

Information Physics: Identifiable Patterns and Instrumental Processes

Dianna Wuagneux, Ph.D., Principal
International Center for the Advancement of Adult Learning
P.O. Box 1545 Main Street
Castleton, Vermont 05735 USA
1-7-802-468-2539 phone
1-7-802-468-2583 fax
icaal@msn.com

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ABSTRACT

Information Physics: Identifiable Patterns and Instrumental Processes

It is the movement and perception of, and reaction to, information that influences living systems to adapt and evolve. Without it, there is no evidence, there are no concepts, there can be no analysis, no relevance, no connections, no life.

The universe is defined through interrelationships. Information exists as transmitted relationships; connections between spatially separated organisms or events through both isolated and networked signals. Its design is part of the implicate order of complex systems. It is inherent in all relations, yet is non-manifest. Information is not inert, not passive. Information is restless; it requires attention and, like any subatomic entity, information is affected by physical space (region of confinement).

Information travels through attraction and repulsion. It competes for retention space and seeks dominance. Once embedded, blended and associated, information governs emotion and perception affecting state of mind; and therefore, individual and organizational health.

Attempts to control information result in unpredictable repercussions because fundamental constraints are mechanistic solutions incompatible with complex, living processes. However, information moves in identifiable ways. It is conducted along routes forged by experience and self-sustaining processes that have proved adaptive yet thwart change. It is possible to modify the content and structure of messages in a way that will improve their receptivity and likelihood of their long-term absorption without interfering with the information's resonance and amplification.

Whether in healthcare, education, industry or public policy, in order for information to be productively diffused, or innovations adopted, comprehension and acceptance of a message must occur. With an understanding of the basic processes of information physics, it is possible to create and employ tools and strategies that work along with the natural flow of directed transmissions improving retention and having a greater influence on behavior.

Information Physics: Identifiable Patterns and Instrumental Processes

Introduction

Transmitted information travels through attraction and repulsion. It competes for retention space with information already in place, and seeks dominance over other simultaneous input in an effort to reach the long-term memory. Once embedded, associated, and cataloged, new information is blended with existing information, and the result governs emotion and perception affecting state of mind; and therefore, individual, communal, and organizational health. Billions are spent in search of personal and organizational strategies; however, most indicators point to room for improvement. Very little of what we are exposed to through these exercises stays with us in a way that activates long term, or meaningful change . The reasons why this is so are complex and little understood. To solve the mystery and resolve the circumstance would be the mother lode to every manager, policy maker, educator, and parent.

It's been said that the true motion which lies at the basis of everything is the motion of thought; and further, that the energy that motivates, joins and sustains us comes from sharing the energy of our consciousness with one another. So, why is it so difficult to get ideas across to one another in a way that moves us to prescribed change? And, why is it that with all the information available relevant to our needs, we benefit from so little of it? My research/advisement practice designs learning system streams that accelerate

innovation adoption and information diffusion for both policy makers and organizational leadership. Our work demands a grasp of the characteristic constraints and essential processes guiding human response, threat to response, and the influence and direction of adaptive change. With client expectations high, and the number and complexity of variables staggering, I began looking to systems dynamics, complexity and chaos theory, as well as cognitive science and physics for inspiration and guidance. What I've found has convinced me that the elaborate and often convoluted reaction models of human behavior based on single approach dominance analysis are in need of a new perspective. I believe that the awareness of the patterns and processes underlying the transference of information between living organisms, and the role this movement plays in human interaction is central to defining strategies that benefit from these naturally occurring transactions.

The question that begs answering is: is the exchange of information that sustains living organisms guided by a set of principles? (Can direction and influence be reliably predicted)? And what are the constituents that unify or degrade this process? To date, the research has yielded some intriguing and important findings.

1. Information travels through, and is affected by, ambient fields surrounding and adjoining all living organisms.
2. The movement of information between living organisms and systems is either impeded or accelerated by the degree to which it is *both* similar and dissimilar to information already present.
3. The rate at which information is diffused, and the degree to which information affects changes in behavior is as contingent upon setting and mode of transmission as content.

4. The behavior of information (potentiality, resonance, amplification, regeneration and evolution) within and between living systems: is largely dependent upon the size, structure and governing of the system(s).

The significance of these findings is as broad as interpretation and creative thinking allow. Of greatest interest to organizations and communities is the discovery that the movement of information can induce or retard the occurrence of dependency, creativity, collaboration, or resistance behaviors of individuals and groups.

Fields of Information

A theory introduced in the 1980's known as morphic field theory proposes that information exists in a collective consciousness, and a process called morphic resonance retrieves needed information analogous to a television set receives transmitted signals. Continuing with this comparison, the theory asserts that looking for information stored in the brain is analogous to looking for programs in a television's circuitry. While this premise is lambasted by some in the scientific community, it is determined persuasive by many biologists, theoretical physicists, among others, and continues to gain attention. I couldn't help wondering though, why so little of this available information is accessed or at least absorbed by people. Still, the idea of fields as a context, if not a mode of conveyance, is plausible. The value of taking this theory further is to discover not only function, but also meaningful application. If interrelated fields make knowledge transfer possible, then there is a process that occupies the systems to which we belong that participate in the determining of what information is absorbed, and what information is excluded.

There are no obvious candidates for this theoretical field in standard physics; however, I've been assured by peers in the cognitive sciences that the field concept is appropriate because biological systems do exhibit behaviors characteristic of physical fields, for example, continuity and boundaries. Such a field would have a host of underlying contributing processes, e.g. biological chemical reactions. There are calculations illustrating a sequence associated with sharing knowledge. It is referred to as quantum entangled morphic resonance. Supporting this, research by the Foundation of Physics has found what was labeled as the consciousness atom, complete with "elastic" and "reactive" interactions. This means accepting that information can be isolated and discussed as it relates to the learning of habits and the transition from concept to cognition. But still would not explain the repulsion or resistance of certain available information. This could be resolved by the existence of what I call "sorbitive fields." These fields select, or allow, certain messages to pass from outside the individual into the subconscious for biological screening. The nature their framework is directed by an individual's genetic design, learned experiences, and social/cultural exposure. In affect, the circumstances that surround our exposure to information directs our tastes, perceptions and choices, determining our individual and collective receptivity to information. Policy makers and organizational leadership restrict, modify and manipulate information for myriad reasons, benevolent and self-serving. The result has been strikingly bipolar classified by behavior formations either reticent, compliant, and dependent, or protective, resistant, and reactive.

Both outcomes are harmful to the health of the systems they engender by pulling energy away from the potential influence and generative direction of the primary system. The

lack of stimulation in the former turns the organization inward, discourages experimentation, and stifles creativity; while the latter fractures the integrity of the systems disrupting, and redirecting the flow of information.

Natural Processes Dismantled

Current Practices

It is the movement and perception of, and reaction to, information that influences living systems to adapt and evolve. Without information, there is no evidence, there are no concepts, there can be no analysis, no relevance, no connections, no life. The properties and composition of our universe are due to the relationships brought about by the transference of information. The universe itself is defined through these relationships. It is the contingency created by information induced interaction that begets the interdependence of systems all around us. Of physical laws, ecosystems, culture, and, the makeup of living things. Nearly all information exchange goes on without our awareness. Within our bodies, our endocrine and nervous systems provide chemical and electrical communication between cells, our cardiovascular and respiratory systems transmit, decode and coordinate billions of signals a day without arousing our slightest attention. But equally as important, information shapes *who* we are and how we interact with one another. Understanding how information moves among us, and behaves within us is the foundation upon which any conclusions relating to human behavior can be constructed.

As the century draws to a close, we like to think ourselves a kinder and gentler, more enlightened people than existed in our past. And in many ways we are; unfortunately, that doesn't necessarily make us better communicators, and because our survival depends on how well we communicate, there is cause for reflection and attention. We have

worked hard at being more sensitive to other's needs, feeling and values to the degree of steadily altering our vocabulary and choice of appropriate communication methodology with every new published work on the subject. We have homogenized our public health advertisements, employers' training manuals and classroom curriculum to be congenial, and easily digestible. The aim is to make individuals more open to the ideas proposed, to promote the consumption of the information by making it more palatable in hopes that people will then choose to make progressive changes for themselves. These experiences are compatible with accepting responsible leadership. On a commercial organizational level, for example, this information is embraced in the workplace unconsciously disrupting old concepts of individual accountability. Instead, as clarity and complexity have disappeared for our communication, there has been an increased demand for accountable leadership; a sign of increased dependence.

The "ing" of Information

Defining information presents difficulties because it exists yet is unqualifiable, and unquantifiable. But, before any meaningful discussion on the subject can be had, information needs a description. This is a task in itself; information is no more a "thing" than an idea or an aroma is, because it can't exist with interpretation, this is what I refer to as the "ing" of information. To help demonstrate, consider the following. Information is neither inert, nor passive. Information is restless; it requires attention and, like any subatomic entity, information is affected by physical space; also known as region of confinement. It has no mass, no charge. While we discuss its movement, it has no understandable mode of propulsion, no measurable means of conveyance, no motion that

can be identified in terms of velocity; yet, cannot be at rest. It is neither particle, as it has no substance, nor wave, as it has no dimension. Information has no identifiable physical properties; nonetheless, it has behavior revealed as potentiality, resonance, amplification, regeneration, and evolution. Information exists as transmitted codes designed to create relationships - connections between spatially separated organisms or events through both isolated and networked signals. This design is part of the implicate order of complex systems. It is inherent in all relations, yet is non-manifest. Information can only be easily specified by what it is not, and by its affect on the observable world. Since it represents something, by its nature cannot be objective. It exists only upon consideration or transmission. It is expressed in the transfer of energy; however, no energy is ever lost in the exchange. Like the smile without the cat. It can only described by its purpose, its process, and its transitory results.

Information as an Entirety

Being unable to see the forest for the trees is a research analyst's habitual handicap. In an attempt to garner some understanding of the movement and behavior of information, I set about recording professional experiences with regard to information exchange and transmission outcomes. Even when viewed within the context of the most recently published systems communications models, much of what I found appeared contradictory. Suffering from what a colleague calls the "romance of reduction," I was searching for answers by attempting to isolate the characteristics of information as it relates to human interaction in the form of building blocks. While not everything can be meaningfully analyzed through atomization, there is this tendency to account for the behavior of the composite system by the properties of the sub-units. It is tempting.

Macro formulated probabilities are the most discernible by way of the most apparent action. Still, everyone familiar with the complex systems of living organisms has experience confirming that behavior displayed in the micro is not necessarily exhibited in the macro.

Given exposure to the same information in the same manner, there is substantial evidence of the inconsistencies between response-behavior of the individual and the response-behavior of the organization; between response-behavior of the organization and the greater community; a particular community and society at large. In the most dramatic example, the theories of quantum mechanics, describing the fundamental structure of all matter – atoms and subatomic particles - and the theory of general relativity governing the behavior of the heavens are mutually incompatible. Either one of them is wrong, or there are mechanisms at work that can only be understood not by multiplying the effects of the pieces and applying the outcome on a large scale, but by observing them in their entirety. Enter the concept of holism, which has troubled the sciences for a century without visible acceptance or conspicuous disagreement; the idea of existence of phenomena that can not be described by processes occurring among their parts. The eloquent, Fritjof Capra has said that there are no fundamental entities, only interrelated events. With such phenomena, we can only describe residual incidents, and attempt to capture them in a scientific theory of their own. I believe the physics of organic information (that which is exchanged within and between living organisms) falls into this category.

Advantageous Interdependence

The greatest degree of frustration experienced by leaders in a position of imparting what they consider to be vital information, is due to the still widely held belief that the way in which we are affected by information is a consequence of our intentional interpretation of messages; and yet, the exact process of how information is commuted is still open to speculation. How is it that thoughts make connection with the thoughts of others? It is known that all living organisms are embedded in an ambient electromagnetic field; this field with its complex quantum components has been shown to act on the human organism. These fields may be the vehicle of communication between separate organisms referred to as a “tangled state” or a functional reaction that as a product cannot be separated from its process. Researchers are just beginning to explore how our brains respond to field-encoded information originating from others with similar neural processes. Or, how it is that those of us who think alike (functional association) and are built alike (physically related), communicate as effectively as we do.

Deep meditation has been shown to produce the resonant coherence of an EEG rhythm during which there is indication that the mind has an unusually strong connection to the minds of others with whom it is familiar. It seems repeated exposure to an individual or set of individuals from whom we consistently gain what we determine to be valuable information increases the “connection” and improves bi-directional understanding. This allows us to follow the train of thought, and even in some instances predict the responses of someone with which we relate well. This is apparently another evolutionary adaptation. When information is shared, the boundaries of the self disappear, we expose our needs and ourselves, we are vulnerable. We build social bonds with those that offer knowledge that equates to resources, who can help and comfort us in time of need.

Accordingly, a more unified, intricate connection such as that described in a connective field theory, would be supported by increased survival of those that altered their actions in response to this enhanced connection.

Information and Groups

Behavior Patterns

Patterns are identifiable sequences that can be modeled or illustrated with some degree of anticipation. Our transpersonal patterns established over time spring from the daily relations which are the unifying component necessary to our lives, so when the behavior of the individual changes, so does the behavior of the group, but not predictably. Each individual has the potential to provoke internal information-intrusion collisions by introducing atypical insights from the larger external system outside the home or office. Accepting the value of disruption based development will take time. Nevertheless, in order to stimulate meaningful change, information must be similar enough to what the intended recipients already know in order to be considered, and different enough to gain the attention of the physical learning process. The health of any organization depends upon the introduction of varied information that counters, or at least challenges current thinking in order to force interpretation, adjustment and adoption.

People tend to organize according to biological, experiential, and other learned constructs. This is how and why we find ourselves drawn to others that share our background, experiences, and interests. It becomes comfortable to continue these relationships as people find their ideas and opinions supported, and their perspectives sympathized with and understood. The habits that express their collective thinking are reinforced by mutual observance of actions and reactions resulting in conglomerate

collective behavior. The significant energy produced attracts like thinking and like behavior. We see this as people “getting along with” each other. As the relationships develop, more areas of commonality (or associations) are discovered, the level of comfort grows and these people begin doing things together, these groups are associational-functional. Good examples are sports teams, civic societies and religious organizations. It has been found that within these associational-functional groups, the chance for learning from one another is improved over that of information exchanged in a standard classroom or office setting.

The implications are significant. Most of the money and effort put into attempts to educate/train people goes into a method to which group learning is resistant (or at least less receptive). Long-term potentiation (LTP), the process responsible for adapting to or from learning experiences, has been studied by testing stimulus responses within the Hippocampus region of the human brain. It has been proven that degree of excitation greatly increases when information from the same source was punctuated by periods of rest (spaced repetition). But interestingly, it was discovered that individuals exhibiting similarities (physical and circumstantial) who share information regularly evoke a much greater response. This scenario suggests that the brain increases the adoption rate of information from revisiting sources that are familiar, or with which we have association. I believe that it is this biological prompting that spurs interactive behaviors that underpin adaptive relationships, both social and professional. This confirms the conjecture that individuals that are related by blood or by interest (profession or association) are better able to successfully transmit and receive information in a way that is retained long enough to affect behavior. Although co-workers and classmates clearly have general

association, much of the circumstance surrounding their proximity is enforced, a great deal of their interaction assigned. These conditions give little occasion for people to recognize or, experience one another as people. Instead, information shared by and with them is filtered through sorbtive fields according to predetermined constraints, i.e. the source may be next in line for a promotion coveted by others, from a department considered a competitor for administrative recognition, or someone seen as a part of a prejudged clique.

It turns out that associational-functional relationships are largely based upon emotion, how we feel about a cause, or how much pleasure we get from participation. By recording the ability to recount personal and professional memories, it becomes evident that when information is combined with mild to moderate emotion, it imprints more effectively. Consequently, information exchanged between those engaged in activities that spark emotion has a better chance of affecting changes in behavior. While this relationship has been discussed in theory, the phenomena can now be illustrated by measuring knowledge sharing as a *transformation* reflected in the activity of information being received in the subconscious brain, then on to being perceived in the conscious mind. For the first time, the movement of information can be witnessed and represented mathematically in sequencing models allowing a glimpse into the what, where, when and why of competency exchange. It is this process that gives information “motion.” Where the motion can be measured, knowledge has been transferred.

Timing and degree of these transference events cannot be accurately predicted, but the existence of group learning cycles (as demonstrated on a very large scale by trends, and repeating culture shifts), symmetry, and points of inflection, can be identified.

Information exists in time rather than space necessitating an acceptance of the correspondence between the biology of concept formation and the physics of knowledge transfer. In the study of the sub-atomic world, the laws of quantum mechanics prove helpful in the contemplation of information in terms of function, reaction, and relationships. In classical physical mechanics, actions are considered separate and independent if they are outside the recognized range of reciprocal interaction. That is, the existence of each can be identified without in any way taking any other event into consideration. In quantum mechanics, however, actions are expressed as system states made manifest by the amplitude of signal based interaction. All living systems are born of this interdependent exchange.

Information itself is not destructible, it can only be transformed; and, this occurs only through collision with discordant information. Messages or bundles of potential energy, referred to as “memes,” can only be discussed in relativistic terms since they are only identifiable through their patterns of activity which hinge upon their attraction to and repulsion from one another. Without the transmission and reception of information, conditions remain static. Even the heart will stop beating without the signals it needs. Humans, like all living things, require continuous information for survival. Within each transmission is instruction bearing potential for change. If we are to thrive, we need interchange of information from other life forms, from each other. The information we share through issued messages has the ability to ignite the physical processes instrumental to individual and collective learning. Still, complex systems such as communities and organizations are actually very resistant to information. In fact, their structure includes selection mechanisms that admit only a tiny fraction of the data

available. Because learning is a social process sustained physiologically, and expressed in basic patterns of behavior adoption, it is learning, rather than exposure to information that changes behaviors.

This biological, social response is the most powerful tool at our disposal to promote cooperative behaviors and innovative thinking for organizational change whether that organization is commercial or communal. By the time we reach adulthood, the way in which we learn has changed dramatically. Biologically, all of us are successful because we have reached maturation. For information to be retained by an organism perceived as being successful, that information is analyzed for its correlation with information already recorded. Adaptive because this is the information that allowed us to survive through breeding age. Cooperation within any group has more to do with understanding contrasting resources than the degree to which people absolutely agree. If a group or individual offers supporting ancillary information that is not yet knowledge contained in the larger system, they are clearly more valuable than if they could only offer information already known; such a person is not a resource. The larger organism is more likely to employ cooperative behaviors with a group or individual whose information assets contrast with their own in order to enjoy the benefits of incorporating the new information for greater collective advantage.

If new information is woven together with familiar associations relevant or irrelevant to the intended purpose of the message, with various common denominators defined, the assignment of links is greatly assisted allowing for the fresh ideas to reach the conscious for attention and an opportunity for more abstract, conceptual relationships. This is the thinking that transcends what is known, to the formation of thoughts conceived for the

first time. We place limits on potentiality because we are conditioned to think in terms of mechanistic systems that wear down and exhaust their resources. Yet, living systems regenerate themselves. This is the birthing bed of ingenuity, permutation, and evolutionary development. These ideas can only germinate and bear fruit if they are able to get implanted in the first place. The level of comprehension of incoming messages is a product of the initial connections made; this affects not only the willingness, but also the ability, for the receiver to respond productively.

Since it would seem that attraction tends to lead to information adoption and utilization, and repulsion would most often prevent information from reaching the level of consideration, most progressive parents, managers, and policy makers try to make information as acceptable, and comfortable as possible to the intended audience. The goal being for those getting the message to accept and use the new information usually designed by the sender to instigate some kind of progress or correction, e.g. better grades, greater productivity, improved public health, etc., with the intended subsequent outcome being a strengthening of the entire system, whether it be the family, the organization or the community. Most messages transmitted internally correspond too closely with what already exists, making it unlikely to achieve dominance over embedded information, and is therefore unlikely to modify action. If the sender of the message expected change, the probable result is an agreeable misunderstanding, at best.

Information and Group Response

Learning is the biological mechanism for adaptation; and, there is evidence that learning together encourages future interaction. Individuals alone respond to transmitted information differently than do people in groups. Individuals seek and define meaning,

value and connections that determine their relationship with the message. In collective, communal settings, the focus shifts to finding unified and internally consistent interpretations. Groups urge agreement; they seek a leader to define meaning, suggest relationships, and reveal common denominators. This is likely an inherited response from our ancestors who relied on the health of their social groups for their own existence, and hence the inclination toward cooperative behaviors in group learning contexts. This premise supports the finding that people that go through challenging learning experiences together build functional bonds, and during this process develop a sense of cohesion and a desire to cooperate with one another.

Information Stop-Gaps

Once safely past external fields, information is engaged by an even more formidable selection process. Everyone, especially educated professionals, has built-in defense mechanisms to incoming information that default to the status quo and thwart innovative thinking. In fact, the more specialized a person is by field, education, or experience the more internal self-reinforcing processes they have. These self-reinforcing processes encourage/sustain current practices and prevailing theories in use. By reverting to experience and preconceived knowledge based memories, individuals will often overlook, go out of their way to avoid, or even aggressively oppose, new information that could ultimately be of tremendous benefit to them. This default sequence will block, reroute, and override anything outside an already established construct. This slows information diffusion/absorption, and inhibits changes in behavior.

Throughout our lives biological processes create physical pathways within to manage the immense volume of information that invariably surrounds us. These pathways are

reinforced, or more deeply etched, over time by consistent thinking, habitual response, and repetitive behavior. Information congruent to that which carved these channels finds its way without difficulty and flows easily. Because contradictory information is, at least initially contested, ignored, or denied, the structures created by the brain act as barriers, or corridors of resistance. These corridors of resistance are designed to serve a valuable purpose to the individual; they support reactions and behaviors that have been proven to work over time. They allow people to benefit from their biological antecedents, education and experience by engaging self-correcting programming. When familiar circumstances arise they respond in ways that worked in the past; in that way, they make fewer potentially costly mistakes. Unfortunately, this mechanism is only adaptive if the external factors confronting us are unchanging, and that is not the case.

Corridors and Connections

Standard channels of information distribution are typically the slowest and least effective because messages are frequently too similar to information that has already been assimilated. These messages are created through the sender's vision, from his perspective, and he is often surprised and frustrated when the intention of the message is ignored or misunderstood. During debriefing and feedback sessions, those receiving a message intended to inspire, feel equally disappointed, most often feeling as though the concept or strategy is something that has previously been discussed/tried and then abandoned. Their lack of enthusiasm and resistance to change is commonly mistaken as defiant in nature, when in fact it is more likely a matter of information physics. People don't just passively absorb knowledge; they interpret it first unconsciously and then consciously. During the unconscious portion of the process, the brain searches for and

locks on the connections that are apparent between the incoming signals, and the memories made up of billions of chemically encoded information fragments extracted and cataloged from previously received signals. The pieces of the message that find a match will bring the associated emotions and intellectual evidence of those connections into the level of the conscious mind, where it will either be dismissed because the concept did not bring about the desired outcome in the past, or be given less attention because it is something that worked well, but is already in place. Alternatively, the parts of the message that carry new, as yet unknown information, will be scrutinized through the same process. If the untried ideas are comprised of signals with no identifiable connections, the brain finds no history of this signal's importance. There are no memories, no associations, and with no "links," there is no chemical path or no reliable way to file the information in a way that it can be dependably recalled. The usual result is this piece of the information is lost before it can be considered – much like a sentence in an unfamiliar language heard for the first time - survival time, thirty seconds.

This selection process could also help explain the level of increased resistance to information received from outside the immediate system. In general, we would rather listen to ourselves than others, would rather take advice from a friend than a stranger, are more willing to express a need to a professional peer than to someone from an unrelated department, and so on. Following this logic, the relationship between relevant systems becomes more distant, it would be consistent for willingness to accept information to steadily decrease but this is not the case. Once the source of the information is removed to a degree that it is without local association, the information is, for the most part, considered in terms of content only; hence, the willingness to accept the advice of outside consultants. The difficulty surfaces when an external system *does* have association with a smaller

subsystem in which it wishes to govern change. Because the larger system is viewed with shared association, but is too far removed to be considered “connected,” by the smaller systems, the external system is perceived as an entity to defend against. Attempts by the primary system to control information result in unpredictable repercussions because fundamental constraints are mechanistic solutions, which are incompatible with complex, living processes. Examples of this can be seen in virtually every enterprise - departments resist administration, administration opposes city planners, local government contests state government, etc. The idea of local representation in unions, civic organizations and national government works well because it restores the needed connection that association requires.

The emergence of reactive subsystems is most common during the attempted implementation of new policies by new leaders and least likely to emerge when change is induced out of peer to peer exchange within. During transformational processes, the incorporation of as many members of the internal system as possible reduces the chance of fractionalization, but may also not introduce enough contrasting information to stimulate actual or perpetual change. Since accepting information from completely unknown sources carries with it interest tempered by suspicion, and messages that can be related to by multiple association are most likely to be embedded, organizations and institutions may want to consider making use of under-used channels of information-handling. An example of this type of informal information exchange option would be the disclosure of facts through sources that relate to the intended information recipients outside the usual setting (be it office, classroom, etc.). Informal sources of information include family, newspapers, professional associations, and civic organizations. For example, before introducing an initiative requiring creative interaction, consider how the information you wish to share may impact individuals outside the present setting. Ask

yourself what association the receivers might have with the message, how this information might relate to other ideas to which they assign value. Would local or professional organizations be interested in commenting or adding something to the group? Are there articles already in existence that discuss the issue from a unique perspective, suggest overlooked relationships, or offer fresh alternative viewpoints? There is evidence that small systems have a much greater capacity for information than to which they have access.

A primary culture, which exerts its influence of its internal systems by creating solutions via programs and performance measurements, becomes a deterrent to the success of those within the subsystem by instigating derision. The relationship between leadership and the supporting cast must be without inhibiting artificial boundaries. What information we choose to share and how it is communicated affects the health of all systems to which we contribute. Disruptive information (outside the status quo or direction of present current) can result in temporary reflexive shutdown but is followed by the next potentially productive cycle.

Intrusion

For information to be productively diffused, understood and remembered, transmitted messages must access the learning process of the receiver. If nothing is learned from an information exchange, no new thoughts are prompted on the receiving end. The biological process of concept formation relies upon “intrusion.” That is, the introduction of information unfamiliar, incongruent or contradictory to that individual’s current store of knowledge. If there is nothing exceptional about the content, delivery or conditions of the information, adaptation is not needed, original thinking is not stimulated, behaviors

do not change. This explains why non-adaptive monocultures appear within organizations that resist diversity of thought, and why the subsequent result is accelerated degradation of the system.

Confinement, Disorder and Reemergence

Every subatomic particle moves faster in confined space. The smaller the space, the smaller the region of confinement, the faster the movement. This is a typical quantum effect and is an excellent example of the restlessness of the subatomic world. This rapid movement could be described as vibration, fluctuation, and oscillation and gives information its resonance. Amplification of that resonance is made apparent by residual-event patterns made conspicuous by changes in behavior throughout the system. Low levels of amplification result from all information exchange. Significant amplification is brought about by the creation of new pathways, created when the message received contains new information requiring thought. Connections must be established, and each correlation offers the possibility of fresh creativity and imagination. Further, this innovative thinking will not yet have preprogrammed behaviors attached, this fosters the need for mental scenario building, and is the precursor to individuals changing their course of action. The greater the challenge to adapt the new information and behavior in the individual system, the greater the amplification within the individual and the system. The high energy exchange can touch off a group learning phenomenon I call stimulating a cascade: new information begets new thinking, and new behaviors, which require new responses that generate new thinking throughout the system.

Since small systems by definition contain fewer variables than large systems, the information they generate and receive is more likely to have a significant number of

associations allowing for greater impact potential throughout the system. Information that is restrained either by the small size of a system or intentional repression exhibits increased activity and more rapid diffusion. Moreover, the energy released can disrupt information receptivity defense mechanisms allowing greater potential for the consideration of new information, or intrusion. In most cases however, the disruption phase of knowledge transfer is interrupted before the information is allowed to interfere to a productive degree.

Navigating the Current

In the last few years, books and articles relating chaos and complexity theory to organizations as systems have helped organizations become familiar with the premise that it is natural, even necessary, to undergo periods of instability as a part of the development process. In fact, some organizations have begun incorporating basic systems theory into educational workshops and strategic visioning sessions where these processes are presented as normal, cyclic adjustments that are the foundation of adaptability. Typically, however, while managers and other organizational leaders will acknowledge that, *in theory*, information collision disruption processes vitalize flexibility, collaborative spirit, and ingenuity, *in practice* they still find themselves trying to regulate, and eliminate its imposition. While the behavior seems contradictory, it is understandable.

The viability of any group relationship is most often thought to be compatibility. Anything seeming to threaten what is seen to be the foundation of cooperation such as seeming breakdown of these vital relationships is frightening, even when the ultimate advantages and temporary nature of the discomforting conditions are understood. The

difficulty then lies not in the cognitive ability of leadership to grasp the value and necessity of the process, but in the emotional need of those in charge to affect outcomes in a way they understand to fulfill a common purpose. I submit that it is a matter of using, rather than interfering with the information adoption process. When the process is impeded or arrested, the energy is either inflected, resulting in a reversion to the pre-information state fortifying practices and theories in use, or the energy scatters, splintering the supporting structure. However, if allowed to run its course, this concentrated activity tends to interfere with symmetrical amplification making it more subject to distortion.

The effect appears most evident at the greatest distance from the information origin. Because of the greater effect on the individual members, the change vision of the local system tends to be incremental, involves the experiences of the members, and consists of compromise. Conversely, the change vision of the larger controlling system is often unconditional, employs the aptitude of the educated few, and consists of solutions to problems rather than ongoing wellness. Moreover, the subsystem is oriented to the moment, where as the primary system is oriented to the future; the primary system is interested in striving toward calculated goals, and the subculture values spontaneity over planning. The divergence of these systems can pull communities apart by dividing solidarity

In dynamic, complex systems, information is abundant and varied, ingredients fundamental in determining malleable structure. For systems to develop, internal system sets must evolve. If this is to take place, information must be continuously generated from within and without. It is the process of establishing connections through diffusion

of information from myriad sources that prompts collaborative, self governing order to follow cyclic disorder; information it is the underlying agent of the process. Unaware of the need for contrasting ideas and opinions, and in a mistaken effort to reduce friction and opposition, primary systems very often withhold and alter the information they share with the subsystem. Even when the goals of two coincident systems are identical, withholding information supports existing perceptions, expectations, and ends meaningful communication causing reaction fractures in the sub-systems. This is highly significant because the energies being drawn into the subsystem are drawn away from the direction intended by those attempting to induce change from the primary system impacting the success of the intended initiative.

Undetected Variables & Anticipated Response

The being of information cannot be separated from its activity. The very process of information physics can only be understood in the dynamic context of its movement, amplification and resonance; interaction based on regeneration, and transformation/ evolution by way of adaptation through behavioral change. The structure of the human mind affects the physics of information because the process of observation and our individual and collective perceptions determine the very properties of any observed phenomena. More significant is the fact that we cannot communicate without affecting information. In quantum reality information processing, non-local connections of our collective thoughts result in instantaneous change of each progressive subsequent thought. If we are unrestricted in our comfort to communicate the result, what we can share will be as original and as unique as each of us.

Influence and Direction

It is the meaningful exchange of knowledge and competency that is the challenge.

During intrusion, new information confronts and challenges existing information causing a disturbance within the system. The result is an internal resonance leading to the amplification necessary to learning and adaptation. It is possible to modify the content and structure of messages in a way that will improve their receptivity and likelihood of their long-term absorption without interfering with the information's resonance and amplification. It was once thought that it was uninterrupted feedback loops that amplified disturbances creating structures within that diffused energy to cause systems to reorganize and renew. While true, the free flow of internally generated information is not enough. For ongoing regeneration, living systems need infusion of unimpeded, divergent, yet comparable information. Given that, the ability of these systems to reconfigure gives them a feature more important than compliant stability: resourceful versatility and resiliency.

Information that is out of the ordinary, but congruous enough to make use of the existing channels, has a good chance of surviving long enough to resonate, or call attention to itself. The message is then evaluated for possible cataloging, or disposal. During this sorting stage, it has been discovered that the number of varied associations the brain is able to find with the message outweigh the strength of a singular significant objection. So, if a person is given information that is consistent with their personal values system, their spiritual beliefs, their professional experience and their social upbringing, it will stand a better chance as a candidate for long-term memory than if it simply corresponded with their educational experience. Similarly, the number of areas where the

information is *inconsistent* will outweigh one significant conviction. In other words, a message with a multitude of connections coupled with contradiction will gain the most attention.

Information and the Individual

Research has shown that on an individual level, the greatest adaptive behavioral changes occur in adults involved in self-directed learning from informal information exchange, meaning casual answers to spontaneous questions with neither intent nor restriction. People flourish when they have the comfort to contribute to what they consider to be meaningful exchange without being expected to come up with conclusions and solutions, or agreement with the current sway. The freedom to participate in conversation relative to subjects that matter to us as people moves us to want further interchange, to know one another.

Summary and Recommendations

The fact that so much of what presented here is outside current traditional scientific thought, is less something to disturb or burden us than it is to enjoy and celebrate. In the old model, if it couldn't be plugged in to a prescribed formula, or demonstrate support by current accepted theory, it was rarely given acknowledgement in scientific or professional discourse. Instead, we live in a time when at last it has become intelligent to question, to say "I don't know," to exchange interdisciplinary theories, and to admit that when it comes to living systems, there are no definitive answers, offering us an opportunity once again for collective curiosity and wonderment. Sadly, much of what we have learned and passed into collective memory socially in the last several generations has been maladaptive to our health as a society. The information we share provides us with the

group identity needed as a basis for sound community living. When this is understood, we can marvel at how careless we have been with the information we generate and choose to disperse. Very general recommendations based upon these findings include:

1. Before introducing information for the purposes of instigating change, first consider what behavioral responses would be of the greatest value to the proposed initiative and the systems over time. Does the project require creativity over collaboration? Or, is solidarity and allegiance to the present structure more important than generative process? If the plan calls for continuity and high levels of structure and regimentation, information should be dispensed to large groups in a generic format with small amounts of new information blended with very familiar messages. The presentation should be punctuated by specified steps and explicit correlations made by someone with only general affiliation with the group whose presence does not induce positive or negative emotion.

Conversely, if inventiveness, imagination, and ingenuity is called for, information should be shared individually, or in small groups. It should be conveyed by someone well thought of with as many associations to the individual/group as possible in a format made up of predominantly new information. Emotion inducing connections that can be linked to the project should be illustrated. Relationships should be suggested rather than defined and the exchange should be kept brief.

2. Determine how much instability, over what period, you are willing to accept.
3. In all instances, let individuals self-organize, and to every degree possible encourage them to become familiar with each other as people. By bringing them together for the purpose of participating in a community improvement project, for example.

There is an unbroken wholeness to which we belong, and in which we have the opportunity to participate. This emerging understanding is a means to get back to our place as being a *part* of the living complexity, instead of reacting to analysis of systems theory as though we existed *outside* it. The events in our world are *not* arbitrary. It is not only our actions, but also the thoughts, perceptions, and intentions that we share with one another that shape our universe.

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