

The Harrisons: Talking and Remembering

*Helen Mayer Harrison
and Newton Harrison
interviewed by Peter Selz*

INTRODUCTION BY PETER SELZ

We are recording this conversation at Kala Art Institute, in Berkeley, California, on 31 January 2010, where there is a major exhibition of recent work by the Harrisons on view.

I go back with the Harrisons some time. I wrote about the Harrisons in 1979, when they exhibited their 1977 work *Meditations on the Sacramento River, the Delta, and the Bays of San Francisco* in a citywide exhibition held in San Francisco, with a focus at the San Francisco Museum of Art and the Floating Museum. All over the city there were events going on, including billboards, the use of personals in the newspapers as subject matter and a graffiti campaign of chalk on the sidewalks.

The Harrisons were among the chief pioneers in Eco Art and an early generation of earth artists, many of whom, such as Robert Smithson, Michael Heizer and others, made their heavy mark on the land. But the Harrisons, beginning in the very early 1970s, and later Michael Singer, Agnes Denes, Mel Chin and others, expressly did not impinge upon the earth.

In their recent series of works, *The Force Majeure*, the Harrisons look at Peninsula Europe as part of a watershed ensemble, encompassing watersheds from the Pyrenees to the Carpathian Mountains, the Tibetan Plateau and the Sierra Nevada Mountains; they propose ecological approaches to the ecological and human problems caused by glacial melt at great scale.

Unlike most artists, the Harrisons engage in finding ecological solutions, often systemic in nature, to large, complex problems with political implications. Several of their works have actually been adopted in part by government agencies. Their work, as far as I remember, goes back to the corporeal portable *Fish Farm* in London, 1971. There a great fury arose when they actually ate the fish after electrocuting them—electrocution was required by the American SPCA [Society for the Prevention of Cruelty to Animals], since catfish were hard to kill and could live out of water for some time.

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Article Frontispiece. *Tibet Is the High Ground Part IV: The Force Majeure*, 2010. (© Helen and Newton Harrison. Photo courtesy Ronald Feldman Fine Arts.)

A short list of their most important works would include a major work, *The Law of the Sea Conference: Where the Appetite Is Discovered to be Endless*, in the 1976 Venice Biennale; *Two Lines of Sight and an Unexpected Connection Comprise a Promenade for Baltimore* (1981); works in Pasadena, *Arroyo Seco Release: A Serpentine for Pasadena* on the lower arroyo and *Devil's Gate Transformation: A Refuge for Pasadena* at Devil's Gate Dam; work at Documenta 8 (*Kasselwerks: A Work for Documenta* [1987]); and *Atempause für den Sava Fluss, or, Breathing Space for the Sava River* in former-Yugoslavia in 1989, which was interrupted by the civil war there but continued afterwards. The European Union and the German government funded a large traveling exhibition entitled *Peninsula Europe* (2001–2003) (Fig. 1). It is the beginning of the *Force Majeure* series. Typical of their more recent work is a piece called *Tibet Is the High Ground* (Article Frontispiece) (1993, 2005–2010), directed toward the well-being of China and other Asian countries.

I know I'm remembering these out of order—spontaneously—but I recall seeing their work *Serpentine Lattice* on the north coast of California in 1993. In Bonn I saw their work *Endangered Meadows of Europe* (1996). Then they went to work on *A Vision for the Green Heart of Holland* (Fig. 2), which they worked on from 1994–2001. And finally *Greenhouse Britain* (Fig. 3), which is on view here at Kala (2008).

The Harrisons, whose work is fundamentally subject-matter driven, work in many media. A locus in their work bears relationship to color field painting. However, their color fields are large maps, done with a great deal of research with geologists and geographers, etc., and their color fields do a lot more than just refer to themselves. The Harrisons are conceptual artists working with ideas and analyzing systems—except that they go beyond ideas; they act. They are performing artists engaging their own creative modality, which infuses their use of poetic metaphor in their creative use of language, often expanding the permissions and boundaries of the field itself. At this point, I would like to more or less turn it over to Helen Mayer Harrison and Newton Harrison, and we'll follow their dialogue, but we may come in with a few questions in between [1].

[**Newton**] Helen and I should really talk about how we were driven to deal with something like *The Force Majeure*—what it means and why we feel it necessary to compose with “new” ecosystems, which we call plant palettes, and why we have be-

ABSTRACT

Peter Selz engages Helen and Newton Harrison in discussion about their expansive career in ecological art. The artists reflect upon the influences of Renaissance artists and the Bauhaus on the development of their approach, and they chronicle their concern with survival at progressively larger scales. In their recent *Force Majeure* series, working at the ecosystemic level, they present poetic meditations on prospects for the security of all living things as land, food, fresh water and other species diminish.

gun thinking about 2 million square kilometers as a field to work in. We've also begun thinking about carbon sequestration at that scale, and how our very early experience, as both field painters and collagists and our history of composing, helps us see the Tibetan Plateau as a field. To deal with that, we'd have to be talking about what we call the field of play. For a painter, the canvas is the field of play; the field of play is where a whole world takes place.

[Helen] I think that we should go back much further, to talk for a moment or two about the real influences on our lives and the way we think. We lived in Florence, Italy, from 1957 to 1960, before it became the tourist trap it is today. Not only was it a great experience to see all the great art and to learn from it, and to know that everywhere you went there was visually something interesting happening, possibly beautiful. It was about the way people had dealt with space and encountering each other. The influence of Florence as a city was as important to our future as was the influence of the art we saw there.

[Newton] The whole idea of our use

of the concept field of play has its source in the Florentine experience, which was a field of play for us. But *field of play* as a concept or viable working form for us only emerged 30 years later. What we finally come to when we use the term *field of play* is a search for, and discovery of, a geophysical field that can be apprehended or known. The reason we seek a geophysical field is that it has boundary conditions. If it has boundary conditions, you can actually look at it in a framed or contained way. Thus you can look at Peninsula Europe (see Fig. 1) and suddenly understand that the 3.3-million-square-kilometer peninsula is bounded by water in all cases, with one exception. This is a 30-km region in the Carpathians that marks the distance between the beginning of the Dniester River and the Vistula River. So the peninsula is only connected to the Russian plain and beyond it to the Urals by 30 kilometers. From this bit of seeing, suddenly we understood that the Russian plain is one field, distinct from the peninsula of Europe, although they are interconnected. Therefore, were you to take up the Russian plain, an entirely different work would emerge than that

which came about when we took up the European field.

[Helen] And within the field of play that is Peninsula Europe, the mountain ranges from the Carpathians all the way across the Central Massif to the Pyrenees became an undulating multifaceted figure rising from the overall ground plain, with water as a boundary. We began to look at the mountains and what they told us. We saw great differences between the individual mountains, and likewise there was the individuality found in the multiplicity of watersheds.

[Newton] Once we understood the mountains as a form, the form itself became understandable as a vast interconnected body of watersheds. And the biodiversity emerged differently in different watersheds all the way from Portugal to the Carpathians bordering the Russian plain.

[Helen] And the great difference in ecosystems sets up the great differences in cultures, as well as differences in language. As it turned out, we ran into a rough-and-ready equation, where geophysical diversity generated biodiversity, which in turn generated cultural diversity (in rough measure), and Peninsula Europe became a sort of exemplar. I don't know another place in the world that has that many diverse languages embedded in it and that many dialects of the many languages in it.

[Peter] I think this is absolutely true—but the geology of Poland is not that different really than the geology of Germany. So we have different languages, different cultures, but basically the geography is very much the same.

[Newton] Only partially similar, because there are differences in the amounts of water, there are ecological differences, and there are differences in fertility and differences in the land. Small differences, biologically, may afford sometimes large differences in culture. At least that is our belief. I think you can debate that. You can take issue with it.

[Peter] Yes I see that: all these different cultures and different languages and different dialects. I traveled a lot in Europe, and once you get south of the Alps, into the big plain of Europe—going from Holland to Russia—the land seems really similar.

[Newton] However, it does matter that the Peninsula is connected to the Russian plain by only about 30 km. This makes clear that they—the Russian plain and the Peninsula of Europe—are two dramatically different fields of play. The original insight that we had stated earlier is so important. It simply suggests that geophysi-

Fig. 1. Peninsula Europe: Part I, installation, Ronald Feldman Fine Arts, 2003. Part of the *Force Majeure* series. (© Helen and Newton Harrison. Photo courtesy Ronald Feldman Fine Arts.) A floor map of the Peninsula of Europe with a drawing of the high ground of the mountain ranges of the peninsula at the 300–350-m level. The high grounds are understood as where the rivers begin. The left wall has a drawing of the high grounds intended to behave iconically. The two images on the right wall have the first comprehensive watershed drawing of the peninsula, which, fragmented, poses the question: Who will look to the continuity of the whole? The overall work poses the question: Can the peninsula of Europe begin to consider itself an entity that, from a biological perspective, knows what's good for itself and does it and knows what's bad for itself and refrains? The narrative is an extended word/image poem. The answer was: Not likely in the near future.



cal diversity generates biodiversity, which in turn underpins or generates cultural diversity. A little something is happening; that something is called global warming, and the glaciers are melting. As a consequence of the ice melting in the glaciers, many of the rivers are going to experience flood and drought. And as a consequence of that, if the figures are right, drought will cross the continent from Portugal perhaps to the middle of Germany (Fig. 4). Therefore, of 2.4 million square kilometers of factory farm, perhaps half will become unproductive. Well, then, extreme food shortage and some starvation become likely. So, in our field of play, population will increase, food production decrease, ocean waters will rise, and some millions of people will have to move toward higher ground. So: less land, more people, less food. Let's talk about that!

[Peter] In that context, I agree. The cultural differences are not as important.

[Newton] Then there is the larger question that apparently no one has yet asked. That is, Can we think of anything that will replace glacial melt? If we can, a lot of problems could be solved.

[Helen] It's not whether you can replace glacial melt—it's, Can you replace glaciers?

[Laughter]

[Peter] Well, from everything I read, to replace glacial melt—it is too late already.

[Helen] It's too late to get the glaciers back, but it may not be too late to get back what the glaciers do.

[Newton] Now, what do the glaciers do? They slowly release water, and that's what slowly fills the rivers. Well something else slowly releases water, and that something is what we are dealing with: the appropriate generation of forest, shrub and grasslands where the glaciers had been. Forests and grasslands have roots, and the roots interweave and the waters go down along the roots; every ecologist knows that this is called the sponge phenomenon. If you replace the glaciers as much as possible with an appropriate species pallet, then you have created an earth sponge, which will slowly release the waters. We assume the drought will kill most of the tree growth that's there. These are farmed trees, not native and not habituated to the extreme conditions global warming will bring about. On top of that, insects and disease will likely kill the rest. . . .

[Helen] When you have a drought, the trees will be subject to and vulnerable to insect plagues and to other kinds of plague because they are in such weak-



Fig. 2. *A Vision for the Green Heart of Holland*, 1994–2001, installation first shown at the Jerusalem Gallery, Gouda, Holland, 1994. Commissioned by the Cultural Council of South Holland. (© Helen and Newton Harrison. Photo courtesy Ronald Feldman Fine Arts.)

The objective of this piece was to discover a way to spare the Green Heart region of Holland from a proposed 600,000-house, \$220-billion development that would have negatively impacted 35 villages, the ecology and the perimeter cities of Amsterdam, Rotterdam and Den Hague. The work succeeded: The Harrison Studio line was drawn around the Green Heart, and development was not permitted beyond that line except for modest infill, often required by extended families. Some years later, the core design was chosen by an EU study to be one of the seven most important open spaces to be preserved in northwest Europe. This work was awarded the Groenevald Prize in 2001 for doing the most for the landscape of Holland that year.

Fig. 3. *Greenhouse Britain*, installation, Ronald Feldman Fine Arts, 2009. (© Helen and Newton Harrison. Photo courtesy Ronald Feldman Fine Arts.) Constructed in 2007, funded by the U.K. Department for Energy, Food and Rural Affairs. The image in the foreground is a model of the island with six projectors above it that project the rising of waters at 2-meter intervals with storm surges, thus creating a visual narrative wherein global warming information was democratized and all could see where they lived in relationship to the probable rising of waters and make decisions accordingly. *Greenhouse Britain* was given the U.K. Chartered Institute for Water and Environmental Management (CIWEM) Arts and Environment Award in 2010.





Fig. 4. *Peninsula Europe: Part IV*, 2007–2008 (an extension of the earlier [2003] *Peninsula Europe* exhibition), commissioned by the Deutsche Bundesstiftung Umwelt of Osnabruck and the European Commission Directorate of the European Union. (© Helen and Newton Harrison. Photo courtesy Ronald Feldman Fine Arts.) Assuming research is correct, drought will render at least 1 million of an existing 2.3 million square kilometers of farmland in Europe unproductive. With a 5-meter water rise, 23 million people will need to move upward and 95,000 square kilometers of land will disappear under water. Flood will also intensify, and the mostly monocultural high-ground forest will succumb to drought and disease. Why are people not thinking about this event-structure systematically? *Peninsula Europe: Part IV* makes an ecologically designed attempt to do just this.

ened conditions, and then typically fires come.

[Newton] So the question is what to do. And our responsibility seems to be generating transformation at a scale appropriate to the problem. The point is, we can lay the concept on the table to get the ball rolling. How does one start the ball rolling? Well, we have written to some of our ecologist friends and they have promised to work with us if funds come. No funds have come. Everyone likes microbiology, gene structures and all kinds of stuff. They don't like composing with messy and unpredictable ensembles like a species pallet.

[Helen] Let's start with the story underlying the work *Peninsula Europe*. We got a telephone call from the head of the Schweisfurth Stiftung, Franz-Theo Gottwald, requesting that we write a book.

[Newton] The subject matter was the Hanover World's Fair, 2000. The whole thing was complex and kind of humorous, since it appeared that 10 authors, ourselves among them, were being asked

to write 10 books semi-protesting the presentations at the World's Fair.

[Helen] The Hanover World's Fair was supposedly about the future of Europe from a green perspective, and the producers at first of course were thinking green—ecology and the environment and all those good ideas. And then what happened was that they gave the food section to McDonalds.

[Laughter]

[Newton] What had happened was that a banker took over. Suddenly, the people in charge wanted to charge exhibitors at the Fair \$100 per square foot for exhibition space. The whole issue was to make money. This caused a ruckus.

[Helen] As a result, what happened was that one day we received the phone call from Franz-Theo. He said, "You have done so many works on the European environment, can you do something else? Can you write a book on the future of the European environment?" We said, "No. We don't write books, we make exhibitions." And he said, "Well, You're going to want to do this." Again we said, "No."

[Newton] However, he then told us what this book was for—the group wanted to commission 10 books by 10 different authors to show what the Hanover World's Fair exhibition should have been, and our book would be about the landscape.

[Helen] Actually, he called us up three or four times, each time pressuring us to write a book, and each time we would say no.

[Newton] Then, in order to get out of this scary task, I asked him to double what he was offering us and he did!

[Helen] So we said, "Yes, we'll do it."

[Laughter]

[Newton] We said, "We'll do a book, provided we can find out what the European peninsula is, what its boundaries are." That's how we got to *Peninsula Europe* as a geophysical field. And that's how we came to do a book called *Grüne Landschaften. Vision: Die Welt als Garten* [2]. We wrote it in English (as *Green Landscape: The World Is a Garden*), but it was translated and published in German with all the other books.

[Helen] Finally Franz-Theo said, “Of all the books, yours is the only one which proposed action. Everyone else observed, criticized, or said simply what needed to be done.”

[Peter] Yes. That is the difference—between you and other artists. Very few of them ever propose action. That book you are talking about—you wrote it in English. Will it be published in the U.S. too?

[Helen] No. If we could find a publisher we would—although we’d have to rewrite it and significantly revise it, as so much new research has been put on the table.

[Newton] Anyway, to go back to Helen. She was saying that Franz-Theo commented, “You were the only ones that made a proposal,” and afterward he said, “What do you want to do with this proposal?”

[Helen] So we said, “Let’s do what all artists do, and transform the proposal into an exhibition,” which is often how we bring our ideas to pass.

[Newton] Then there is something else that happened here. We said to him, “We will only do this exhibition if you will bring together six or seven major figures from Europe: economists, ecologists and so on,” to see if this diversity of people finds our concepts credible.

[Helen] Most obdurate of this bunch was the Acting Inspector General for Environment and Atomic Energy from the EU. He said that he would only support it if he knew where funding could come from, since we were actually making what looked like a 100-billion-Euro proposal. And thereafter Newton said that the ecological regeneration of the high grounds would protect and enhance an endangered trans-European water system and, over a 50-year period, we were looking at a gain of considerably more than 100 billion Euros.

[Newton] And with that answer, they all came together. In addition we were finally, briefly able to speak to the cultural section of the European Union parliament.

[Peter] How was that received?

[Newton] Poorly.

[Laughter]

[Peter] Meaning what?

[Helen] Meaning . . . they did not believe us.

[Newton] The problem was we were dealing with politicians. They are very much in the now. It was 2000 when we addressed them. They just didn’t want to think about the scale we were talking about.

[Helen] So you can see the complexity with which we work. Go back and think

about great paintings. At least from our perspective, they were in fact complex, multi-leveled fields of play.

[Peter] Yes.

[Newton] For instance, does everybody know how Rembrandt was able to make so many of his figures look like they were casting their own light? It’s about light constancy. You see—look at the light here on our faces. We are all used to seeing this amount of brightness on our faces. Now, if I made your face much brighter, it would look fake and corny, because in fact you would have a spiritualized Peter, so to speak, or a madly melodramatic Helen. But if I made your face a little bit brighter, then you will appear as glowing. What Rembrandt understood was light constancy, and he broke that constancy into the smallest possible amounts. That is how he was able to make the light appear to emerge from people’s faces.

That is one of the things we learned and that applies to this work. We break constancies—but never arbitrarily.

[Helen] But all the great artists have done this in one form or another. In a similar vein, but still more complex, we saw something in Donatello’s Magdalene in the [Florence] Baptistery.

[Newton] Yes, Mary Magdalene was often seen as a highly sexualized figure, an excuse for a kind of semi-soft-core porn, expressed amidst all the rest of the serious material, Jesus on the cross etc. But Donatello breaks this constant, by conferring on the Magdalene a Christ-like status.

[Helen] And it’s a transformation that is absolutely marvelous—where Donatello in his depiction makes something apparently ugly become, upon second and third look, rich, beautiful, even astonishing.

Fig. 5. *Sierra Nevada*, installation view, Ronald Feldman Fine Arts, 2011. (© Helen and Newton Harrison. Photo courtesy Ronald Feldman Fine Arts.) The 44-ft floor image was constructed to represent the 28,000-square-mile footprint of the Sierra Nevada in answer to the question; How big is here? Physically, its intention was, metaphorically speaking, to walk the mountain range. The images of the watersheds on the wall and a number of other pieces not in this installation are the basis for a work entitled *Sierra Nevada: An Adaptation*. Embedded in the work is a question: Are there ecologically available responses that will, in good part, replace the value provided by the disappearing glaciers to the river systems and to the human cultures they support? The proposed concept will be tested in the 9,000-acre Sagehen Creek nature reserve. The initiator of this work, the Nevada Museum of Art, has committed to a 50-year project and exhibited this work through November 2011.



that work was, “How are we going to feed ourselves?” Then, 7 years later, we did the *Sacramento Meditations*, which takes issue with the so-called Green Revolution in farming—which encouraged a vast system of water abuse.

[Helen] In fact, the whole system at work in the [California] Central Valley has self-canceling qualities in the long term. So then, the question transformed itself in our minds into, “How ARE we going to survive?” The WE being all and everything.

[Peter] How did you get onto the *Fish Farm* idea—is that one of the first things you did? In London of all places?

[Newton] In April 1971, Maurice Tuchman took me outside to the courtyard of the LA County Museum and showed me two large decorative ponds where they used algaecides to kill algae and maintain the purity of the water. He asked me to do an outdoor piece between the waters.

[Helen] Neither of us liked the idea of algaecide. So Newton proposed making something that lives in water, as a sort of visual and material argument about what was happening in these two ponds on either side of the courtyard.

[Newton] I went to the algological group at the Scripps Institute of Oceanography, which was part of UC San Diego, where I was teaching. And I asked if they knew any species of algae that did

things like change or generate color. It was a real old-fashioned formalist question. So Mike Mullen and Richard Eppley, the algologists there, told me to fly over the San Francisco salt works and to come back to have a conversation.

[Helen] Over San Francisco Bay.

[Newton] So I take the flight, look down and see red ponds, ponds the color of adobe, clear ponds and some with several shades of green. Eppley and Mullen explained that there is an alga called *Dunaliella*, and the saltier the water gets, the redder the algae gets, because this particular algae generates carotene to help it survive. And when the water becomes mostly clear, it often means there is a tiny crustacean, *Artemia* or brine shrimp, that has eaten much of the algae—and that brine shrimp/algae transaction is perhaps one of the simplest ecosystems in the world.

[Helen] So Maurice, after rejecting a number of other artists, asked Newton what he would do with the space.

[Newton] And I said to Maurice, How about we do a little something called *Notations on the Eco System of the Western Salt Waters with the Inclusion of Brine Shrimp*? And a number of ironies emerged from doing this work. One was that it generated more and more algae—while the museum was trying to kill all the algae in their own ponds. The next thing that

happened was that the piece became stronger and stronger, while many of the works inside the exhibition, electronically driven, got weaker and weaker, because electronic systems break down over time. Ours relied on the sun as its engine, which is not likely to break down for quite some time.

[Helen] You’ve left out another irony, which is that we did this work for \$700, when everything else in the museum cost \$50,000 and up. Actually many saw this work as a critique of the rest of the exhibition, including Newton’s *Artificial Aurora*, which was inside the museum.

[Peter] I remember it was very beautiful.

[Newton] Then Maurice did a show in London at the Haywood Gallery called 11 LA Artists; he asked me to do something there, and I said, Let’s do a portable fish farm. So I started to experiment with fish farms in tanks almost as big as this room.

[Helen] And remember, this was at the very beginning of our collaboration, with Newton doing most of the installations and I doing much of the research and performance. At any rate, we began to look for creatures that could survive museum conditions.

[Newton] The real issue for us was a question of backyard farming.

[Helen] During that period, 1970–1972, in a body of work titled *The Survival Pieces*, we did portable fish farms, portable orchards, a hog pasture, worm farm, portable flat pastures and upright pastures. They all ended up in museums. They were all about how urban dwellers might feed themselves, and all about lost information and retrieving survival skills. Actually these works were reproduced in their totality in the Radical Nature show at the Barbican in London last year [2009]. And over the past 40 years our work has moved from personal survival to the survival of whole systems.

[Newton] And that’s what you see in the *Force Majeure* works: *Peninsula Europe: Part IV*, *Tibet Is the High Ground*, *Sierra Nevada* (Figs 5–7). In fact, early in *The Lagoon Cycle* we talk about mathematician René Thom’s use of the term “change of state” which, to our mind now, seems like a phase shift—although the term *phase shift* comes from physics. And that’s how we see the difference between our work prior to *The Force Majeure* and afterwards.

[Helen] Yes, phase shift. How does all this feel to you, Peter?

[Peter] Very good, I think we got back to where we started at the beginning—at the end we pick up the beginning.

[Susannah] OK. We didn’t mention

Fig. 7. The Independence Lake watershed site, where the first concept of adaptation at scale was designed as part of *Sierra Nevada: An Adaptation*. (© Helen and Newton Harrison. Photo courtesy Ronald Feldman Fine Arts.) The concepts embedded in this work are being transferred to the next watershed over, University of California’s Sagehen Creek Field Station nature reserve, to be enacted on the ground. A 4-minute animation was made for this work. See <www.youtube.com/watch?v=S8bfyVmRwjw>.



Leonardo. We did Michelangelo and Donatello.

[Newton] Enough has been said about Picasso, right?! [Laughter]

[Helen] I would like to end with some thoughts on one of the last images in *The Seventh Lagoon*—one of the last images we did for *The Lagoon Cycle*, written in 1978.

[Newton] In this last work of *The Lagoon Cycle* we refer to Leonardo's last drawings, often called "Storm Drawings."

[Helen] They are about turbulent waters, and waters as far as the eye can see. We understand this to be Leonardo's prophecy. And we take permission then to make that kind of prophecy ourselves. Except Leonardo's was metaphysical and ours is both literal and very physical.

BRIEF EXCERPTS FROM THE SEVENTH LAGOON

*And the waters will rise slowly
at the boundary
at the edge
redrawing that boundary
continually
moment by moment
all over
altogether
all at once*

*It is a graceful drawing and redrawing
this response to the millennia of the
making of fire*

—

*And in this new beginning
this continuously rebeginning
will you feed me when my lands can
no longer produce?
and will I house you
when your lands are covered with
water?
and together
we will withdraw
as the waters rise*

AFTERWORD

In August 2011, the Harrison Studio received approval to establish The Center for Force Majeure Studies on the campus of the University of California at Santa Cruz. The mission of the Center is to generate long-term research projects that address the emerging stresses of the Earth's

largest ecosystems by conjoining the processes of art-making and the sciences within the perspective of the Harrisons' work. The Center will both reach out to cultural and educational institutions and execute on-the-ground projects. Here the legal term *force majeure* designates the co-evolving set of circumstances set in motion by human overuse and pollution of planetary resources and resultant climate change, imperiling the survival of both human cultures and ecosystems as we now know them.

Complexity theory suggests that multi-dimensional problems do not yield, or find resolution with, simple cause-and-effect solutions, such as putting iron filings in the ocean, using the ocean floor as a carbon sink through algae uptake systems, burying CO₂ underground, substituting atomic energy for coal, and the like. We have come to believe that problems such as the reformatting of the global weather systems from the predictable Holocene to the unpredictable Anthropocene must be met by a whole-systems approach. We believe that human well-being in our shared and uncertain future will require adaptation on a vast scale, both ecologically and culturally. The formation of the Center will manifest this belief in physical terms.

The Center will engage in studies of "adaptation at scale," a core aspect of the *Force Majeure* project. This large-scale perspective will be maintained in examining the likely outcomes of glacial melt in the Sierra Nevada, the Tibetan Plateau and the trans-European mountain ranges and confronts the following question, which implicates large-scale regional planning and ecostructural design that must be supported at policy levels:

Are there ecologically available responses that will, in good part, replace the value provided by the disappearing glaciers to the river systems and to the human cultures they support?

1. Toward answering this question in several geographies, the Center will evaluate sites of glacial melt for management of plant species adaptable to new climate conditions and capable of

generating enhanced topsoil and water retention. Paleo-botanical research will identify species extant in the affected regions when climates were equivalent to those projected. Newly revealed glacial earths will be examined and a viable first succession conceived. More careful exploration of the hydrology of carbon sponge dynamics is to add value to the system. Possibilities for carbon sequestration will be estimated at grand scales, e.g. were the Tibetan Plateau to be significantly regenerated using the evolving principles of the Harrison Studio.

2. In further search of an answer to the above question, the Harrison Studio, the Nevada Museum of Art and the 9,000-acre Sagehen Creek Field Station of the University of California are engaged in a 50-year research project that is at once a work of art, a work of science and bio-regional planning and a call for policy change. It also has an educational function, both at university levels and for the public, and is designed so as to deepen public engagement and inform public policy.

The project's 50-year research program will require several generations of artists/scientists/thinkers to bring to a useful conclusion. We envision the Center as a legacy process and expect to begin a transfer of leadership within the next four or five years.

Acknowledgment

In conjunction with the Harrisons' *Greenhouse Britain* and *Force Majeure* exhibition, held 10 December 2009 through 27 February 2010 at Kala Art Institute in Berkeley, California, artist and educator Susannah Hays facilitated and contributed to the above interview on 31 January 2010 and moderated the associated 20 February 2010 symposium "Transformative Processes in Environmental Art" with panelists John Roloff, Robert Dawson, Greg Niemeyer, Chris Chafe and Sam Bower.

References and Notes

Unedited references as provided by the authors.

1. Artist Susannah Hays also contributed to this interview.
2. Helen Mayer Harrison and Newton Harrison, *Grüne Landschaften. Vision: Die Welt als Garten* (Frankfurt/New York: Campus Verlag, 1999).

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CALL FOR PAPERS

Arts, Humanities, and Complex Networks

The Arts, Humanities, and Complex Networks 3rd Leonardo Satellite Symposium at NetSci2012 takes place Tuesday, 19 June 2012, at Northwestern University (Evanston, IL). The aim of the symposium is to foster cross-disciplinary research on complex systems within or with the help of arts and humanities.

The symposium will highlight striking examples where artists and humanities researchers make an impact within the natural sciences. Running parallel to the NetSci2012 conference, the symposium will provide a unique opportunity to mingle with leading researchers and practitioners of complex network science, potentially sparking fruitful collaborations.

In addition to keynotes and interdisciplinary discussion, we are looking for a number of contributed talks. Selected papers will be published in print in a special section of *Leonardo*, as well as on-line in Leonardo Transactions.

Confirmed keynote speakers: Burak Arıkan, Pedro Cano and Miriah Meyer.

Organizing committee: Maximilian Schich, Roger Malina, Isabel Meirelles and Cristián Huepe.

Possible subjects include: cultural analytics, culturomics and high-throughput approaches; cultural exchange and trade networks; emergence and evolution of canons; evolution of communities of practice; history and theory of network visualization; networks in architecture and urban planning; network structure and dynamics in art, music, literature and film; taxonomy and evolutionary models in art and science.

Submissions: We are looking for eight 15-minute contributions. Abstracts should not exceed 300 words; include one relevant URL and upload your most awesome figure in .jpg format. You will have the opportunity to post your submission using the EasyChair system at <www.easychair.org/conferences/?conf=ahcnnetsci2012>.

The deadline for applications is 16 March 2012. Decisions on acceptance will be sent out by 30 March 2012.

Attendance: Free of charge. As space is limited, we require registration. NetSci2012 attendees can register directly during main conference registration. For the NetSci2012 registration fee and deadline please see <www.netsci2012.net>.

In addition we will give out a limited number of free tickets via Eventbrite at <<http://ahcn2012.eventbrite.com>>.

In case of questions, please drop us a mail at <artshumanities.netsci@gmail.com>.