

Earthscore for Artists

A systemic approach to collaboration

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Purpose

The purpose of this system is to provide a way for artists to work with other artists. The system fosters mutual respect for each other's singularity so that the quality of art a group produces together goes beyond what individuals could do alone. Originally, I developed this system to interpret ecologies with video and this document explains the system in terms of ecological themes and the video medium. However, just as the best novelists are free to address any topic, so collaborating artists are free to use this system with any media, to address any theme. By calling the system *Earthscore*, I am expressing my hope that the collaborative art produced in accord with this system will nurture sustainable ways of living with the earth. This is simply a hope. Any imposed agenda, even an ecological agenda, corrupts art. Works of art must achieve their own integration, free from any external purpose.

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The System

As artists, we understand the importance of preserving our freedom of choice in making art. Whether our choices are in the selection of a word, the stroke of a brush, the angle of a camera, the decision point for an edit, or the shade of blue: we must be free to choose. Without such freedom of choice, artists can only replicate, they cannot contribute anything new. Historically, loose associations of artists have nurtured each other's freedom. So why introduce a 'system' for collaboration; how can a system secure artistic choices?

Consider the individual example of Paul Cezanne painting with what he fondly called *his little blues, his little browns and his little whites*. Cezanne may choose brown over white, and blue over brown but that does not mean he automatically chooses blue over white, as if his beloved colors were ranked in a hierarchy. Depending on the composition, he may well choose white over blue. In his art making, he presumes a circuitry of choices.

In Earthscore, artists have choices within a circuit that parallel Cézanne's choices regarding his paints. Given this circuitry of choices, artists can compose together. For instance, imagine three artists encamped at one of Cézanne's mountains taking turns observing the landscape with video cameras. Imagine the same trio working together to compose a multiscreen video exhibit that genuinely respects the singularity of each artist's perception and goes beyond what each

artist could do alone. Such collaborations, guided by a formal system, might take place in many media among many different types of artists with varying personalities and talents.

History

Though applicable to any type of art production, the Earthscore System for collaboration grows out of the history of video art. The spontaneous beginning of the New York City video moment during the late sixties included four collectives: People's Video Theatre, Global Village, the Videofreex and Raindance. Collectives, of course, made access to resources and equipment easier for individuals, but there was something more. Recording, replaying and editing time-images in the new medium of portable video offered such a significant jump in the perceptual information available for making art that the processing of that information by groups made obvious sense. Ultimately however, the collectives failed to develop comprehensive categories or sustainable practices for processing perceptual information as peers. The collectives dissolved and the history of video art became the history of individual artists.

As a member of Raindance, the video collective that thought of itself as a think tank for alternate media, I learned what I could from this failure. I went on to study systems theory and to experiment with using video to interpret the natural world. I continued to work on peer strategies for collaboration that combine different perceptions in the context of ecology. Now, more than thirty years after the spontaneity of Raindance, when digital technologies, HDTV and the broad band internet are providing yet another quantum jump in perceptible information, I offer a systemic approach to sustainable collaboration in the production of art. (While a digital, Internet version of this system is not made explicit in this document, such a version might easily be built and would certainly enhance collaborative production.)

For this system to become operative, it needs to be understood abstractly in terms of the code in which the system is written. The code is a set of rules for combining interpersonal relating with producing signs. Within this set of rules, collaborative creativity can flourish. My advice is that you attempt to use this system only after you understand how it works, the 'rules' if you will. Of course, the first thing many artists think of when they hear the word 'rules' is 'How can I break them?'. The stock answer holds: 'Understand the rules first, then go beyond them'.

Art

Systems theorists argue that all communication is coded in rules. Language makes it possible for two people to agree they are talking about the same information and, based on that agreement, to go on and create more successful communication. Indeed, modern society differentiates itself into functional "subsystems" on the basis of such yes/no agreements. In general, these subsystems operate according to codified binary distinctions: for example, the economy distinguishes profit from loss; - law distinguishes the legal from the illegal; - science distinguishes the true from the false; - politics distinguishes those in power from those not in power; - religion distinguishes the immanent from the transcendent; - education distinguishes passing from failing. These subsystems are autopoietic, that is to say, they are organized to produce and reproduce themselves. While they might develop structural coupling with other subsystems around common themes, such as when science and religion enter into a dialogue to address

ethical issues in medicine, operationally, these subsystems are closed. In order to work at all, these subsystems must maintain autonomy and their boundaries must be respected. Using profits gained in commerce to bribe judges appointed by the government is not allowed.

Given this operational closure, each autonomous subsystem can react to outside conditions, such as environmental degradation, only within the terms of its own binary code. Political leaders cannot enact environmental legislation without a constituency. A religion based on transcendence must see environmental problems in terms of its tradition or it cannot respond. Regardless of environmental consequences, a business must be profitable, or there is no business. A third way is not given.

Art offers a third way. Art escapes the 'yes' and 'no' of binary linguistic coding by functioning in terms of perception. Art makes the environment 'outside' language available without reducing it to language. Cezanne shows us the mountain. One can, of course, always debate whether or not one thinks an artwork is a success, but art's renderings of perception and feats of imagination are not themselves subject to a strict binary code. The social systems that gather around modern art: art schools, galleries, museums and funding agencies are all operationally closed around perception. Original, first order observations, rendered by artists, are circulated through the second order observations of different tiers of art viewers, from curators to the causal public.

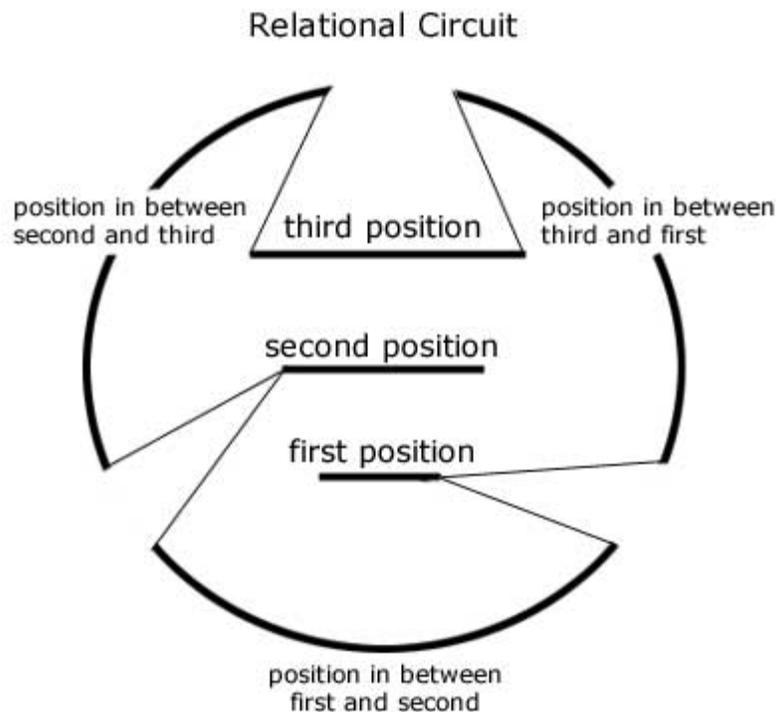
The Earthscore System is an autopoietic approach to generating art. It operates in terms of a triadic code that precludes the 'yes' and 'no' of

binary code. By adhering to the triadic code of Earthscore, artists can prevent their work from being turned into 'yes' and 'no' propaganda for or against particular issues. Like other works of art, artwork produced using the Earthscore System is most readily presented for second order observation through the social systems that have grown up around modern art. The bonus for the social systems surrounding art is that Earthscore can also be used to build explicit working relationships with other subsystems in modern society without forfeiting artistic autonomy. In effect, Earthscore offers a system that supports collaborative innovation both within the art world and between the art world and other functional subsystems in modern society.

Code

Earthscore orchestrates collaboration in terms of three irreducible categories: firstness, secondness and thirdness. Briefly, firstness has to do with quality and feeling, secondness with fact and reaction, and thirdness with pattern and mediation. These three comprehensive categories are codified as three unambiguous positions in a relational circuit. (The relational circuit is shown in figure 1 below. See also Ryan 1993 and Peirce 1998.)

Figure 1



In the Earthscore system, the relational circuit is outlined on the floor as a two dimensional diagram to guide a process of collaboration called *Threeing*. *Threeing* is a kind of yoga of relationships in which three artists voluntarily take turns playing three different roles based on the positions of firstness, secondness and thirdness. These broad and inclusive categories defy easy labels. You might see them, in part, as describing aspects of yourself. Facets of the self that correspond to firstness include feelings, intuitions, and sensitivity to immediate qualities in the surrounding world. Facets corresponding to secondness include responsiveness to specific facts, capacity for action and strength of will. Facets of self-corresponding to thirdness include an ability to mediate between qualities and facts, awareness of broad patterns and an ability to think about the future. Participating in

Threeing involves cultivating the range of sensibility and skills proper to these three aspects.

In the actual practice, these three aspects of yourself support three roles for relating. The first role, the initiator, invites you to express your sensibilities and feelings spontaneously, to be such as you are regardless of any other. In the second role, the reactor, you maintain your own sensibilities, but you express yourself in response, even reaction to the person in the first role. The third role, the mediator, is the most complex. You attend to both the spontaneity in the first role and the responsiveness in the second role and mediate between them without losing touch with your own sensibilities. All artists involved learn a flow pattern for moving through the circuit together without language. Like the postures in Yoga, the flow pattern does not change. Within this flow pattern, practitioners can compose a rich and varied range of physical, mental, and emotional activity.

Open Code

The code for the Earthscore System consists of the categories of firstness, secondness and thirdness, the six empty positions organized by the relational circuit, and the rules for the performance of *Threeing*. The relational circuit is the key to the consistency of the code, both in terms of distributing the three categories positionally and supplying unambiguous positions for the practice of *Threeing*. As we will see below, this code is supplemented with procedures for formal discussions, recombining participants, dividing tasks, and making decisions. The code is open. Whatever information about the code and

its supplements required to reprogram from the code is available in this document and in the bibliographic references.

Reprogramming

Earthscore is an operating system that includes the code and its supplements. This document applies the Earthscore operating system to the formation of collaboratives for producing art about any theme in any media. Included below in section four are specific instructions for organizing the collaboratives. These instructions can be considered programs for organizing artistic collaboration in keeping with the Earthscore System. Revising a program is distinguished from restructuring the system. One can change a program without changing the system, i.e., the code and its supplements. Revisions, corrections and additions to the program can be developed by staying consistent with the code. While it is conceivable that this same code could be used to write effective programs in the functional domain of other subsystems; such as law, business, education or even religion, this document limits itself by applying the Earthscore system to the production of art.

Artists using the Earthscore System should review their use periodically to determine if their collaboration can be reprogrammed and made more suitable to their media, themes and situations. For example, a collaborative music group might opt to grow beyond the nine-person membership described below to include dancers and digital video artists. To do so, they would need to develop more specific governing procedures to accommodate the change in scale and

media without undoing the autopoietic or self-making character of the system.

The Practice

The regular practice of *Threeing* provides artists with a common understanding of the three irreducible categories of collaboration. Expressiveness with each other in the roles of firstness, secondness and thirdness grounds the group's perceptual skills for observing their environment in the categories of firstness, secondness and thirdness. In a sense, the collaborative must continually recreate itself by practice. Stretching the ability to interface with each other in terms of the three categories will generate a budget of flexibility for producing art. Accordingly, participants should arrange to practice as much as is feasible on a regular basis. A minimum standard should be set according to the circumstances. What is necessary is to maintain a recurring, autopoietic performance of *Threeing* that can be trusted.

The flow pattern for *Threeing* is based on characteristics that are common to all humans. We all have a front and back; we all can move and make sounds. 'Flying' is based on a reflex common to all infants; if you lift the infant off its back a few inches and let the infant go, it will throw its shoulders back (Moreau Reflex). 'Holding' is based on another common pattern called the startle response. If you make a loud noise an infant will draw its shoulders together. Although I myself don't see how, it may be possible to expand the rules for *Threeing* in keeping with characteristics common to our species and in compliance with the three categories as encoded in the relational circuit.

The Tricolor Talking Stick

The nonverbal practice of *Threeing* can also be transformed into a practice for discussion within the collaborative using the device of a 'talking stick', - a prop to remind speakers and listeners of their roles. A Tricolor Talking Stick is a round, fifteen-inch length of wood with a diameter between one and three inches. The stick is painted with three five-inch bands of solid color: yellow, red, and blue. The red band is in the middle of the stick.

The person who holds the stick speaks while others listen. By holding a particular color on the stick, the speaker indicates that he or she is speaking in a particular role. By painting the stick with three colors, the three roles are kept clear and the discussion moves. Each person able is to explore different modes of expression and reception. To learn verbal *Threeing*, three people take turns in the different roles by passing the stick around and holding the color that indicates their roles at the moment. Holding the yellow band indicates that one is playing the first role, that of initiator. Holding the red band indicates that one is playing the second role, that of reactor. Holding blue indicates the third role, that of mediator. Artists can learn to connect their nonverbal moves such as spontaneous gestures with their verbal moves such as the initiation of a new idea. Artist may also want to generate other props for ordering discussion appropriate to their projects. As long as the props offer a clear way to rotate through the three roles in compliance with the relational circuit, such props are

appropriate. Once the roles are learned, discussions may take place without props.

Threeing

The integrity of collaboration depends on participants opening themselves up and trusting each other in the practice of *Threeing*. Opening up to each other is possible because the formal practice precludes interpersonal politics. One is never forced to choose between two others. By neutralizing the excluding effect of choice on relationships, the practice of *Threeing* protects participants from the gridlock of interpersonal alliances. One makes choices between positions in a 'relational circuit' that seek a dynamic balance among all participants. Each artist reserves the right to judge whether or not the dynamics are balanced. If an artist decides that the dynamics are not in balance, and will not be balanced, that artist may simply withdraw from the trio.

Because Earthscore thrives on the singular sensibilities of artists, artists should also withdraw if they feel their singularity is not being respected. Mutual cultivation of singularity among artists enhances the perception of differences in their environment and their sophistication in producing art. Only the individual artist can declare whether his or her own artistic singularity is being respected. If an artist feels that his or her singularity is not being respected and his or her freedom of choice is being compromised, that artist is free to leave. Leaving a trio does not necessarily mean resigning from the collaborative (See sponsorship below). If an artist does resign from the collaborative because he or she feels his or her singularity is not being cultivated, the collaborative must honor such a withdrawal.

To further preclude unbalanced dynamics, the Earthscore System includes rules for recombining participants, dividing tasks in a fair and envy free way, and making decisions.

Recombining

If a participant in a trio is questioning whether his or her singularity or freedom is being compromised, that artist should announce the difficulty to the remaining two artists and give them a chance to correct the situation. If no correction is forthcoming, let the artist withdraw and let the trio dissolve. Once a trio has dissolved, no two members of that trio can recombine with each other until each of the three has participated in at least one other trio.

Fair Division of Tasks

All three members of the trio compile a list of the tasks necessary to complete the art project. A divides the entire list into three sub-lists that he or she considers a fair division. B trims these three sub-lists in a way B thinks is fair, setting aside another list of the trimmings. C picks one of the three task sub-lists that he or she wants to do. Since C has the first pick, C will be happy. If a list that B trimmed is still available, B must pick that list; otherwise, B can pick any remaining list. Because B trimmed the lists knowing he or she might have to take any list trimmed, B will be content. Since A divided up the lists in the first place, any untrimmed list that is left will appear fair to A

and A will be content. The procedure is repeated with the trimmings until no task is left out. (See Brahms and Taylor 1996).

Decision Making

To make possible three person decision making that does not degenerate into disrupting alliances, a fourth person is necessary. The selection of a fourth party makes it possible to implement a formal procedure for decision making that does not ally two against one. Here is how the procedure works, beginning with the selection of the fourth party.

- A, B and C agree to invite D as the facilitator.
- A, B and C invite D to facilitate their collaboration, explaining the system and D's role.
- D accepts or declines.
- If D declines, A, B and C agree on another person to act as D and offer the invitation until someone accepts.

Decision-making should rely on available information. Besides the roles of initiator, respondent and mediator, the three roles in *Threeing* also correspond to three different ways of knowing: intuitive (first role), fact-finding (second role) and reasoning (third role). Before they make any decisions, participants can take turns gathering knowledge according to these roles. Discussing their findings using the Talking Stick will facilitate

the decision making. The decision making procedure itself works as follows.

When three people work together on a project, the non-art aspects of the project are divided up into three parts, using the fair division procedure. As much as is possible, each sub-list should correspond to one of the three roles. Each person takes, as their domain that sub-list that best corresponds to their skills. For example, in dividing up the tasks in presenting an installation, the three sub-lists might separate out in the following way:

first skill set, - organizing the actual configuration and presentation of the artwork;

second skill set, - selecting the possible venues, arranging for equipment, taking care of budget and details;

third skill set, - making the contacts and interpreting the work for various venues, viewers and critics.

Once this arrangement is established, each of the three is obliged to keep the other two informed of their decisions so any objection can be made with sufficient time available to review the decision. The decision making rule can then be stated as follows: No person's decision in his or her own domain can be overridden by the two other members of the trio *unless* the predesignated fourth party agrees with the other two. Then three can overrule one. However, if the fourth party does not agree with the two, then the decision made by the one in

charge of the domain stands. Observing this decision making rule, no decision will be overruled in an arbitrary chain of command. Moreover, participants can use the two others plus the fourth party to review risky decisions before implementation.

Transitioning In and Out of *Threeing*

The practice of *Threeing* creates a habit of relationships that tends to make people open but also vulnerable. Accordingly, artists need to transition in and out of *Threeing* in a way that is clearly marked. Without healthy transitions, artists may unconsciously try to interact with non-practitioners using emotional habits learned in *Threeing*, leaving them open to abuse. Normally when three people interact, two tend to combine and exclude the third party. As the adage goes “Two’s company, three’s a crowd”. Through experience, we all know how to align ourselves and protect ourselves in the course of these ‘normal’ interactions, even if we are not conscious of how we go about. In *Threeing*, two against one dynamics are precluded and an openness to two others takes over. In general, it is this simultaneous openness to two others that will not work in normal everyday interactions, hence the need for clear transitions before and after the practice of *Threeing*.

Before moving into *Threeing*, sitting quietly or spending some time in an individual meditation will allow artists to ready themselves for opening up. Transitioning out requires artists’ to transform the shared use of the categories of firstness, secondness and thirdness to the personal use of those categories. Besides meditation, this

transformation can be carried out by a conversation among the artists about reentering their individual daily lives in terms of relevant feelings (firstness), facts (secondness), and patterns (thirdness).

Producing Art

The practice of *Threeing* makes possible the production of collaborative art. As much as possible, production sessions should be scheduled shortly after practice sessions. Inside the practice of *Threeing*, everything is organized by the relational circuit in terms of firstness, secondness and thirdness. Outside the practice of *Threeing*, everything can be understood in terms of firstness, secondness and thirdness. Artists who practice *Threeing* can take in whatever is outside and reorganize it as art by reworking it in compliance with the relational circuit. The practice of *Threeing* in compliance with the relational circuit continually recreates a relational understanding among artists in terms of our three categories. Likewise, the collaborative production of art continually recreates a relational understanding among the artists in terms of our three categories. In the process of production, there is no categorical separation between producers and product. The production of art reproduces the collaborative itself. Collaborative art making becomes autopoetic. As with all art, the actual art produced is constrained by medium and theme.

For example, take the production of a series of minimalist ink drawings by three practitioners of *Threeing*. The theme might be the abstract relation between intuition, reaction and mediation. In the role of

firstness, each spontaneously draws a continuous line. Each artist then gives the pad with the drawn line to a fellow practitioner. In the role of secondness, each now draws another continuous line on the same pad in reaction to the given line. Each artist then gives the two drawn lines to the artist who has not yet drawn on that particular pad. In the role of thirdness, each artist now draws a continuous line that makes a three line composition.

Take, as another example, the production of an improvised composition by three musicians. The theme is the feeling of joy. In the role of firstness, the alto sax moves along spontaneously celebrating a feeling of joy. The bass reacts to how the sax sounds and the piano mediates between them. When the sax has had its free run of joy, the bass becomes the spontaneous initiator, the piano reacts and the sax mediates. When the bass has made all its moves, the musicians change roles again.

Take, as a final example, the production of a six monitor video installation about Cézanne's mountain. Our three artists, - let us call them Yellow, Red and Blue,- would take turns in the different roles. Yellow might do a ten-second shot of the texture of bark on an oak (firstness), Red might do a shot of the trunk of the same oak rising out of its ground site (secondness), Blue might do a shot of the whole tree with the mountain in the background (thirdness). When the team approached another aspect of the mountain,- exposed bedrock,- Red would take on firstness, Blue secondness, and Yellow thirdness. Another phenomenon, such as the peak of the mountain, would find Blue doing firstness, Yellow secondness, and Red thirdness. Using the decision making protocols in the editing room, each artist would

become responsible for producing two video tracks that respectively emphasized the firstness, secondness or thirdness of the mountain.

Artists composing with firstness, secondness and thirdness can take advantage of how these categories combine. For example, firstness is not separated from secondness. As mentioned, firstness has to do with feeling and secondness with fact. The 'ouch' sounded by someone who responds to being struck with a fallen rock is an instance of the combination called 'firstness of secondness'. The brute fact of the rock hitting the person is actually there, secondness. It is not constructed or determined by the person's feelings alone. Yet, for the person, a feeling attaches to the brute fact, a feeling evident in the involuntary cry. Just as there are feelings attached to facts, so there are facts determined by law. If you broke the law, the fact of the policeman's hand on your shoulder as he arrests you would be an instance of the 'secondness of thirdness'.

There is also a 'firstness of thirdness'. Think of time lapse film studies of budding flowers and slow motion studies of humming birds. Watching these moving images, it is possible to understand the pattern presented in a single gestalt without rational inference using language. The moving image allows the natural event to occur in the mind. There is a spontaneous, intuitive appreciation of a pattern in nature. Such a combination of astonishment and recognition of pattern can be understood as the firstness of thirdness. Thirdness includes both secondness and firstness, Secondness includes firstness but not thirdness. Firstness can be attended to without regard for secondness or thirdness. More elaborate descriptions of these continuous categories are available elsewhere. (See Peirce 1998.) Here is a chart

of the three categories and the three combined categories. The chart includes how each of the six is incorporated into the roles for *Threeing*, as well as descriptions, possible artistic interpretations, and examples of art work that feature one particular category or combined category.

Category	Role in Threeing	Description of Category	Possible Artistic Interpretations	Examples
Firstness	<i>first role</i> being such as you are without regard for any other	being such as is without regard for any other	Randomness Texture, tone, quality, mood, sensations	John Cage's chance compositions Mark Rothko's abstract Paintings
Firstness of Secondness	<i>second role</i> Attending to feeling of person in firstness and your own feelings and reactions	feeling or quality associated with a fact	'in your face' theatre	Richard Forman's Ontological Hysterical Theatre
Secondness	<i>second role</i> Reacting to person in firstness without thinking	brute fact without rhyme or reason, indexable to specific time and place	documentation of difficulties	Walker Evans' Depression Era photographs
Firstness of Thirdness	<i>third role</i> attend to feelings of person in first and second role and oneself	intuitive appreciate of pattern	intuitive understanding of phenomena 'chreods' (see below)	Georgia O'Keefe's paintings of desert flowers
Thirdness	<i>third role</i> Understand how you can mediate between first and second role	pattern, law or habit Semiotic Systems	Dramatic structure Rendering Complexity	Shakespeare's Hamlet Cathedral of Notre Dame
Secondness of Thirdness	<i>third role</i> enact your mediation	Force of law	Unjust execution	Lars von Trier's film <i>Dancer in the Dark</i>

To further suggest how these categories and combined categories hold rich possibilities for the production of art, let me draw on my own artwork to articulate how the firstness of thirdness can be woven together with the specific information required by secondness and the complex array of signs associated with thirdness.

Chreods

The 'firstness of thirdness' we observe in the processes of nature can be formally understood as chreods. 'Chre' comes from a word meaning 'necessary' and 'ode' comes from a word that means 'path'. A biologist studying embryology coined the word 'chreod' to indicate the necessary pathways of development that a healthy fetus must follow from conception to birth. A mathematician generalized this notion and created a whole family of models that describe the underlying structural stability of processes. As a video artist recording natural events such as waterflow patterns, thinking in terms of chreods has enriched my ability to approach nature with what Goethe called 'exact imaginative sympathy.'

An infant learning to walk is learning a chreod. She can tilt and toddle but as long as she does not fall, she is regulating herself in terms of a certain abstract moving figure, a chreod for walking. When she eats, she is following a different figure of regulation, a different chreod. For artists working with video to understand the natural world, chreods are privileged above other models because they are perceptible and

suitable for time based digital rendering. Artists working with other themes in other media may well profit from the formal understanding of the patterns underlying movement provided by chreods.

Nature is not a warehouse of frozen patterns to inspect; it is an ensemble of self-organizing systems with which we interact. The structural stability of these self-organizing systems can be understood through their chreods. Just and a growing infant has figures of regulation, a forest has 'figures of regulation' for growth.

Understanding these figures, -these chreods, and -we can understand the structural stability of living systems. With this understanding we can organize ourselves in accord with nature's self-organization. Both processes in nature and embryonic processes in humans have been successfully modeled with chreods. This suggests the possibility that artists can use electronic technology to produce a first order observation of the chreods in nature for second order observation of art viewers. Earthscore can take 'chreods' as the 'notes' of its score. Learning the score, and celebrating the score as artists, can enrich our ability to live on earth as humans.

Chreods in Place

Artists observe both the natural and the built environment, and chreods can be natural or built. Accordingly, Earthscore can adapt itself to whatever can be observed on earth. Whatever is observable is observable in some place at some time. As shown in the chart above, indications of specific time and place fall under the heading of secondness. Respecting this category of specifics, Earthscore

collaboratives can take responsibility for local, perceptible sites on earth such as streambeds, brownfields, watersheds, subways, or coastlines. Works of art produced according to Earthscore can be indexed to chreods in specific sites. By maintaining such artistic 'records', it becomes possible to correlate how different chreods, natural and manmade, operate together in specific ecologies. Eventually, by way of the interrelationships of chreods, we may be able to understand- in a way that is more meaningful than just scientific explanation- how particular ecologies can sustain themselves. Once we understand a particular ecology we can better understand our own part and imagine the viable range of possible scenarios for living in terms of that ecology. Living on Earth becomes a work of art.

Complexity

The categories of firstness, secondness and thirdness subdivide into a rich system of signs. This system of signs can serve collaborating artists as a common palette for producing art. There is a tenfold classification, a twenty-eight fold classification and a sixty-six fold classification. Using this sixty-six fold system sign classification system I have designed an entire television channel dedicated to interpreting the ecology of the Hudson River Basin for the people in the Basin so they can live there sustainably. More complex classifications are possible. This sign classification system can also be used to interface directly with the different functional subsystems in society to develop a comprehensive and operative understanding of the syntax of sustainability proper to the variety of Earth's ecologies. Collaborating

artists could provide modern society with an ongoing shared perception of its evolving environment. (See Ryan, 1993).

Organizing the Collaborative

In this final section, I put forth programs for organizing collaboration among artists in keeping with the Earthscore code. These sets of instructions, or programs, are distilled from years of experience working in different settings with different groups including artists in the Hudson Valley, teachers in the New York City Public School System and defense industry workers dismissed by Pratt Whitney. To the reader, some of these programs may seem artificial. My response is that these artifacts, these programs, are written to preserve artistic freedom and preclude certain problems that can arise when working with trios. Indeed, some of the problems anticipated by these programs may never arise and other unforeseen problems may arise. It is for the collaborating artists to decide what programs are appropriate for their own context. What I want to emphasize is that the Earthscore code can help navigate whatever difficulties arise and that collaboration will be strengthened by developing programs that address problems in ways that are consistent with the code.

Artists may elect to form groups on their own, or such groups may be sponsored by outside patrons. Self sponsorship among peers of artists can maximize independence for the collaborative. An enlightened sponsor who respects the freedom of artists, however, can prove invaluable in the formation of the artists collaborative. The sponsor might be an art patron, a museum director or curator, a gallery owner,

an educator or some other person with an interest in art and the resources available to nurture collaborative production. Terms of sponsorship will vary with each situation, but should be articulated in advance.

Identifying the Pool of Artists

In the Earthscore System, artists choose collaborators from a pool of fellow artists. Either the artists, sponsors, or the sponsor in consultation with prospective artists, establish the criteria for who is in the pool. Based on that criteria, they artists can then be informed of the terms of sponsorship and invited to be members of the pool. Artists are free to accept or decline the invitation. The preferred number of total artists in the pool would be a multiple of three.

As an introduction to working together, each artist in the pool selects at least three works to show to fellow artists. Each artist also profiles his or herself according to the three skill sets appropriate for working in the three different roles proper to firstness, secondness and thirdness. (See Ryan 1994.) This profile, which emphasizes the natural strengths of each artist, then becomes open knowledge useful for artists choosing collaborators.

Artists Choosing Other Artists

All artists in the pool can participate in choosing to work with each other. The following is the simplest way to proceed while simultaneously respecting each artist's capacity to make choices.

- First, the sponsor identifies artist A.
- (*As many 'A' artists can be identified as there are multiples of three in the pool, or the sponsor can pick one trio and it can reproduce itself as described below.*)
- Artist A invites artist B to collaborate, specifying the terms of commitment.
- B accepts.
- B suggests someone else from the pool, C, to complete the trio.
- Artist A agrees.
- B and A then invite C, specifying the terms of commitment.
- C accepts.
- If any artist does not accept an offered invitation, the inviting artists simply select someone else from the pool to invite until there is a trio.
- A, B and C learn the flow pattern proper to *Threeing* and engage in three rounds of *Threeing*.
- If A, B or C is not comfortable with the practice, he or she can ask for more rounds or terminate the trio and return to the pool.
- If A, B and C are comfortable they should select a fourth party D to support their decision making. This fourth party can be either the sponsor or another artist from the pool.

The mutually selected trio then combines the ongoing practice of *Threeing* with the production of art projects together. If there are questions about what work to exhibit, artists can use the decision-making procedure.

Substitutions

If there is a reasonable cause, any one of the three practicing artists can offer a substitute from the pool to play their role in the trio for a specified time. The remaining artists can accept or reject the substitute.

Reproducing the Trio, Expanding to Nine

By predetermined arrangement or mutual agreement, the trio may decide to expand exponentially. Using the procedure described above, artist A chooses two new artists, then artist B chooses two new artists, then artist C chooses two new artists. In this sequence, any artist chosen, including those chosen by A, B and C, has the right to veto a new choice.

Each artist can be a member of four different trios. In any triadic combination, no two participants repeat participation with each other.

At any one time an artist could:

- 1) work in a functional trio,
- 2) practice *Threeing* with two others,
- 3) make observational art with two others and

4) make imaginative art with two others.

By observational art I mean rendering the known world astonishing, as with chreods discussed above. By imaginative art I mean envisioning, for others' imaginations, sustainable ways of living that contrast with our own current unsustainable ways of living. Imaginative art might be realized, for example, through the invention of Internet games that encode the struggle to shape sustainable societies. Below is a chart of the combinations for all four sorts of trios.

Functional Trios (fixed membership)	ABC	DEF	HIJ
<i>Threeing Trios (Rotating)</i>	<i>ADH</i>	<i>BEI</i>	<i>CFJ</i>
Perceptual Trios (Rotating)	<i>CEH</i>	<i>AFI</i>	<i>BDJ</i>
Imaginative Trios (Rotating)	<i>AEJ</i>	<i>BFH</i>	<i>CDI</i>

The Fixed Trios

The functional trios have a fixed membership that takes care of everything necessary to keep the collective functioning. The original trio stays intact as a functional trio and uses the decision making procedures to organize the business of the collective.

Using the procedure for the fair division of tasks, the three functional trios divide up the range of non-art producing tasks necessary to maintain the collaborative. Tasks and natural skill should be as well

matched as possible. Depending on the context, these tasks could include finding and maintaining facilities, bringing in income, raising money, establishing work-for-hire contracts, researching and purchasing production equipment, arranging exhibits, maintaining legal status, and negotiating relationships with the scientific world, the religious world, the educational world and the political world.

Decisions that affect the nine-member collaborative are made by the originating trio, in consultation with the remaining artists. This trio can select an outside party to play the role of fourth party or they can select invite another trio to select the fourth party. The two remaining trios will gather information for the originating trio that helps them make decisions in a way that optimizes the opportunity to make compelling art.

The Rotating Trios

Membership in the remaining trios rotates through the remaining three combinations. If the subject of the art project is based on observation of the natural world, the standard synchronization for changing the rotation should be linked to the cycles of the earth, either every season or every lunar cycle. Other subjects such as urban events would take their timetable from the events themselves. As all artwork is being composed in terms of firstness, secondness and thirdness, and all artists would become versed in these categories, it might be possible to pass some projects from trio to trio. Members of the originating trio are responsible for setting the schedule of the rotating trios.

The *Threeing* Trios would maintain the autopoiesis of the collective and cultivate the singularity of its members through the regular practice of *Threeing*. Cultivating the singularity of fellow members of the *Threeing* trio can extend to peer counseling on health, educational and interpersonal issues, an effort which would naturally enhance the work itself.

Perceptual Trios could take responsibility for rendering the chreods of the environment as works of art. This trio would use the roles of firstness, secondness and thirdness to organize and compose their perceptions of the environment, particularly the chreods.

Following ecological themes, the Imaginative Trios could produce art that imagines patterns of living on earth in sustainable ways. The patterns of collaboration and scheduling should follow the patterns of the emerging art project. Sometimes the trios will work fine. Sometimes artists might work entirely solo. Sometimes one artist might work with three 'consultants' to her projects each operating in either firstness, secondness, or thirdness. Sometimes eight artists might follow the lead of one 'director'. As long as the basic code of Earthscore serves as the minimal organization, and chreods found by the Perceptual Trios are respected, anything that works in the making of art works.

Proportionality

The originating trio is charged with maintaining the proportionality of the work undertaken in the different trios to ensure the success of the collaborative. The proper proportionality will vary greatly with the context in which the collaborative is working. In general, however, it can be said that when the regular practice of *Threeing* is neglected or the amount of time spent in the functional trios is not enough to support the collaborative, the situation should be reviewed.

Face-to-Face-to-Face

Given that the practice of *Threeing* is structured by a circuit, a rich congruence between live practice and online communication is possible. As part of its responsibility for maintaining balance, the originating trio is also responsible for insuring a proportionality between on site face-to-face-to-face practice and on line communication. Broadband, real-time, electronic *Threeing* via video is conceivable. However, I believe, face-to-face-to-face practice remains necessary because electronics can always be manipulated and falsified in a way that face-to-face communication cannot. In the domain of producing art, the required level of interpersonal trust cannot be assumed without providing for interpersonal presence. Still, perhaps this trust can be generated by some combination of practicing *Threeing* with those artists who are proximate, and producing perceptual and imaginative art with other artists who are only

available on line. The critical issue is to create trustworthy communication among the collaborating artists.

Artist Couples

Given the difference in kind between two-person relationships and three-person relationships, it is best for an artist couple to choose two other artist couples for *Threeing*, rather than choose solo artists. By choosing two other couples, an artist couple can both reinforce the natural collaboration with their chosen partner and gain the benefit of working in threes. By contrast, mixing two-person relationships with three-person relationships runs the risk of confusion that will undermine both. Separate and mutually reinforcing arrangements optimize the benefits of collaboration.

The procedure for mutual selection of artist couples is the same as the procedure given above for individual artists. With three couples, each person can be a member of four trios that do not include his or her partner. These four trios can be organized according to the chart below.

Couples: A1, B2, C3

Functional Trios (fixed membership)	12C	AB3
<i>Threeing</i> Trios (Rotating)	<i>BC1</i>	<i>23A</i>

Perceptual Trios (Rotating)	ABC	123
Imaginative Trios (Rotating)	13B	AC2

If three collaborating couples decide to grow, each couple should find two other new couples to collaborate with and the eighteen people can operate with an organizational structure similar to the chart above, changing those things that need to be changed.

Collaborating with Other Professionals

Certain projects may call for collaboration with scientists, educators, government officials or other professionals who are not artists. Such collaborations can use the Earthscore System explicitly or implicitly. In explicate collaborations, non-artists will be taught the Talking Stick protocols. For example, three artists can work with three scientists and three government officials restoring a brownfield by using a variation on the nine member collaborative described above. For implicit collaborations, Earthscore members can participate using the three basic skill sets as appropriate to the context. For example, if the project requires negotiation, the three skill sets translate into inventing options for mutual gain (first skill set), focusing on interests (second skill set) and referencing standards (third skill set).

Individual Artists

As mentioned, the singularity of each artist is precious to the Earthscore system. Accordingly, all work done by artists on art projects should be properly credited to the artists. At times, the singularity of a given artist may be such that he or she would be more productive working as a solo artist with a solo career. Some artists might move in and out of collectives. When this happens, or when an individual artist withdraws by their own choice, a division of the fruits of the collaborative work should be negotiated by the individual artist with the collaborative on a case-by-case basis using the fair division procedures described above.

Earthscore and Sustainability

As noted, it is impossible to produce art without securing the freedom to make choices. Earthscore is organized to secure maximal opportunities for choice among a group of collaborating artists. Even using the Earthscore System to produce art that addresses the ecology in the interests of a sustainable future remains one chosen use among many possible uses. In a sense, great art has always nurtured the sustainability of the human species. Shakespeare invites us to care, in spite of it all. But the 'all' has changed. We need to redefine the human as sustainable in ecological terms. Earthscore offers artists a systemic approach to collaborating in this task.

Sources

The sources for 'Earthscore for Artists' include systems theory according to Gregory Bateson, Warren McCulloch, Francisco Varela, Humberto Maturana and Niklas Luhmann; phenomenology and semiotics according to Charles Peirce; 'chreods' after biologist, C.H. Waddington, and mathematician, Rene Thom; and Fair Division strategies from Brahms and Taylor. The two innovations that I bring to this mix, which enabled me to codify *Earthscore for Artists*, are the relational circuit and the practice of *Threeing*. Texts related to these sources and innovations are cited below.

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