

**ORDER FOR FREE: EMERGENT IMPROVISATION AS A  
A SYSTEM FOR COMPOSITION AND COMMUNICATION**

**By Susan Sgorbati**, published in **The Bakery, Berlin, Germany**  
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A school of fish, a herd of elephants, a flock of birds, a swarm of bees, a brood of hens, a colony of ants, a bevy of beauties, an exaltation of larks, (Lipton) these are all examples of groups of living things. The phrasing suggests that these living things are collaborating in some way. They are in relationship with each other. Their collective behavior is not without meaning. We can discern order in this seeming chaos of groupings.

A pod of seals, a kindle of kittens, a gam of whales, a wedge of swans, a shoal of bass, a bouquet of pheasants, a gaggle of geese, a parliament of owls, (Lipton) more groupings whose terms are less known, but easily imagined in motion, shifting the landscape they inhabit, without a leader who maps out their destinations, but through an intricate self-organization, creates an essential ensemble.

These groupings in motion are an example of a kind of organic structuring that I have named “emergent improvisation”. To date, my work in the practice and performance of Emergent Improvisation has focused on improvisation in dance and music ensembles. In this context improvisation is understood to mean the spontaneous creation of integrated sound and movement by performers who are adapting to internal and external stimuli, impulses and interactions. Ordinarily, we think of order and form as externally imposed, composed or directed. In this case, however, new kinds of order emerge, not because they are preconceived or designed, but because they are the products of dynamic, self-organizing systems operating in open-ended environments.

This phenomenon – the creation of order from a rich array of self-organizing interactions – is found not only in dance and music, but also, as it turns out, in a wide variety of natural settings when a range of initial conditions gives rise to collective behavior that is both different from and more than the sum of its parts. Like certain art

forms, evolution, for example, is decidedly improvisational and emergent, as is the brain function that lies at the center of what it is to be human.

Emergent forms appear in complex, interconnected systems, where there is enough order and interaction to create recognizable pattern but where the form is open-ended enough to continuously bring in new differentiations and integrations that influence and modify the form. It is by way of these interactions that particular pathways for the development of new material are selected.

In linking the creative work of art-making to the emergent processes evident in nature, we find a basis for a rich and textured inquiry into how systems come together, transform and reassemble to create powerful instruments of communication, meaning and exchange. Emergent improvisation explores the ways in which natural processes underlie artistic expression along with the possibility that art can help illuminate natural processes.

Living things in our environment everywhere are revealing to us the profound depths of structuring processes. Whether it is human anatomical systems, animal migration patterns, insect ensembles, plant morphology, or cellular development, there are hundreds of thousands of forms that have refined themselves over centuries of motion, adapting to their surroundings. *What connects them if there is no pre-defined choreography? Who determines the sequence and the arrangements? Who do they follow? Why do they form patterns? Why are their formations so beautiful?*

Seven years ago, I was fortunate enough to meet two scientists who are masters in their fields. Their visionary thinking greatly influenced how I began to interpret my observations of improvisation ensembles in the dance studio. The first meeting was with Dr. Gerald Edelman in a residency at The Neurosciences Institute in La Jolla, California where he is the director. Dr. Edelman is also the founder of The Neurosciences Research Foundation and Chairman of the Department of Neurobiology at the Scripps Research Institute. Dr. Edelman received the Nobel Prize for Medicine in 1972. Our many

conversations and my reading his book, *A Universe of Consciousness*, resonated with my own thinking. Dr. Edelman's work includes a theory of consciousness that is based on neuronal group selection. His theory states that there are two fundamental properties of conscious states: integration and differentiation. My understanding of these properties are that every conscious state contains a unified whole and cannot be broken into individual parts, and, at the same time, each state can be highly differentiated and lead to many different behaviors. These concepts deeply resonated with my observation of the dancers and musicians. The improvisational forms I was observing in the studio were producing coherent patterns that could not be deconstructed to each dancer and musician, and yet produced endless variations. I questioned whether this level of complexity was a further amplification of the conscious state of each dancer and musician.

Another concept of Dr. Edelman's theory that resonated with my work and influenced my thinking was "the remembered present". This concept relates perception to memory. He defines perceptual categorization as "the ability to carve up the world of signals into categories adaptive for a given animal species." The remembered present links the imagined or immediate present experiences with a past history of behavior. Memory is a process linking past to present, actually reconstructing the past into the present. Memory is dynamic, and emergent, not static. This understanding of memory resulted in an improvisational ensemble form called, "Memory Form: The Remembered Present".

The second scientist whom I was fortunate to meet is Dr. Stuart Kauffman. I continue to be in collaboration and in ongoing conversations with Stuart, and he is without a doubt, one of the most significant and transformative thinkers of our time. Stuart Kauffman is considered, "The Father of Complexity". He is a founding member of The Santa Fe Institute, the leading center for the emerging sciences of complexity. Dr. Kauffman is a winner of The MacArthur Award, the former director of The Center for Biotechnology and Informatics at the University of Calgary, and is currently the 1<sup>st</sup> Macmillan Scholar-in-Residence at The University of Vermont's Complex Systems Center. In his books, *Origins of Order*, *At Home in the Universe*, *Investigations and Reinventing the Sacred*, Dr. Kauffman is interested

in seeking the construction principles of adaptation, believing that the property of such systems reside on the edge of chaos, what he calls, “order for free”. Poised between order and chaos, this is a result of a highly tuned selection process. When Stuart visited Bennington College where I teach, he came into my dance studio and inspired me to explore and name The Complex Unison form with the dancers and musicians. His latest thinking revolves around two conceptual frameworks. One is on the consequences of the unpredictability of Darwinian pre-adaptations (how the squirrel eventually becomes a flying squirrel) and on how the creative process is always pushing us into the unknown, what he calls, “the adjacent possible”. These concepts are inspiring me to research new improvisational ensemble forms based on multiple perspectives.

Now the Dance Studio turned into a laboratory for systems thinking. The scientific knowledge of these two great men combined with my own research served as the basis for my understanding of complexity in improvisational ensemble forms. I started to name patterns with the dancers I had been seeing for years. Patterns were interactions that had an understood sequence, design, arrangement or relationship. They were observable by similar but not always identical units, whereby the boundaries and constraints determined the relationships in time and space. I began to see structures emerging that encompassed those patterns. Structures defined themselves as developmental patterns; relationships of more than one pattern to each other setting up more complex organization with longer time spans. Finally, emergent compositional forms developed out of the continuous practice in patterns and structures of the ensembles of dancers and musicians, as if a kind of evolution had taken place. Emergent forms are frameworks for developmental structures. Just as maple trees are different from oak trees, although they share common characteristics of trunks, branches and leaves, so emergent forms have shared characteristics but unique, essential natures. Over time, ensembles of dancers and musicians build the capacity to identify and repeat recurring patterns of development.

There were three key concepts that emerged in this collaboration and dialogue: self-organization, emergence, and

complexity. They were all easily observable by watching the dancers and listening to the musicians.

1) Self-organization, in this context, means the ordering or structuring of people or entities that do not have a director or pre-determined script. The ordering is coming from within the system.

2) Emergence--an outcome or property of self-organization—is the process by which some new structuring/ordering, some new pattern, arises to create another idea---opening up or exposing the potential for something new.

3) Complexity, in this context, is the result of a self-organizing ensemble, creating emergent structures that connect in even more diverse forms. The dancers and musicians are exploring how the many components of a particular system give rise to a collective behavior. Complexity is a structuring at this edge of chaos, where there is enough order to recognize a pattern yet enough openness to be adaptable to new information leading to the creation of a new property or outcome.

This comprehension of structuring principles in the natural world informed my own observations, and allowed me to “see” more, and literally integrate my perceptions in what I call a more “topological” fashion, meaning that my attention could focus on a local, regional and global level simultaneously. Let me explain:

When an ensemble is composing while improvising, beginners often can only imagine their own movements, maybe in relation to the dancer next to them. In contrast, advanced improvisers, who have been practicing compositional skills for years, can pay attention to their own highly developed physical vocabulary, the dancer next to them, the small ensemble patterns around them, and the global structures in the entire space. This nesting of patterns within structures, and structures within forms, creates complexity.

How does emergent improvisation work as a system of composition?

In order for dancers to advance in the practice and performance of emergent improvisation, they train in a solo practice and an ensemble practice. An individual needs to have a diverse and original movement vocabulary, an attention to composing on a local,

regional and global ensemble level, an ability to focus on particular patterns, an understanding of spatial relationships, a tracking of the amplification of movement information as it is relayed throughout a space, and a knowledge of compositional development over time while making choices in the present. The goals of a solo practice are to advance in the skills of invention, articulation, attention, versatility, and virtuosity.

In the ensemble practice dancers begin composing with one another. This does not involve a compromise of autonomy or movement material, but includes a sharing of information and an ability to connect with physical and sensory signals. Simple patterns are observed and learned. Dancers learn unison, repetition, referencing, accumulation, framing, nesting and amplification. Emergent structures then follow. Embedding such structures as main events and choruses, waves and eddies, washes, charges, landscapes, fields and tableaux, I observed and named several emergent forms such as The Complex Unison Form (named from Kauffman's 'order for free') and The Memory Form (named after Edelman's "remembered present"). These forms each have a beginning, development and ending. There are rules that always repeat themselves, but no two compositions are exactly alike. They each have their own defining characteristics, reflect complexity and move from transitional spaces into new emergent patterns.

Emergent improvisation is also a system for communication.

Communication is a process of exchanging meaning with others. The exchange of meaning within a dance ensemble can be through use of metaphor, narrative, or physical energy—textures, geometries, and spatial patterns—but at its heart relies on awareness and responsiveness to the choice making of others. In this work we view the dance ensemble as an adaptive, complex system capable of self-organizing structuring processes. The ensemble practice in Emergent Improvisation asks a group of dancers, each with his or her own unique movement history, to commit to collectively selecting patterns in the structural development of a composition. Working in an ensemble in this way requires and encourages the development of

specific individual capacities for communication and collective choice making. While many individual capacities contribute to an ensemble's ability to self-organize, several have emerged as central to this work:

- 1) Pattern Recognition: This is the ability to observe and signal the organization of relationships as they emerge within the development of a composition.
- 2) Negotiation of Roles: This direct interaction is between the dancers. Serving the development of the composition is a priority, and noticing how one's preferences support or detract from the interests of the group composition is an interesting and challenging manifestation of the practice.
- 3) Listening: Active listening, amplifying, and supporting the choices of others are all important aspects of attention. This does not mean imitation. What it does mean is an awareness of relational possibilities and shared responsibility for compositional development. Listening can happen through several modalities, including but not limited to aural, visual, and kinesthetic sensations.
- 4) Tracking: The capacity for the dancer and musician to simultaneously track at the local, regional and global levels of the composition enables local interactions to build rich, textured global pattern formations. This collective tracking creates deep connections and investment into an emergent group sensibility. The ability to track the development of the composition and contribute to the collective decisions about the selection and adaptation of patterns is the unfolding of a form.
- 5) Attention to Development: This attention to development builds on the capacity of tracking and is also strengthened by knowledge and awareness of developmental arcs and time-based compositional skills (referencing, retrograding, accumulating, etc.). (Sgorbati, Blocker and Climer)

Most importantly, emergent improvisation calls for a balancing of individual impulse and ensemble choice making, with a sense of responsibility to the composition and immediacy in problem solving. Balancing individual impulse with collective choice making depends on the capacity to simultaneously focus on the particular, track local interactions, and remain aware of emerging global patterns. In this

work the dance ensemble is a self-regulating system, requiring feedback loops that enable constant adaptation of patterns in the development of the composition. Feedback is the constant process of initiating and responding that results in the dancers creating enough order to recognize patterns, while at the same time remaining open to the integration of new movement material. (Sgorbati, Blocker and Climer)

The relationship between agency and ensemble is complex within this practice because the compositional development and unfolding of structures is dependent on the collective decision making of an ensemble. Even distinguishing between individual and collective choice making can be difficult in this work, as it is through the emergence of an ensemble consciousness that the compositions develop. Agency and the development of one's solo practice is highly valued in the work, as the contributions of individuals enable ensemble forms to develop with richness and complexity. In many ways agency is strengthened through the process of co-creating, as having the support of others can expand one's perception of range in choice making and development. (Sgorbati, Blocker and Climer)

In developmental patterning, ensemble recognition of one pattern to the next requires ensembles to undergo states of transition. Essential to self-organizing systems is the willingness to work in a mediated space in these transitions, in which the value of co-creation overcomes conflict between agency and ensemble. If the dancers are in conflict during transitional phases and do not form patterns collectively, the system cannot self-organize. In this way, a significant aspect of agency is the decision of an individual to participate in the process of co-creation and collective meaning-making, as it expresses a value of the capacity of an ensemble to develop patterns and exchange meaning in a way that one could not do alone. (Sgorbati, Blocker and Climer)

Ensemble communication is essential to the process of self-organization as it enables the development of an ensemble consciousness from which to compose. These capacities for



communication are central to emergent structuring processes, and have implications for contexts outside of the dance ensemble.

I have worked with the Complex Unison form cross/culturally now several times. First, I worked with a group of South African dancers and American contemporary dancers. The second time I developed work with a group of American contemporary dancers and traditional Chinese folk dancers from the Yunnan Province. The third time I worked with a group of traditional concert dancers and musicians from Mongolia, an accomplished dancer from Burkina Faso in western Africa and a group of American contemporary dance students. In all of these contexts, movement styles and vocabularies that were very different merged into a new form. Since we did not speak the same language, we were only able to communicate through the non-verbal language of movement. We each had our own movement vocabulary based on our histories and identity. Retaining our autonomy but sharing this vocabulary transitioned us into a new experience where we were co-creating a new complex movement form together. This form was not representing any one particular group but emerging as a new vocabulary developed by the ensemble in the present moment. This new 'complex unison' form happened without a choreographer or director showing us how this new movement vocabulary would emerge. All three experiences were very powerful, and immediately created empathy and connection between us. This transformative experience allowed me to identify even further with self-organizing processes in the natural world, as if some larger meaning and purpose was unfolding between us, unspoken, but strong and lasting.

More and more, contemporary composing artists, whether visual, dance or music, are in this complex, interdependent world, merging their traditions with contemporary styles. African choreographers are making work on dancers in France. Dance students from all over the world study in Senegal and Belgium. Japanese choreographers make dances for West Africans. We must not give up our identity to influence and be influenced by others. We are adapting to new, creative and interesting relationships and structures. We have the choice to learn from each other and create

new global, regional and local forms or destroy each other, fighting over whom should impose their will. We have the potential to create ensembles of empathetic relationships. We are in a process of collective meaning-making, merging our practices to create new forms for a challenging future. I believe this has profound meaning for the way we can experience the diversity of our world and yet maintain our uniqueness. Artists will always be out in front providing a vision for how we can affirm life. If truly “order is for free”, and that an emergent collective “order” is providing us with meaning and knowledge, then it follows that we can participate in ensemble building to discover it. Maybe then we don’t have to spend so much time finding a way to “pay” for it or to ask someone to tell us what it is and how to find it. This order reveals itself in the beauty of the natural world all around us and in the complexity within us. It is this essential connection that we can find with each other and in the patterns that we build together.

\*The phrase in the title of this essay, “Order for Free” was first named by scientist, Stuart Kauffman, in his book, *“The Origins of Order”* and has been adapted for emergent improvisation.

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Susan Sgorbati, March 2012