# Dynamical organizations theory

## Openness, synthesis and emergence - A brighter future for managing, leading, changing dynamical organizations

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## Abstract

This paper presents a new theory, the Dynamical Organizations Theory: Openness, Synthesis & Emergence for organizational change that is practical and proven in many organizations. It integrates the work of Ilia Prigogine on dissipative systems (open, free flow of information and energy into, out of and throughout the organization), and synthesizes Kevin J. Dooley's discussion of complex adaptive systems, Jeffrey Goldstein's discussions of dissipative structures and self-transcending constructs, Per Bak's self-organizing criticality, John Bennett's Systematics and uses Richard N. Knowles' Process Enneagram, a disciplined, focused dialogue tool which leads to the emergence of new information and releases the creative energy of the people..

Change is co-created by the people and emerges from focused, disciplined, bounded conversations using the Process Enneagram©, a dissipative tool, and is sustained using the co-created Process Enneagram Map, a dissipative structure, to guide and focus ongoing conversations as the people and their environment evolve. With the emergence of new information and energy, the people and their organization transform themselves, bridging the business and human sides of the enterprise, developing a highly effective, and more humane and sustainable workplace. Leading with this approach is called Partner-Centered Leadership

## This is all within our reach!

In your quiet moments have you ever thought about how great it would be if people could come together to find better solutions to the complex problems we all face? Do you ever dream about bringing it all together so people can work on the important things? We can do it!

We have very tough political issues, business issues, environmental issues, and cultural issues swirling around everywhere. The anger, polarization, misunderstanding are rampant. Power struggles, name-calling and bullying are not getting us anywhere near to finding the workable solutions. In many places trust and interdependence are missing.

Think about how frustrated you get in trying to force people to change, to do what you think is best? Have the people in your organization just dug their heels in to resist what you think is a new and better approach to improving the business or solving problems? As people push back have they formed cliques that fracture the organization and keep people apart blocking communication? Do different parts of the organization isolate themselves into subgroups and fight with other subgroups? Do the stovepipes of finance, research, production, marketing, sales, etc. create solid boundaries to keep others out of their territory? Have the bullies and other harassers created all kinds of problems?

Over the years Knowles became deeply frustrated by these sorts of behaviors in his own organizations. He tried all kinds of ways to overcome these problems. He tried to become a better manager and read lots of books about that. He studied leadership but most of what he read has been about being more charismatic, dynamic and more able to influence the people. He hired expensive consultants to no avail. A lot of all this has been about how to sell the ideas and get the people to do what he wanted them to do.

All this reading and studying with all their shoulds and oughts left Knowles feeling very inadequate and wondering if he could ever measure up to their standards. What was he to do to become a better leader and manager? The management process that he had learned over the years from many higher-ups in the big chemical company in which he worked was to work harder, know everything that was going on, micromanage and kick behind and take names. This worked a little but it was brutal and unsustainable for me and everyone else.

It does not have to be this way! We can choose to stay where we are and fail, or we can choose to take a different path, talk together, listen, learn and seek the best solutions for all of us. This approach vastly improves our chances for a brighter, more hopeful future in all our organizations whether it is in government, business, education, families and even in our own personal growth.

About 30 years ago he was finally frustrated enough to try to find out for himself how to become more effective in helping the people in the organizations for which he was responsible to become the best they could be so we could be more dynamic, more humane, more profitable, and safer both physically and psychologically.

He has made lots of progress and found some important answers to share.

## Knowles's adventures

Knowles moved off the beaten path and began to study the Systematics of John Bennett[5] He also ventured into the study of chaos and complexity theory. After years and years of study and observation he realized that the most powerful, rapid change process he had ever experienced was a real crisis like the fire that occurred in his chemical plant. People immediately stopped the dysfunctional behaviors he has written about at the start of this paper and became a high performance team in just seconds. They worked quickly with vigor and focus to put the fire out and restore production.

In thinking about what had happened for a number of years, Knowles came to realize that the behaviors the people showed in the crisis were like what he was looking for in order to help to create a superior, sustainable, more productive and humane business. People already know how to work this way. Years after the fire the operators, mechanics and supervisors talked about how satisfied they felt in the way they had worked together talking, listening, making decisions; everyone trying to be their best. They liked working this way; it was fulfilling, exciting, stimulating and produced the results they wanted.

In your own experience in times of crisis you may have experienced a similar, rapid shift to high performance of your organization? This shift to high performance in times of crisis seems to happen just about all the time.

But there are three problems with this change process:

1. We can't have a fire or other crisis every six months to feel good.

2. We generally do not know how to sustain the crisis level of performance so people fall back to the old ways.

3. We can't sustain the high level of energy expended in a crisis like the fire for more than a few weeks.

However, through the years of observation and study, he has found an approach that helps organizations to learn to work at high levels of performance and to sustain very high levels of energy and creativity at the same time. It is basically the same process that unfolds in a crisis, but it is slowed down.

- Everyone can see the patterns and processes emerging,

- understand them,

- learn to use them,

- pace themselves at sustainable energy levels and

- achieve the high levels of performance that are needed for the business to thrive and grow.

Knowles calls this approach **"Dynamical Organizations Theory: Openness, Synthesis and Emergence"** and has used it very successfully to help many organizations around the world transform themselves, moving to much higher levels of robust, resilient, sustainable, humane, business performance. The process of leading, using this approach, Knowles calls **"Partner-Centered Leadership"**.

## Dynamical organizations theory: Openness, synthesis and emergence

The open flow of information and energy into, out of and throughout the organization is fundamental. The synthesis of various complexity theory concepts intertwined with focused, disciplined dialogue using the information leads to the release of powerful energy and the emergence of new information, new ideas, a clearer vision of the whole system and opens new potential. This Theory opens up the understanding of fundamental processes for change.

The new synthesis of complexity theory concepts enables us to see and understand how organizations actually work. These include:

1.  a complex adaptive systems (CAS) based approach to organizational change that is practical and proven in many organization,

2.  the work of Ilia Prigogine on dissipative systems,[1] (far-from-equilibrium systems that are open to the continuous flow of energy and information in, out and through them),

3.  Kevin J. Dooley's[2] discussion of complex adaptive systems,

4.  Jeffrey Goldstein's[3] discussions of dissipative structures and self- transcending constructs,

5.  Per Bak's[4] ideas about self-organizing criticality,

6.  John Bennett's Systematics[5] and

7.  Richard N. Knowles' Process Enneagram.[6,9,7,8] (The Process Enneagram is not related to the enneagram of personality.)

Change is co-created and emerges from focused, disciplined, bounded conversations using the Process Enneagram©, a tool to guide the dissipative conversational process, and is sustained using the co-created Process Enneagram Map, a dissipative structure, that enables the organization to live far from equilibrium, and to guide and focus ongoing conversations as the people and their environment continually evolve. Arising out of this openness and synthesis, emerges the capability and will for the people and their organization to transform themselves, joining the business and human sides of the enterprise, and the development of a highly effective, more humane and sustainable workplace.

The energy that drives these processes is released in the purposeful, focused, disciplined, and sustained conversations about something that is vitally important to the people and for the success of the organization. Most people have a lot of energy to talk about things that are important to them. Self-organizing criticality explains the powerful role that the conversations play in building the energy for organizational change. The

Process Enneagram is the tool to guide and map the conversations in this dissipative process. The completed Process Enneagram Map is the dissipative structure, the BOWL, the attractor, that holds the organization far from equilibrium near the edge of chaos.

The Process Enneagram©, created and developed by Knowles, provides a structured, facilitated, dialogic process tool to help the people to move through the SOC process and create the attractor for the emergence and cohesiveness of high performance work teams helping them to move to higher and sustainable levels of performance. The use of the Process Enneagram by the people, reveals the attractor that helps the organization to achieve both the order and focus for the organization and the freedom for the people to make the appropriate decisions for their own work at the edge of chaos.

## Self-organizing criticality

Self-organizing criticality (SOC) is a natural phenomenon that occurs widely in the physical world. The SOC theory was first introduced by Per Bak, Chao Tang and Kurt Wiesenfeld.[10] SOC is a property of self-organizing systems that, at their critical points, can suddenly shift to a new order. Examples of these phenomena are sand piles, earthquakes, mass extinctions, stock market fluctuations and traffic jams.

Bak's first examples were sand piles like the one in the bottom chamber of an hourglass[4] As each grain of sand falls onto the pile, the pile gradually gets higher increasing its potential energy. At some point, one that is not predictable, the next grain of sand causes the pile to experience a shift, a landslide releasing some of the potential energy. As more sand is slowly added to the pile, it builds up again until the next slippage occurs. Most of the shifts are small ones that happen frequently. Some of intermediate sizes occur less frequently. Large ones occur even less frequently.

SOC is typically observed in self-organizing, non-equilibrium, metastable, dissipative systems where extended degrees of freedom and high levels of non-linearity exist, such as near the edge of chaos. SOC is a fundamental guiding principle that reveals order from disorder, making visible the invisible and providing stability to the system.

Bak showed that the sizes of these landslides followed a power law. The graphical plots of the logarithms of the frequencies of events verses their sizes results in a straight line. He extended his investigations showing that earthquakes, volcanoes, and traffic jams also follow power laws. He believed that SOC accounted for how order emerges from disorder and describes how, in turn, the most enduring structures can unexpectedly collapse.

In this Dynamical Organizations Theory, Knowles extended the SOC concept beyond physical systems making this the first, known application in social systems. He defines organizations as 'complex, adapting, self-organizing networks of people'. Since

organizations are self-organizing the SOC process takes place within them.

Instead of watching grains of sand building up on each other, visualize a myriad of focused conversations in the organization building up potential energy over time. No one knows when the next conversation will be significant and shift things. The challenge for organizations is the optimization of SOC for collective output and organizational gain. Understanding how to reveal attractors that influence SOC is important in solving complex problems and holding the "living" organization at the edge of chaos. The organization's attractor provides order for the organization, a boundary and space within which the organization can hold together, yet allows the freedom for the people within the organization to make the best decisions possible about doing their own work at the individual level.

Using Per Baks's ideas and extending them to organizations is a very useful way to see invisible patterns and attractors, and to understand how change occurs.

## In pursuit of safety excellence: An example

Most organizations are trying to grow and improve their safety performance and earnings. Many people in traditional management positions want to maintain a high degree of control so that their people do what they are supposed to do to make the organization more successful. These managers want to maintain the status quo seeking reliability, predictability, stability and control. They see organizational challenges through a machine-like lens using reductionist thinking and linear tools like project planning, cost benefit analysis, root cause analysis and training to fulfill the expectation that the people will work safely and do what the rules require.

These command and control cultures often suppress the creativity and energy of the people leading to the unintended consequences of the people feeling cynical, frustrated, confused, fearful of and resisting change and often angry. Improvements in performance, safety and production are difficult, slow and hard to sustain. When decisions are made at too high a level in the organization and the people are expected to unquestioningly follow these decisions, unintended as it may be, unproductive behavior often results. Information flows are constrained and restricted, trust is low and managers lack the capacity to help the people to develop the collective purpose and identity of who they are and what they are trying to accomplish. The gulf between the work-as-imagined by those at the top and the work-as-done by those doing the work is unrecognized and huge.

For many managers this complicated, machine-like approach is seen as the proper and responsible way to lead. The roots of this go all the way back to Frederick Taylor's,[11] *Principles of Scientific Management*, and are further influenced by Max Weber, A. M. Henderson and Talcott Parsons[12] in *The Theory of Social and Economic Organization* who refer to layers of hierarchy, rigid status and structure, rules, and the role of experts. This way of leading is seen as conservative, efficient, low-risk and repeatable across many levels of the organization. This is often okay for standardized systems and processes like payroll and a simple production line. But when these ideas are applied to the people, the results are usually unsatisfactory. It is what most managers have always done. They see the organization as if it is a machine, but, people and organizations are not machines; they are much more like living systems such as flocks of birds or schools of fish.

When managers shift their thinking and approach to their organizations, seeing them as complex, full of non-linearity, feedback loops, and iterative processes, new opportunities open up for the organization and the people to become much safer, more effective, productive, profitable, robust, resilient, and better places to work. The cultures in these organizations become more vibrant, resilient and alive with the people feeling hopeful, having a sense of urgency with clarity of purpose, and openness to change and new possibilities.[7] Energy and creativity flow abundantly. People embrace the changes they create. Resistance to change almost disappears. The huge waste of the typical dysfunctional behavior disappears.

While this is a new and different place for most managers, they can develop the confidence to become significant change management leaders, learning to live with the certainty that previously unseen properties will emerge enabling them to reach higher, more sustainable levels of safety and business performance with their teams.

To do this, though, requires an awareness and receptivity to the notion that human experience has evolved with SOC as a basic property behind the actions and thoughts of people. This is one reason the author understands organizations to be complex, adapting, self-organizing, networks of people. They are dynamical, dissipative systems with energy and information flowing in, out and through them with changes occurring in both time and space. These networks are resilient and robust with information flowing freely throughout the networks in myriads of conversations. They can operate far from equilibrium near the edge of chaos.

In addition to many conversations building up over time, a key for organizations to thrive and grow is the identification of SOC strange attractor that holds the people and the organization in this dynamical space. The hidden patterns behind the visible patterns of behavior are difficult to discover. However, once revealed they provide a region of order among the chaos as well as a space for freedom in which the people make the best decisions they can for their own work.

Knowles discovered a methodology to reveal the strange attractor that enables SOC to be a positive force in the organization realizing that the strange attractor enables the organization to have sufficient stability to live in the ambiguity at the edge of chaos. He discovered the Process Enneagram© tool to guide the dissipative conversational process that leads to the co-

creation of the Process Enneagram Map. This behaves like a strange attractor and helps the people to discover and reveal the hidden patterns that allow creativity and energy to emerge while, at the same time maintaining order and focus for the organization and the freedom for the people to make the best decisions for the work-as-done as well.

Knowles calls the strange attractor, the BOWL. It is a basin of attraction made up of the vision, mission, principles and standards (of behavior and performance) and the ideas that emerge from the people co-creating their own Process Enneagram Map. The BOWL reveals how SOC can work collectively for the people and the organization by providing order and a boundary in which the people can co-ordinate and co-operate, yet also enabling the people within the BOWL to have the freedom to make the decisions that are appropriate and best for their particular work. As people see the need to do something they have the freedom and support to step forth to address this need and in doing so the organization becomes "leaderful". In a leaderful organization when someone sees the need to do something, improve something or fix something, they take the initiative to begin to do the work getting help and guidance as needed.

## The process enneagram©

The Process Enneagram is a tool for dealing with complexity. An enneagram is a Greek word for a 9-term figure. This figure was introduced by George Gurdjieff to his study groups in St. Petersburg, Russia in about 1915. Where he discovered it is unknown. The Process Enneagram as developed by Knowles builds on this figure and is focused on the patterns and processes taking place in organizations. Knowles identified the unique nature of each of the 9 points, the way they interact, and the nature of the inner lines. Patterns for three leadership processes as well as for personal and organizational transformation were discovered. The use of this tool in a guided dialogue enables people to see who and what they are as well as discovering how and why things happen as they do. The business and people sides of the organization are reconciled and brought together resulting in the release of creative energy and commitment. In the course of the dialogue the people develop practical solutions to solve complex problems, make the connections with other people that they need to help them to do the work and, in the course of the dialogue, energy and commitment emerge. They co-create their living strategic plan. Beverly G. McCarter and Brian E. White[13] in *Leadership in Chaordic Organizations* suggest that the Process Enneagram© provides the missing link between complexity theory and practical application.

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**Fig. 1: The Process Enneagram©**

The Process Enneagram©, Figure 1, guides and informs the conversations that are needed to move towards excellence in all aspects of performance. A breakthrough in developing the Process Enneagram© was Knowles discovery that Bennett's[5] systems could be placed around the circumference of the figure.

Point 1 The Monad renamed as "Intention"

Point 2 The Dyad renamed as "Issues and Ambiguities"

Point 4 The Triad renamed as "Principles and Standards"

Point 5 The Tetrad renamed as "Work" (the actual, physical things going on)

Point 7 The Pentad renamed as "Learning and Potential"

Point 8 The Hexad renamed for "Structure" (the internal structure of the organization) and "Context" (the external environment in which the organization exists.)

Points 0, 3 and 6 were renamed from Function, Being and Will to "Identity, Relationship and Information", the three elements required for self-organization. These are the visible manifestations of Function, Being and Will.

In the course of the dialogue with the Process Enneagram, a map is co-created by the people in the organization. David Byrne and Gill Callaghan,[14] in *Complexity Theory and Social Sciences, The State of the Art*, point out that people from all organizational levels, including the managers, need to be involved and engaged in the dialogue for it to be effective in the complex system of the organization. The voice of the system needs to be engaged. The dialogue process begins with a question that is important and compelling to the people like "How do we improve our safety performance?" This is followed by dialogue at each of the 9 points, writing onto the map the people's ideas and comments as they emerge. This is an enlightening process of self-discovery for the people who realize that collectively they have a lot more knowledge than they realized, and together they learn from experience and come to understand how SOC can work collectively for them.

The Process Enneagram Map that the people co-create is their attractor and it is then posted on the walls of their meeting rooms. It is constantly discussed each time they meet, asking each other about their experiences since their last meeting, making revisions as things change, and decisions are made. The co-created and shared Principles and Standards need constant attention as they are a key part of the whole process. As the people work together in this dialogue at each of the 9 points, the organization becomes conversationful around their core work. These ongoing conversations keep the Process Enneagram Map alive allowing the people to make constant adjustments as the world changes and to sustain their work processes.

An important role for the leaders in the organization is to create the conditions for change by constantly maintaining the ongoing conversations about their Process Enneagram Map, fully sharing information by going into their organization, listening to and talking with the people, learning together and helping them to see the importance of their contributions for the success of the whole organization. The Process Enneagram Map reveals the strange attractor (the BOWL) and is refreshed continuously ensuring the cohesiveness of the work and sustainability of performance.

In the hundreds of workshops that Knowles has led, the people shift from their old, traditionally led, low-energy organizational basin of attraction to their higher energy, more effective and efficient, self-organizing basin of attraction called their BOWL. This shift often happens in just a day or less. Then the leaders sustain the process through the ongoing conversations and dialogue each time the people meet.

This is illustrated in Figure 2.

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**Fig. 2: Moving to the new state**

The Process Enneagram is fractal and can be used at any level of scale. It begins with the starting question of importance. The opening question can be narrowly or broadly focused. The ideas, developed as the Process Enneagram map is co-created by the people, are guided by the nature of the question. A narrowly focused question develops a Process Enneagram map with a narrow focus and a broadly focused question develops a more broadly focused Process Enneagram map.

The completed Process Enneagram© map, co-created by the people, becomes their living, strategic plan and is updated constantly as conditions evolve and change. This is their strange attractor, their BOWL enabling them to live at the edge of chaos, adapting, thriving and growing by providing the stability and order to hold everything together and the freedom for the people to learn, grow, make the best decisions possible and create new opportunities. Many of the changes they make are small, some of the changes are bigger but less frequent, and occasionally the organization reinvents itself. The organization is much more resilient as the people constantly make adjustments to improve things. By engaging the people from across the system in the Process Enneagram dialogue an adequate variety of people and thinking is brought together to address their complex problems.

In using this approach when Knowles was the Plant Manager of a large, DuPont chemical plant in Belle, WV the earnings rose about 300%, injury rates dropped by about 98%, emissions dropped by about 88% and productivity rose by about 45%.

## SOC – Purposeful use of a natural phenomenon

In Figure 3 pathways are shown for the two choices that a leader or manager can make each time he/she is faced with a complex decision. The lower, command and control pathway is followed when the manager is working with routine systems and processes like running a payroll. Sometimes, when non-routine problems arise, the manager thinks that she/he has the answers and imposes them upon the organization. This pathway choice usually feels quicker for the manager and if the people just follow the instructions, things will be just fine. But many times things are not just fine because when the manager imposes his/her will onto the natural tendency for self-organization, the people in the system begin to pull back and shut down. Information flows become weak and blocked up. The energy dissipates. The levels of trust between the people in the organization and the leaders get broken, all sorts of dysfunctional behavior spreads, like the way people form cliques and resist change. The hidden elephants grow. People self-organize around the kinds of behaviors that drag the organization down and suck the energy out. Nothing basically changes; the culture is quite dysfunctional, the network breaks down and the organization gradually dies. The energy of SOC is drained from the organization.

This lower pathway is appropriate for managers to run standardized processes like a payroll or supply chain or a production line. It is also appropriate for solving simple and complicated problems. These processes need to be stable and controlled to maintain productivity and quality demands. But these management processes can be pushed too far and drag people down by suppressing the flow of information and creativity. Complex problems can't be solved using these linear processes.

The upper, SOC pathway in Figure 3 is taken in the crisis situation. There is so much happening so quickly that the manager can't control things and people clearly see the need to step forward to help in the crisis. The people become a high performance organization instantly, putting aside the dysfunctional behaviors, self-organizing and doing what it takes to overcome the crisis. It is an exciting time, but once the crisis passes, everything falls back to the old way because no one knows how to live at the edge of chaos.

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**Fig. 3: The journey: It is a choice**

However, when the leader intentionally slows this crisis process down and follows the upper pathway, engaging the natural tendency of self-organization, he/she is now consciously using the natural phenomenon of SOC; this is the pathway of Openness, Synthesis and Emergence and the Partner-Centered Leadership process. As the conversations open up and the energy builds, the organization moves up along this path. New ideas and possibilities emerge; the elephants get rooted out, information flows freely enabling the network to better know itself. The excitement and interest in the work build. People become more creative, energized and leaderful. The organization moves towards the edge of chaos where it is most dynamic, creative and healthy. The people co-create their shared future learning to work together in new ways using the Process Enneagram thus enabling them and their organization to hold themselves successfully far from equilibrium at the edge of chaos becoming a highly functioning organization with a positive, sustainable, strong culture. The small changes at the beginning of the change process enable the people from all across the organization to learn to live and work together without causing a big mess as they learn, make mistakes and grow.

The Process Enneagram Map records and reflects the elements of their strange attractor, the BOWL, the dissipative structure that the people create enabling the organization to live effectively at the edge of chaos. The leaders and others maintain the BOWL, which provides order and focus. As the people's understanding broadens and they continue to learn together, people discover that they can work within the BOWL and make the decisions they need to make to do their work more effectively and safely. Walking around among the people, learning, listening, talking with each other is one of the processes to sustain the BOWL. The BOWL is the strange attractor that enables the organization to live and work successfully at the edge of chaos and for the people to do their work most effectively and safely. A number of case studies showing completed Process Enneagram maps are in Knowles 2002b.

Here are some real examples of new things that happened in organizations near the edge of chaos. The initial, small changes can be easily overlooked so it is important to pay attention and keep track of the changes beginning to happen.

- Many small changes occurred like when one member of the City of Niagara Falls, NY Leadership Team offered a truck with another group, and another Team member provided temporary clerical help to another group. These kinds of sharing behaviors are rare in Governmental organizations.

- Some intermediate sized changes occurred like eliminating $700,000 a year in wasteful truck handling procedures in just two months. The operators at the Belle Plant did this after first-line supervisors had been removed from the shifts. The operators saw the need to eliminate the congestion caused by all the empty trucks just sitting around so they stepped in, got the trucks removed and solved the problem.

- Occasionally a large change occurred like when a new leader at the DuPont Niagara Falls Plant came into a dysfunctional, failing organization that was not able to run. He declared that "failure was no longer acceptable" and opened up the conversations to smoke out the elephants. Change happened quickly and the operation is still productive and profitable 25 years later.

- Another example of a major shift occurred in the CSR Invicta Sugar Mill in Ayr, Australia when the people cut their number of serious injuries from about 35/year to zero in just 3 weeks and sustained that performance for the next 9 months.

- Another example of a large change occurred at the DuPont Belle, WV Plant when 16 different conversions of chemical process control systems were made without building the control processes in parallel to be sure that the new processes would work before the old ones were shut down. Every one of the conversions worked, enabling the organization to cut the time and costs of these conversions by about 50%, saving millions of dollars of investment and months of time.

- Another large shift occurred in improving the productivity of the chemical operations. There were several products made in campaigns (one production sequence run after another) where the same equipment was used. All the piping, valves and reaction vessels had to be meticulously cleaned so that there was no cross contamination between the products. The time for these change-overs was reduced from about 7 weeks to about one week as everyone worked more closely and interdependently.

The people at the DuPont Belle, WV Plant, where Knowles was plant manager, leading and using principles of the Process Enneagram from 1987 to 1995, built the processes and learned to sustain this high level of work for 17 years, even though subsequent plant managers failed to follow through, retreating into their offices and themselves. Then things gradually fell apart when the BOWL was not sustained and the SOC process broke down, in this case, to the point where a man was killed in 2010 in a preventable accident 15 years after Knowles had been reassigned and had left the Plant.

Continuous dialogue and conversations along with the use of the co-created Process Enneagram map keep the BOWL alive. They are the keys for leading the organization to moving it through SOC and thriving in highly energetic, creative, effective, productive, profitable and safe ways of working at the edge of chaos. The future is built one conversation at a time! Organizations ultimately ignore this at their peril. This is the Dynamical Organizations Theory in action.

## Additional thoughts

Self-Organizing Criticality may be the basic, widespread property of the way massive shifts occur in historical pacification and civilizing processes. Steven Pinker[15] in *The Better Angels of Out Times, Why Violence Has Declined*, describes major shifts in the way violence and cruelty have decreased in human history. For example, widespread conversations through out society built the energy to eliminate the evils of burning witches occurred well before the practice officially ended. He has many examples of the frequency of war, violence and homicides showing similar decreases. Extensive conversations through the societies about the evils of these things took place leading to the decline of the frequency of these events. It is quite possible that a significant reason that the Berlin Wall came down is because of the thousands of conversations over years and years in kitchens and bars building the energy to condemning it. The pressure for change developed, the energy built and then it just seemed to come down.

The small and medium sized shifts discussed in the previous section are much more easily observed in discrete organizations like the City of Niagara Falls Leadership Team and the Belle Plant than in more massive societies. However, many small and medium sized shifts probably occurred in the examples discussed by Pinker.


## Summary

Dynamical Organizations Theory: Openness, Synthesis and Emergence is energized by the free flow of information and the important conversations throughout the organization, facilitated by the Process Enneagram in disciplined, focused, continuous conversations that are open to the free flow of information and energy; this is a dissipative process. During the course of co-creating the Process Enneagram the conversations are recorded onto the Process Enneagram Map creating the attractor or BOWL that provides both order to hold the organization together and the freedom for the people to make the best decisions for their work. This is a dissipative structure.

The map, co-created by the people with the Process Enneagram tool, reveals the strange attractor for the organization helping the people to move up the SOC pathway and hold themselves at the edge of chaos. Constant conversations facilitated by using the Process Enneagram© map, the constant revisions needed as the environment changes and the emergence of new ideas and potential, keeps the organization high on the SOC curve near the edge of chaos, and its people sustaining their work. Their Process Enneagram© map is their living strategic plan.

The Dynamical Organizations Theory: Openness, Synthesis and Emergence reveals the patterns and processes that are so critical for successful change and improvement. This Theory has proven powerful and useful for many for-profit and not- for-profit organizations in many countries around the world. In using this Theory, a better and brighter future is available for everyone.

Mark Twain once said:

> *"Coming together is the beginning.*
>
> *Keeping together is progress.*
>
> *Working together is success."*


## Footnote

This is a paper that is related to Knowles' presentation to The American Society for Cybernetics on August 7, 2017 Salem, MA


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