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Entropy Made Visible (1973)
Interview with Alison Sky

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ROBERT SMITHSON: O.K. we'll begin with entropy. That's a subject that's preoccupied me for some time. On the whole I would say entropy contradicts the usual notion of a mechanistic world view. In other words it's a condition that's irreversible, it's a condition that's moving towards a gradual equilibrium and it's suggested in many ways. Perhaps a nice succinct definition of entropy would be Humpty Dumpty. Like Humpty Dumpty sat on a wall, Humpty Dumpty had a great fall, all the king's horses and all the king's men couldn't put Humpty Dumpty back together again. There is a tendency to treat closed systems in such a way. One might even say that the current Watergate situation is an example of entropy. You have a closed system which eventually deteriorates and starts to break apart and there's no way that you can really piece it back together again. Another example might be the shattering of Marcel Duchamp Glass, and his attempt to put all the pieces back together again attempting to overcome entropy. Buckminster Fuller also has a notion of entropy as a kind of devil that he must fight against and recycle. Norbert Weiner in *The Human Use of Human Beings* also postulates that entropy is a devil, but unlike the Christian devil which is simply a rational devil with a very simple morality of good and bad, the entropic devil is more Manichean in that you really can't tell the good from the bad, there's no clear cut distinction. And I think at one point Norbert Weiner also refers to modern art as one Niagara of entropy. In information theory you have another kind of entropy. The more information you have the higher degree of entropy, so that one piece of information tends to cancel out the other. The economist Nicholas Georgescu-Roegen has gone so far as to say that the second law of thermodynamics is not only a physical law but linked to economics. He says Sadi Carnot could be called an econometrician. Pure science, like pure art tends to view abstraction as independent of nature, there's no accounting for change or the temporality of the mundane world. *Abstraction rules in a void, pretending to be free of time*.

One might even say that the whole energy crisis is a form of entropy. The earth being the closed system, there's only a certain amount of resources and of course there's an attempt to reverse entropy through the recycling of garbage. People going around collecting bottles and tin cans and whatnot and placing them in certain compounds like the one over on Greenwich Avenue across from St. Vincent's Hospitals. Well this seems to be a rather problematic situation. Actually right now I would like to quote from Georgerscu-Roegen, The *Entropy Law and the Economic Process*, about what he calls entropic bootlegging. It's an interesting conception I think. This is what he says about recycling waste materials. "This is what the promoters of entropy bootlegging fail to understand. To be sure, one can cite numberless scrap campaigns

aimed at saving low entropy [low entropy in his definition is raw materials before they're processed into refined materials. In other words raw ore would be low entropy and high entropy would be the refined material such as steel]... by sorting waste. They have been successful only because in *given circumstances* the sorting of, say, scrap copper required a smaller consumption of low entropy than the alternative way of obtaining the same amount of metal. It is equally true that the advance of technological knowledge may change the balance sheet of any scrap campaign, although history shows that past progress has benefited ordinary production rather than scrap saving. However, to sort out the scrap molecules scattered all over the land and at the bottom of the sea, would require such a long time that the entire low entropy of our environment would not suffice to keep alive the numberless generations of Maxwell's demons needed for the completed project." In other words he's giving us the indication that recycling is like looking for needles in haystacks.

Now, I would like to get into an area of, let's say, the problems of waste. It seems that when one is talking about preserving the environment or conserving energy or recycling one inevitably gets to the question of waste and I would postulate actually that waste and enjoyment are in a sense coupled. There's a certain kind of pleasure principle that comes out of preoccupation with waste. Like if we want a bigger and better car we are going to have bigger and better waste productions. So there's a kind of equation there between the enjoyment of life and waste. Probably the opposite of waste is luxury. Both waste and luxury tend to be useless. Then there's a kind of middle class notion of luxury which is often called "quality." And quality is sort of based on taste and sensibility. Sartre says Genet produces neither spit nor diamonds. I guess that's what I'm talking about.

ALISON SKY: Isn't entropy actually metamorphosis, or a continual process in which elements are undergoing change, but in an evolutionary sense?

SMITHSON: Yes and no. In other words, if we consider the earth in terms of geologic time we end up with what we call fluvial entropy. Geology has its entropy too, where everything is gradually wearing down. Now there may be a point where the earth's surface will collapse and break apart, so that the irreversible process will be in a sense metamorphosized, it is evolutionary, but it's not evolutionary in terms of any idealism. There is still the heat death of the sun. It may be that human beings are just different from dinosaurs rather than better. In other words there just might be a different situation. There's this need to try to transcend one's condition. I'm not a transcendentalist, so I just see things going towards a... well it's very hard to predict anything; anyway all predictions tend to be wrong. I mean even planning. I mean planning and chance almost seem to be the same thing.

SKY: I with the architectural profession would recognize that. In their grand masterplan schemes for the world, architects seem to find the "final solution" to all possible situations.

SMITHSON: They don't' take those things into account. Architects tend to be idealists, and not dialecticians. I propose a dialectics of entropic change.

There is an ongoing aspect of things that fascinates me like my recent involvement with Central Park (see "Frederick Law Olmsted and the Dialectical Landscape," *Artforum,* February 1973). You see that photograph there showing a pit in Central Park. Now you might say that's a kind of architecture, a kind of entropic architecture or a de-architecturization. In other words it's not really manifesting itself the way let's say Skidmore Owings and Merrill might manifest itself. It's almost the reverse of that, so that you can observe these kinds of entropic building situations which develop around construction. That pit will eventually be covered, but it's there right now with all its scaffolding, and people have been confused by that pit, they think it has something to do with the Met [Metropolitan Museum of New York]. There's a lot of graffiti on it attacking the Met, but it's really the city.

SKY: It's ironic that we've been able to perpetuate this attitude of set design solutions throughout the world. Traveling through Europe you can go for miles and it all looks exactly alike and like everywhere else. Mimic Lefrak City architecture is covering the earth. How did this manage to take over as opposed to the opposite view exemplified in places like Rome where there are no two buildings, angles, textures, etc., the same. Ruins melt and merge into new structures, and you get this marvelous and energetic juxtaposition occurring—with accident a large part of the whole process.

SMITHSON: Well, Rome is like a big scrap heap of antiquities, America doesn't have that kind of historical background of debris.

But I'd like to mention another mistake which is essentially an engineering mistake and that's the Salton Sea in southern California, which happens to be California's largest lake. It happened back during Teddy Roosevelt's administration. There was a desperate attempt to try to reroute the Colorado River. The Colorado River was always flooding and destroying the area. There was an attempt to keep the Colorado River from flooding by building a canal, in Mexico, and this was illegally done. This canal was started in the delta of the Colorado and then it was rerouted back toward Mexicali, but what happened was that the river flooded into this canal and the canal overflowed, and fed back into the Imperial Valley which is below sea level. So that this thirty mile lake was created by this engineering mistake, and whole cities were inundated, the railroad also was submerged, and there were great attempts to try to fight back this deluge, but to no avail. Since then, people have come to live with this lake, and recently I was out there I

spent some time in Salton City which is a city of about 400 people. And another example of blind planning is this maze of wide boulevards that snake through the desert. Now it was the idea that they would turn this into a huge retirement village or whatever, maybe a new Palm Springs, but the bottom fell out of that so that if you go there now you just see all these boulevards going all through the desert, very wide concrete boulevards and just sign posts naming the different roads and maybe a few trailer encampments near this city. It's impossible to swim in the Salton Sea because barnacles have grown all over the rocks. There is some water skiing and fishing. There's also a plan to try to desalinate the whole Salton Sea. And there's all kinds of strange schemes for doing that. One was to bring down slag from the Kaiser Steel Company, and build a dike system. So that here we have an example of a kind of domino effect where one mistake begets another mistake, yet these mistakes are all curiously exciting to me on a certain kind of level—I don't find them depressing.

SKY: There's an inherent energy level present in an accidental or mistake occurrence. I was listening to a discussion of the I.M. Pei buildings near Washington Square Village, and apparently in the two towers owned by New York University an attempt was made at "total control." Even the curtains were specified so as not to disturb the "esthetic resolution" of the building façade. The third tower is not owned by N.Y.U. and houses the people replaced by the construction. There people were free to choose their own curtains and you get an incredible diversity of styles and colors which I find much more dynamic. Ironically the white curtains so carefully controlled have since faded to different tones of white so the process occurred anyway.

SMITHSON: Right. It's like the Anchorage earthquake that was responsible for creating a park. After the earthquake they set aside a portion of earthquake damage and turned that into a park, which strikes me as an interesting way of dealing with the unexpected, and incorporating that into the community. That area's fascinated me quite a bit. Also, the recent eruptions outside of Iceland. At Vestmann Islands an entire community was submerged in black ashes. It created a kind of buried house system. It was quite interesting for a while. You might say that provided a temporary kind of buried architecture which reminds me of my own *Partially Buried Woodshed* out in Kent State, Ohio where I took 20 cartloads of earth and piled them on this woodshed until the central beam cracked. There was a problem from one of the local papers. They didn't really see that as a very positive gesture, and there was a rather disparaging article that went under the heading "It's a Mud Mud Mud World."

But basically I think that those preoccupations do escape architects and I'm thinking of another problem that also exists, that of mining reclamation. It seems that when they made up the laws for mining reclamation they wanted to put back the mines the way they were before they mined them. Now that's a real Humpty Dumpty way of doing things. You can imagine the result when

they try to deal with the Bingham pit in Utah which is a pit one mile deep and three miles across. Now the idea of the law being so general and not really dealing with a specific site like that seems unfortunate. One person at Kennecott Mining Company told me that they were supposed to fill that pit in; now of course one would wonder where they were going to get the material to fill that pit in.

SKY: Did you ask them?

SMITHSON: Yes, I mean they said it would take something like 30 years and they'd have to get the dirt from another mountain. It seems that the reclamation laws really don't deal with specific sites, they deal with a general dream or an ideal world long gone. It's an attempt to recover a frontier or a wilderness that no longer exists. Here we have to accept the entropic situation and more or less learn how to reincorporate these things that seem ugly. Actually there's the conflict of interests. On one side you have the idealistic ecologist and on the other side you have the profit desiring miner and you get all kinds of strange twists of landscape consciousness from such people. In fact there's a book that the Sierra Club put out called *Stripping*. Strip mining actually does sort of suggest lewd sex acts and everything, so it seems immoral from that standpoint. It's like a kind of sexual assault on mother earth which brings in the aspect of incest projections as well as illicit behavior and I would say that psychologically there's a problem there. There's a discussion of aesthetics in this book *Stripping* from the point of view of the miner and from the point of view of the ecologist. The ecologist says flatly that strip mines are just ugly and the miners says that beauty is in the eye of the beholder. So you have this stalemate and would say that's part of the clashing aspect of the entropic tendency, in other words two irreconcilable situations hopelessly going over the same waterfall. It seems that one would have to recognize this entropic condition rather than try to reverse it. And there's no stopping it; consider the image that Norbert Weiner gives us – Niagara Falls.

In fact they even shored up Niagara, speaking of Niagara. They stopped Niagara for a while because it was wearing away. And then they put these steel rods into the rock so that it would maintain its natural appearance.

SKY: Have they been able to stop it?

SMITHSON: They did stop it.

SKY: From wearing away?

SMITHSON: Well, it's still there. It didn't fall apart yet. Niagara looks like a giant open pit quarry. In other words it has high walls which offend people greatly in the strip mining regions. There are defects called "high walls" that exist in the strip mining areas and there's a desire on the part of ecologists to slope these down. The cliffs all around Niagara suggest excavation and mining, but it's just the work of nature. So there's constant confusion between man and nature. Is man a part of nature? Is man not a part of nature? So this causes problems.

SKY: There is definitely some sort of perverse fascination attached to the process of inevitable and impending destruction that will occur either in your own environment or be observed vicariously because people persist in living at the bases of volcanos, on earthquake zones such as the fault line which is supposed to destroy all of California, on top of sinking landscapes such as Venice which is a city built entirely on rotting wooden pilings and will eventually fall into the sea.

SMITHSON: Well, that may be something that's human—that's human need. It seems that there's almost a hope for disaster you might say. There's that desire for spectacle. I know when I was a kid I used to love to watch the hurricanes come and blow the trees down and rip up the sidewalks. I mean it fascinated me. There's kind of pleasure that one receives on that level. Yet there is this for something more tranquil—like babbling toward mining regions and volcanic conditions—wastelands rather than the usual notion of scenery or quietude, tranquility—though they somehow interact.

SKY: I think man turns to the wooded glens in the last moments for the most part. He probably wouldn't like to admit it but I don't think it's of prime importance to him—from a fascination viewpoint. I mean he really hasn't done much to protect these pockets of tranquility. At the last moment, after it's almost all destroyed he starts screaming "put up the trees" but only in a token gesture sense. That's always the answer, especially in public spaces in a city like New York—stick up a few isolated trees.

SMITHSON: Well, it seems that in a city like New York where everything is concrete here's this craving to stick up a tree somewhere.

Also in regard to the origin of parks in this country it's interesting to note that they really started as graveyards. There's something in the mid-19th century that's called the "rural graveyard movement" where there was an attempt to get away from the dreary little churchyard graveyards. They introduced a kind of sylvan setting so that nature would intermingle with the graveyards, and they developed a whole funerary school of art you might may. I know for a fact over near Fort Lee there are all these vaults—little pyramids, you know, for the dead.

There is an association with architecture and economics, and it seems that architects build in an isolated, self-contained, ahistorical way. They never seem to allow for any kind of relationship outside of their grand plan. And this seems to be true in economics too. Economics seem to be isolated and self-contained and conceived of as cycles, so as to exclude the whole entropic process. There's very little consideration of natural resources in terms of what the landscape looks like after the mining operations or farming operations are completed. So that a kind of blindness ensues. I guess it's what we call blind profit making. And then suddenly they find themselves within a range of desolation and wonder how they got there. So it's rather static way of looking at things. I don't' think things go in cycles. I think things just change from one situation to the next, there's really to return.