respect for the idea of default or credit risk but failed (for the most part) to afford respect in practice. Unfortunately we all know the outcome.

> Our ultimate device for dealing with complexity and the other is narrative. We use narrative to rise above the local constraints of models. A narrative is not about the reality of a situation. Rather, the point of a story is to lay out in the open what the narrator suggests is important. Narratives are not about being objective, but are instead displays of sub-jectivity. A narrative is the representation of a compression, which is integrated at a higher level of analysis. Powerful narratives, like great pieces of music, feel as if they were inevitable when they are over, and we seem to agree on that. But note, even in a compelling story, the next line cannot be predicted. It is that feeling of inevitability that endows the great story with its ability to generate commensurate experience amongst independent listeners.
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> (Zellmer et al., 2007, p. 172)

When affordance and homology coincide the amount of effort needed for a coherent response to complexity is reduced. The obverse is also true. But, affordances are not "appropriate" best practices and homologies are not shared labels. In the drive for efficiency such substitutions are all too often proclaimed – at the manager's peril. Managers need to learn that context can be explored for affordances and that the mental models of their stakeholders – suppliers, customers, employees, and fellow organization members – can be mined for homologies.

Zellmer et al. (2007, p. 182) note:

> If complex systems are defined, as we and Rosen do, in terms of an incapacity to model them, it is possible to ride out emergence that is characteristic of complexity. One might

even come to expect emergence, albeit unpredictable in its details. But we can only do this if we are in a position to recognize the role of the scientist's decisions. Managing for emergence involves changing a point of view. Managing for complex systems requires a meta-level of activity.

That meta-level can be provided if we recognize that the goal is coherence as a setting for action and that the tools for shaping that setting are to be found in affordances, homologies and narrative.

When affordance and homology meet the possibility for coherent action is vastly increased. "The sense of coherence expresses a person's inner ability to see existing possibilities around him or herself and make use of the best ones in respect to the demands" (Kalimo et al., 2002). When, instead labels and judgments are allowed to dominate, while affordances are overlooked, and the cuing of "other" homologies is ignored, the prospect of unanticipated emergence is vastly increased. Better understandings of both affordances and homologies are thus vital ingredients in the manager's arsenal. Complexity cannot often be managed, but our response to it can be guided – if we give ourselves the tools.

Conclusion

Organizational change projects are about confronting and embracing emergence. When coherence arises from emergence it is often attributed to serendipity. What is seldom realized is that serendipity is not luck but the coming together of affordance with sagacity – preparedness. If one treats emergence and its impacts as only the product of luck, then miracles and nasty surprises are likely results. The opposite of sagacity is a lack of preparedness.

Embracing emergence means helping to create the context which affords coherence. When that context is missing coherence can still be imposed from the outside (it is always amazing what fear of force can accomplish temporarily), but the likelihood is that emergence will prove to be transformational in a miracle or nasty surprise sort of way. Thus, it is the managers' role to help create the context which affords coherence.

Narratives are important because they are a key tool we all use in dealing with and reducing uncertainty. Having a willingness to act means one is not paralyzed by uncertainty. When we are uncertain we not only struggle to predict what will happen next, but also to understand and to describe why things are currently as they are (Tenkasi and Boland, 1993). Narratives enable people to translate emergent situations that are ambiguous or equivocal so as to promote real-time problem solving (Bartel and Garud, 2009).

What is necessary? The answer is, something that preserves plausibility and coherence, something that is reasonable and memorable, something that embodies past experience and expectations, something which resonates with other people, something that can be constructed retrospectively but also can be used prospectively, something that captures both feeling and thought … In short, what is necessary in sense making is a good story.

(Weick 1995: 60–61)

Since narratives guide us through uncertainty and change, they are critical in how we deal with emergence. "People do not simply tell stories – they enact them" (Pentland 1999).

Managers often construct and interact with narratives built around labels and categories and not around affordances and homologies. Such narratives work to reduce uncertainty only while the participants perceive that the label on which the narrative is based is the "best" descriptor for the situation they perceive. By making assumptions (and in so doing restricting ourselves to a set of labels and a model) we predetermine what might be learned, which will limit the options that appear to be open to us. What is critical is that the interpretive and retelling efforts *not* stop when the symbol, icon, label, etc. get assigned. To stop at this point is to ignore dialogue and revert to the ascribed coherence and retrospective judgments of identity where the label is the explanation. Instead, the goal is to keep dialoguing so that homologies of mechanism and what–if effects can be exposed to articulation, pondered about, and used to shape an ongoing narrative.

When "best" slips to "satisficing", and then to "questioning", the relevance and the resonance of the label–based narrative declines, and coherence declines with it. There are alternatives to making use of labels, categories, and models as the means for establishing coherence and for creating narratives. With narratives built around homologies, affordances are more easily per-ceived, opportunities are better exploited (or at least explored), resonance has a better chance of taking hold, and experienced coherence can assert itself in the embrace of emergence.

Narratives can be the basis of dialogue and they can be the basis of labels and category. Dialogue and category are thus two differing tools for a manager. They each affect what will be the manager's world view and will expand or limit the manager's understanding of next steps or the adjacent possible. When the manager makes use of category as the tool for organizing thought and action, labels dominate. Dialogue and narratives about affordance and homologies are an alternative to this domination.

Category is the reductionist tool; dialogue is the complexity tool.

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