



# IMPROVISATION INQUIRER

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## Susan Sgorbati "Emerges" a New Type of Improv

**By Ava Fitzpatrick**

Susan Sgorbati began dancing at the Philadelphia Dance Academy, under the instruction of Nadia Chilkovsky. Chilkovsky danced with the early company of Martha Gra-

ham, and also studied with an Isadorable, which is an Isadora Duncan dancer. Sgorbati says, "My love of improvisation literally began with Duncan dancing. We put on scarves, we were young, and we were basically just expressing

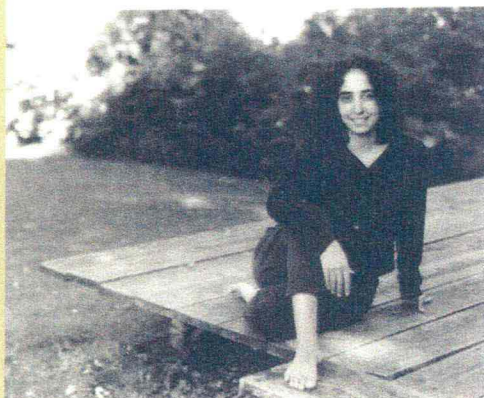
ourselves all over the place; it was a great way to enter dance as a young person."

At age 18, Sgorbati decided that she wanted to be serious about dance, but her parents insisted that she attend college; so after high school Sgorbati attended Ben-

nington College in Vermont. At that time Bennington was one of the few schools that offered a degree in dance. Their program was deeply engrained in Graham technique and Limon technique. Later Viola Farber came to Bennington and started teaching Cunningham technique, which struck Sgorbati's interest in Cunningham.

During her junior year of college, in the late 60s, early 70s, Judith Dunn came to Bennington's campus. Dunn had studied with Robert Dunn at the Judson Church in New York.

See **Sgorbati**, Page 2



Susan Sgorbati of Bennington College presents a new way to look at improvisation

## Two Worlds Collide: The interplay between science and dance

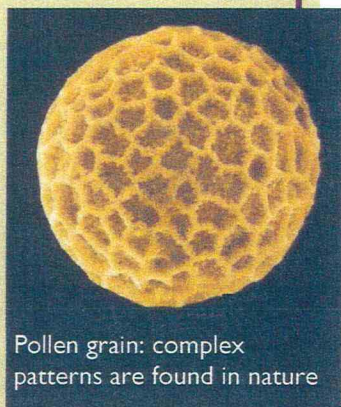
**By Amy Copeland**

Every day, you are surrounded by patterns of organization. You may notice the synchronized gliding of schools of fish, the coordinated swoops of flocking birds, or the complex social organization of ant colonies. Other patterns emerge as well,

which have slowly evolved so that now all we glimpse is the final product. These manifest as the stripes of a zebra, scales of a butterfly, and the patterns on the surface of pollen grains. "People have long been tempted to find some obscure "intelligence" behind all these biological patterns" (Camazine). It is

becoming increasingly clear, however, that in many cases there does not seem to be a leader in these organizational processes. Somehow, molecules, cells, and individual organisms can gracefully organize themselves without an outside director.

See **Science**, Page 2



Pollen grain: complex patterns are found in nature



## Sgorbati | Emergent improvisation takes the stage

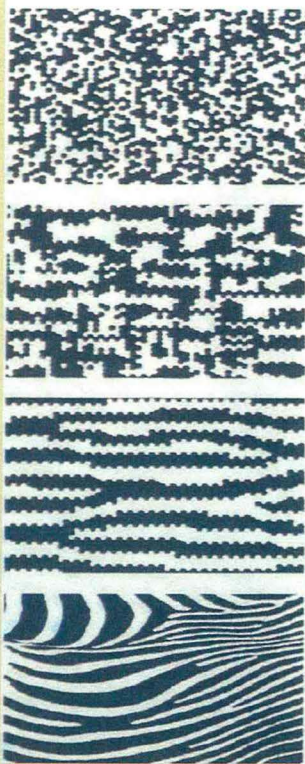
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Sgorbati explained, "In the early 70s, the whole culture was kind of in revolution. Judson Church movement was about bringing a lot pedestrian movement into dance; now you could walk and run. Things like that were not acceptable on the stage before the early 70s. So all of the sudden you were allowed to bring whatever you wanted into dance". Judith Dunn began working with a jazz musician, Bill Dickson, and they became very serious about performing improvisation. Sgorbati informed

us, "This was very radical. Improvisation in those days had a worse name than it does today, now people are beginning to understand that it has some real structure and that you can get advanced in it, you can recognize advanced improvisers. In those days if you wanted to go out and noodle around on the floor that was improvisation. Judy and Bill were the first people I came across that were very serious about improvisation. We would have these long rehearsal sessions, and there were always live musicians, and they were working in the same way that we were.

I got very serious with Judy and Bill, I got really excited about improvisation, and I decided this is really what I wanted to do. So then on that's what really grabbed me in dance." After college Sgorbati went away and performed with a group of musicians and dancers, but would later return to Bennington after her former teacher Judith Nunn invited her back to teach. There, Sgorbati served as the Dean of Faculty for several years. During this period her office was relocated to the science building. Sgorbati explained with laughter, "It's unusual for a dancer to be in a

science building". There she met an evolutionary biologist, who became interested in her work in the studio. She says, "In our conversations and when he came to the studio he recognized that what I was doing with improvisation in the studio had a direct relationship with evolutionary structures literally with nature and in the brain." Sgorbati began speaking with scientists at the Neurosciences Institute in La Jolla, California. These conversations about the relationship of complex systems led to what Sgorbati calls, "emergent improvisation".



Cellular automaton generates a design similar to the color patterns of the zebra

## Science | Common patterns of dance and science emerge

*Continued from page 1*

As scientists began to realize this, a dancer came onto the scene. Susan Sgorbati, a teacher at Bennington College, believes that the patterns that emerge in complex systems may follow the same general laws as the recurring patterns that appear in her dance improvisation classes. Though many complex designs have creators, and hierarchy has a place in the world for imparting order, self-organization is a powerful device for

achieving structure in nature, and in this idea lay many questions with answers waiting to be revealed. The main concept of self-organization involves individuals using simple rules and dynamic, local interactions to "give rise to spontaneous emergence of pattern, order, and structure on a global, system-wide scale" (Camazine). These simple rules can be used in computer modeling programs, coined cellular automaton, to show how emergence can occur.

For example, a zebra's coat colors are determined by activating molecules that allow pigment to appear. The animal may start with randomly distributed molecular activator. Then a simple rule is applied: activators near each other reinforce their own signals while inhibiting pigment production in nonadjacent skin patches. In just a few cycles using these rules a pattern is formed closely mimicking the stripes of a zebra.

See **Science**, Page 5



# Health & Science

## Dance Big, Your Neurons Depend on It

**By Blake Seidel**

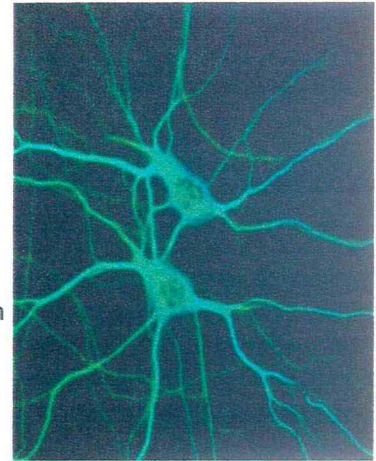
Neurons are the basis for every action that we take in life. To write this article, my brain is sending impulses to specific regions of my motor cortex through different neurons to move the muscles in my fingers, while simultaneously accessing my internal map of where my hands are on the keyboard. It is common knowledge that the human brain is hundreds of times faster than the fastest computer, but what is more incredible is how we use it. Susan Sgorbati, a dance professor at Bennington College, is examining this very topic. She is curious how neural networks create improvisational pieces and affect the

"remembered present", which is how memory is reconstructed in the present moment, not from a place of storage from the past. She first became interested in the processes of neural networks after many years of improvisational work. As her wisdom and experience of improvisational dance grew, the more she was able to document and be aware of how she was improvising and the patterns she and her dancers made. The process of creating patterns within improvisational dance is amazingly similar to how neural networks form within the brain and throughout the body. "With the dancers, there's endless differentiation of how patterns get replicated or how a new pattern emerges from the

pattern before. They're building from a simple unison pattern to greater and greater complexity." (Steinberg, p. 26)

The concept of the remembered present has deeply affected her improvisational work and even caused her to create a new form of improvisation called the "memory form". She describes the process of creating memory form in an article written in the 2006 June issue of *Dance Magazine*. First, the dancers completed two run-throughs of a phrase they had previously choreographed.

See **Neurons**, Page 5

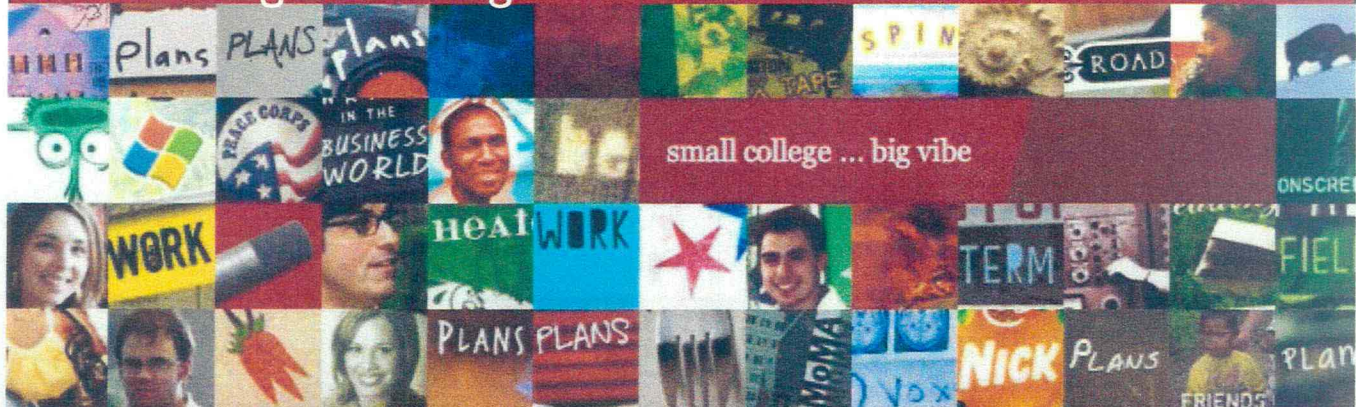


**Each neuron in the brain has on average 7,000 synaptic connections to other neurons.**

**"No one tells each individual neuron what to do, they just do it."**

**-Anil Seth**

## Bennington College



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# Opinion

I am a dance student at the University of Virginia and I heard about your feature on Susan Sgorbati. I was fortunate enough to observe one of her classes recently and was hoping I could give some insight into the movement practices of Emergent Improvisation.

When I read over the syllabus for Sgorbati's class I was fairly intimidated. Far from the stereotype that improvisation is simply dancing what one feels, Sgorbati's movement involves a large vocabulary to even attempt improvisational work. Emergent

**"The power lies  
in the  
performance."**

Improvisation came about from Sgorbati's observations on nature and biology. Sgorbati suggests that we should notice these natural systems and use them to inform our own movement.

There are three main elements to Emergent Improvisation. The first is self-organization, "configurations of individual components/interactions in a system exert an organizing effect

on the entire ensemble" (Sgorbati March 2007). In layman's terms Sgorbati is very focused on the absence of an artistic director or choreographer that orders a dancer's movement. A dancer should look within and use their knowledge of their body and their body's movement tendencies to create new improvised movement.

In class the dancers practice self-organization through "Solo Practice." First the dancers focus internally. Through body scans and body mapping the dancers can really prepare the body for movement and analyze how their body will feel within it. Then the dancers switch to external sensory stimuli to inform their movement. They walk the space, really taking in the environment and use all of their senses to explore the environment around them.

These exercises are necessary for embodiment of the movement, which allows the dancer to control their thinking processes and truly be in the moment. Sgorbati feels that improvisation is a complex and deeply intelligent process and "you couldn't just walk off the street or be a dancer practiced in

other traditions and just be able to do this kind of work" (Sgorbati 2005).

The next element of Sgorbati's improvisation is "Emergence." Sgorbati defines emergence as "a phenomenon of self-organized criticality, whereby a new system surfaces with a newly intact system of organization" (Sgorbati March 2007). These new systems follow patterns from self-organizations but they are completely new ideas of movement. In order to accomplish emergence Sgorbati emphasizes the need for a vast vocabulary of movement. The packet of terms she gave me is seven pages in length and derives from terms in dance, biology, and psychology. The task seemed daunting but by learning and embodying these terms Sgorbati claims that a dancer "perfect[s] and discover[s] your own physical and sonic technique" (Sgorbati 2005).

The third element of Emergent Improvisation is complexity. The easiest way to complicate improvisation is by expanding the process out to a group. In class this is accomplished through "ensemble practice." While the autonomy of the dancer is never com-

promised, the complexity arises from being involved in both internal and external stimuli and responding to them. Sgorbati feels that "the power [of dance] lies in the performance" (Sgorbati 2005). To end the movement in class she asks the dancers to focus on the particulars of their movement. It can be something specific or general but using the vocabulary discussed in class they must build on their skills as dancers and improvisors.

I found the class to be very interesting and helpful in understanding Emergent Improvisation. When I first tried to research the topic the massive vocabulary and complexity of the theory scared me away but actually embodying the movement aided in my comprehension of the difficult concepts. Some of Sgorbati's exercises, such as walking the space and body scans, were similar to activities I have experienced in my Improvisation class at University of Virginia, but it was an excellent opportunity to expand my knowledge on different improvisation styles and learn about Bennington College's dance program.

**Kathryn Grossman  
Charlottesville, VA**



## Neurons | Reconstructed dreams shed light on neural networks

*Continued from page 3*

With each subsequent run-through, the dancers and observers start to notice that the phrase retained many of the same ideas and movements of the original phrase, but their reconstructions filled in missing gaps, allowing the movement to evolve, but also stay the same. One of the main goals of memory form is to involve the audience at a deeper level. This happens naturally because the relationship between the audience and the dancers grow and

evolve along with the movement. They establish a connection with the movement by seeing the identical run-throughs, but are drawn in by the changes. Something about knowing that they are witnessing the same thing as the dancers, something that is not choreographed, but unfolding for the first and only time before their eyes, establishes a secure bond between performer and audience member. Next semester, Susan will be working with her students on a new improvisational dance form, the "dream form". This form

asks questions such as, what creates dream images, improvisationally? How do we see when we are dreaming? How do you recreate a dream while you are awake? How do you watch a dream? Psychologists have been debating over the origins of dreams for years. Freud thought that they were unconscious, repressed memories bubbling to the surface. Humanists think that they are representations of our desires. Today, psychologists think that they are random firings of neurons in one's

brain. It will be interesting to see what answers Susan finds in her work with the dream form, keeping in mind her previous work with neural impulses from the brain to the body. If they are just random neural impulses, she should be able to replicate them without much difficulty. To be on the safe side, I hope she stays away from nightmares.

## Science | Common patterns of dance and science emerge

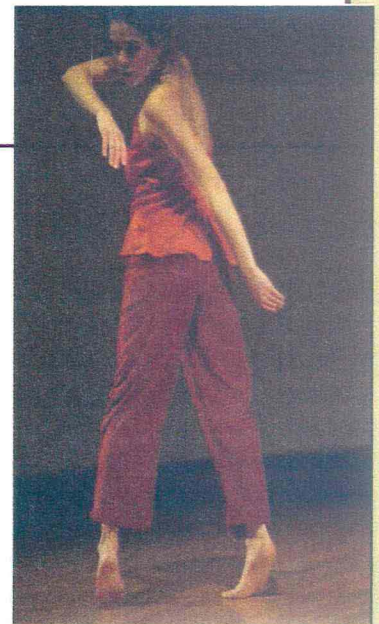
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Sgorbati has begun exploring this idea with her dancers and musicians, giving them simple rules to follow and watching the patterns evolve. The patterns that arise depend on the starting conditions and the specific rules applied in both dance, and the computerized processes. She has learned that emergent forms live in a balance between order and chaos. They only exist in complex interconnected systems with enough order to create a pattern but where the form is open-ended enough to continuously

bring in new inspiration to modify the form. She has also focused extensively on signaling possibilities and using a heightened awareness to sense local and global relationships. The dancers have to constantly adapt to internal and external stimuli, impulses, and interactions to inform their movement. "In order for a form to emerge, it has to keep refining itself and discarding what is not useful, just as in selective evolution" (Sgorbati). Though she is aware that they processes of Emergence are not identical across lineages, using

dancers could be helpful in learning more about the possibilities of complex systems in nature. The dancers can discuss what they felt, what worked, what didn't work. In short, molecules cannot talk – but humans can. Perhaps open dialogue about these processes between artists and scientists may lead to developing a general theory of complex emergent systems. Susan Sgorbati has worked with many influential scientists including Bruce Weber, Gerald Edelman, Anil Seth, and Stuart Kauffman, and is continu-

ing her search for "deep universal structuring principles that cross disciplines of art, science, and human culture" (Sgorbati).





# Lifestyle

Dear Susan,

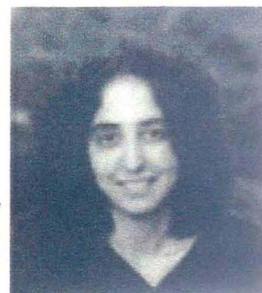
I just started an improvisational dance class a few weeks ago and I feel stupid and unsuccessful. Some of my friends prefer ballet and they laugh at my new improv dance style. I wonder if I should just give up on dance improv and stick with more established and traditional forms instead. What do you think?

— Confused in Colorado

***“Don’t judge  
yourself or other  
dancers.”***

DEAR CONFUSED - Dance improvisation is an art form, just like ballet. Don’t let people look down on you. The first guideline in dance improvisation is: Don’t judge yourself or other dancers. Stay as present as you can in your work. Not judging will help you accept your own dance style and help you open up to a broader range of your own capacities. Don’t make assumptions when it comes to improv dance or any other dance form. You don’t know everything about improv dance after a few weeks but you don’t know nothing either. Have a little faith in the process and you’ll really grow in just a few months.

**Dear**  
*Susan*



Dear Susan,

My new boyfriend and I are both improvisational dancers. He’s really great but whenever we improvise a duet he always looks to me for initiation. I’m worried this is also happening in our relationship. He never makes decisions. What should I do?

— Tiptoes in Tampa

DEAR TIPTOES- If there’s one thing I’ve learned it’s that dance improv represents real life. If a dancer is too dependent and looking to another person for material this is a problem. Also if a dancer takes charge this is a problem. The dance should be an ensemble. Talk to your new boyfriend to get him to lead, in dance as well as life. If improvisational dance doesn’t represent life I don’t know what does.

## Spring Dance Auditions

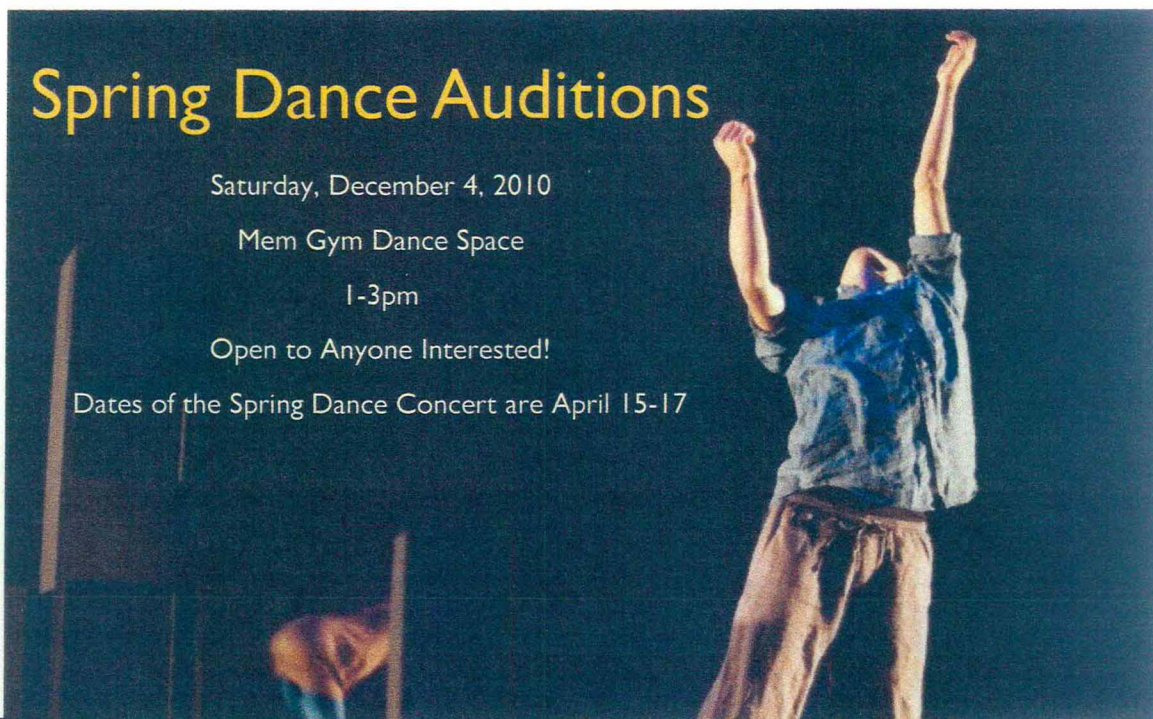
Saturday, December 4, 2010

Mem Gym Dance Space

1-3pm

Open to Anyone Interested!

Dates of the Spring Dance Concert are April 15-17





# Entertainment



## Susan Sgorbati and Elliot Caplan Film Coming to a Box Office Near You!

**By Ava Fitzpatrick**

Improver Susan Sgorbati has teamed up with filmmaker, Elliot Caplan, for a dance for the camera and emergent improvisation piece, *Convergence: The Emergent Improvisation Film*. Elliot Caplan is famous for his collaborations with Merce Cunningham and John Cage, such as *Beach Birds for Camera* and *Points in Space*. Their goal in this film is to reveal "emergent improvisation structuring

principles through movement and cinematography in order to inform a wide audience of its diverse applications" (Caplan, Sgorbati, 2010). The film will feature professional dancers from: Trisha Brown Dance Company, Susan Marshall Dance Company, five graduates of Bennington College; and it will also include interviews of the scientist that support Sgorbati's research. In an interview with *Improvisation Inquirer*,

Sgorbati and two of her dancers, Emily Climer and Marie Blocker, shared some of their experiences and challenges with filming improvisation. They explained that there have never been improvisation rules set for film, so they have been creating their own rules and figuring out things as they go along. Spatially the dancers have to adapt and adjust to the camera's frame and the dancers must also selectively choose compo-

tional tools that read best on camera. One dancer said, "We have to be just as active as Elliot is about thinking how the camera is seeing, its not like there is a choreographer and Elliot moves to get the different shots that he wants". In closing Sgorbati told us, "Just like improvisation, we're in a process that we don't know where it's going end up".

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**The Literature Scoop** Check out these articles and papers to learn more about Sgorbati's work and influences

Patterns in Nature: Natural History - Scott Camazine, June 2003

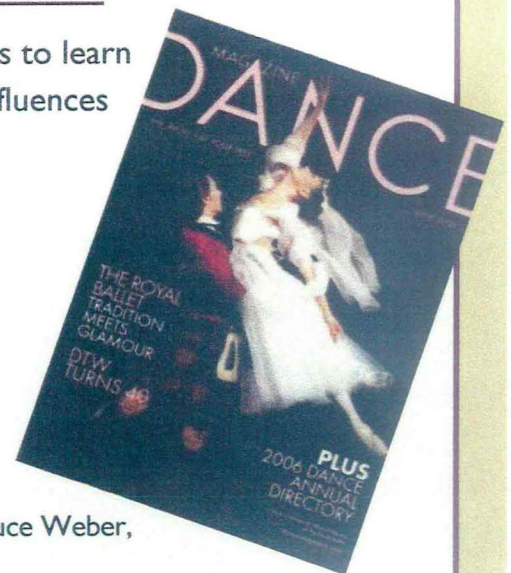
By Chance or By Design? Dance Magazine - Janice Steinberg, June 2006

Emergent Improvisation: BrainMatters, Spring 2006

Personal Interview with Susan Sgorbati and lesson outlines - Fall 2010

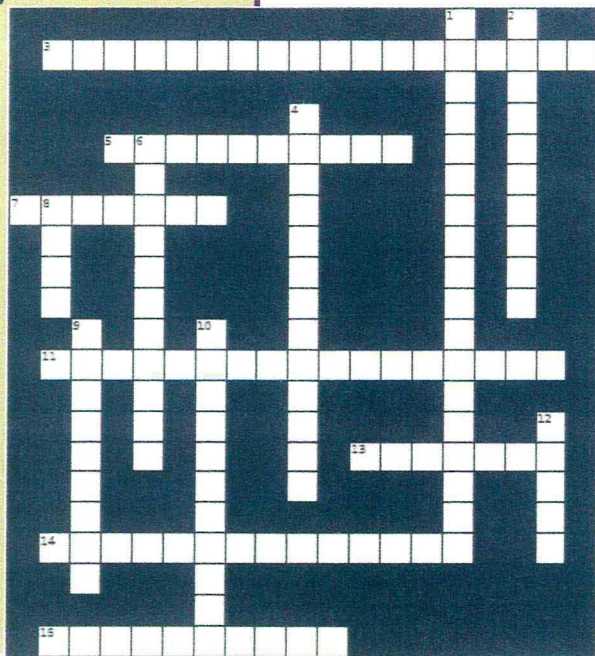
Essay on Emergent Improvisation - Susan Sgorbati, Sep. 2005

How Deep and Broad are the Laws of Emergence? Susan Sgorbati and Bruce Weber,





## Daily Crossword



## Weather Corner

Bennington, VT

Dec. 1 - Dec. 4



54°F | 30°F



38°F | 28°F



38°F | 26°F



36°F | 23°F

Look like your idea of a good time?



Join the UVA Dance Department for our  
Winter Contact improv Jam!

Friday, Dec. 3rd  
5-7pm

## Birds of a Feather BY JUNE STURM

