Accelerated Entropy : Making as Destruction

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The conventional view in art is that making, creating, and building things, are inherently good processes. The goodness of art is how we gauge progress (consider the designation of ancient Greek art as sophisticated compared to the relative primitivism of work produced during the Dark Age). When looking at this dynamic -- that is, the idea that making is good and art is representative of cultural progress -- through the frame of entropy, it becomes clear that any form of deliberate making requires destruction. The process of making entails more expenditure of energy and resources than are contained in the final object or production. Physical art-making (indeed, any form of making) is not an efficient system. The detritus of our accelerated entropy is consolidated in piles we have trouble keeping together as their constituents leak into the earth, and wash away into the oceans. All of our waste goes somewhere. In this paper I draw on several perspectives on the nature of entropy - scientific and physical models as well as Smithson's application of the idea of entropy to art. I argue that entropy -- a movement from consolidation to dispersion -- reveals the destruction inherent in construction.

A quick google search reveals an accessible description of entropy. To paraphrase, the classical thermodynamic principle of entropy was established in the early 1850s by Rudolf Clausius as the second law of thermodynamics. The second law

of thermodynamics states that the total entropy (the movement from consolidation to dispersion) of an isolated system can never decrease over time. Total entropy is constant if and only if all processes are reversible. Isolated systems evolve towards thermodynamic equilibrium, the state with maximum entropy[1]. As with all scientific discoveries, the law established a new understanding. Yet it wasn't until over a hundred years later that the concept of entropy consciously enters the context of the art world in the late 1960's with the work of Robert Smithson and his contemporaries such as Donald Judd, Robert Morris, and Dan Flavin to name a few. The work these artists made, especially that of Smithson, allows for a more cyclical, micro-cosmic perspective of the notion of entropy. For example, in Smithson's Spiral Jetty -- a piece of land art constructed out of a series of large rocks organized in a spiral shape in The Great Salt Lake in Utah, the jetty's shape is also discoverable in the salt crystal formations present at the site.

As the laws of thermodynamics establish, everything ultimately blends into a dispersed state of equilibrium. When picturing this blending, it's often easy to think of it as a linear decay, however this movement is filled with smaller events of entropic decay and consolidation, decay, then consolidation, and so-on. Larger actions yield smaller vortices which in themselves function as entropic cycles within the larger flow of universal entropy, such as the grains of sand described below. Smithson's definition of entropy is as follows,

> "imagine a sandbox filled on one side with white sand and on the other with black. A little boy begins to run around the enclosure in a clockwise direction, kicking up the sand as he goes

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[1] *5.2 Axiomatic Statements of the Laws of Thermodynamics*, MIT, web.mit.edu/16.unified/www/FALL/thermodynamics/notes/node38.html.

> and mixing together dark grains with light. He is then told to reverse his course and run counterclockwise.This will certainly do nothing to undo the movement toward uniformity and re-sort the two colors into separate fields. As his legs continue to churn, the process of entropy will, irreversibly, only progress and deepen." [2]

Another example is how all living things inherently actively participate in these entropic vortices. Picture a steady current flowing by a dock. If one were to put a canoe paddle in the water and observe the effect it has on the flow, the overall current continues unchanged, but the water behind the paddle is disrupted into a spiral-like eddy.

"Is it possible to create entropy? Is it possible to destroy it?" are question originally asked on Quora, and later posted on the Forbes website once it had received an answer from Richard Muller, a Professor of Physics at UC berkeley. Muller explains that one can *lower* entropy locally, however ultimately the total entropy, the universal entropy, increases. In the context of growing a plant, "you are taking the high entropy of rain and nutrients and converting them into a relatively low entropy (highly organized) state: the plant.", "The plant grows, but in doing so it throws off photons and oxygen and other things that increase the entropy of the universe."[3]

When we extend these notions to the process of making it begins to totally change how one is able to view the creative process, which is so often expected to produce a tangible output. This shift is something I've been experiencing through my time in college as first a product designer, and then a heavily physical-craft-based sculptor. I"ve begun to consider how much waste is entailed to produce a piece, and beyond that, how much energy and initial resource input is required to produce the raw

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[2] robert Smithson, "A Tour of the Monuments of Passaic, New Jersey," Artforum (December 1967); reprinted in Robert Smithson, The Collected Writings, ed. Jack Flam (Berkeley, Los Angeles, and London: University of California Press, 1996), pp. 68

[3] Muller, R. (2018, January 24). Is It Possible To Create Or Destroy Entropy? Retrieved December 17, 2020, from https://www.forbes.com/sites/quora/2018/01/24/is-it-possible-to-create-or-destroy-entropy/?sh=303515953712 Question: Is it possible to create entropy? Is it possible to destroy it? originally appeared on Quora Answer: by Richard Muller, Professor of Physics at UC Berkeley, author of Now, The Physics of Time, on Quora

material which I convert into a finished product. As an artist who values craft, and material so highly in my process and finished work, I find myself filled with a sense of internal conflict. Perhaps it's cultural or some part of "human nature" but the urge to "progressively" produce, to make something, is in conflict with the reality that in order to do so I must participate in an active destruction that seems to only be slowed by an active conservation. Otherwise, entropy means the destruction continues and even accelerates.

Both within our bodies, and through our possessions and acquisitions, we consolidate resources through our lifetimes. These resources are ultimately dispersed upon our deaths, and dissolve back into the cycle. Humans fit within this cycle more so than other species as we actively work to change, and effect change on, our environment in massive ways, almost at the scale of terraforming. Similarly, artists exert an accelerated entropy on our environment and its constituents. The effort of building, for example, with the wood taken from a felled tree that took tens or hundreds of years to make itself, illustrates this trajectory. What takes "natural" forces of entropy thousands of years can be done and undone in a short, human timescale when we exert our creative influence.

If we become more presently conscious of making as an entropic, or destructive process, not strictly one of creation and "progress", how does that change our practices as makers, and consumers of the made? Even when we think we are creating, we are destroying, always. This fits quite well within the cyclical model of entropy which James Meyer discusses in his essay *Entropy as Monument*[4].

[4] Meyer, James. *The Art of Return. The Sixties and Contemporary Culture*. The University of Chicago Press, 2019.

Entropy itself governs all aspects of the universe, including, and maybe especially when regarding the made object. This comes in multiple forms such as the transition from the highly contextual, and specific space of a piece and its components to the decontextualized, non-specific space they ultimately exist in once the maker, and perhaps the culture, that surrounded the piece no longer remains. Just like the physical deterioration that a piece is subjected to, so goes the initially infused intellectual and emotional content contained within the work.

Ancient monuments, buildings, and creations are a fantastic study of this phenomena of entropy of art. Often we claim to firmly know most of the relevant context of a site. Take the great sphinx, for example. While the long standing theory is that it has always been as it stands today with the head of the old kingdom pharaoh Khafre, even today it's origins, age, context, and original form are called into question. Of course it's impossible to know for sure what it really looked like, however some suggest it may have looked very different from how it does today. Considering scale and proportion alone, it is not hard to conclude that the pharaoh's head was not the original form. Some theories suggest it had previously been fitted with an animal's head such as a lion or jackal, accompanied by a second, identical sphynx next to it acting as protector of a gateway[5].

While impossible to really know what is truly "good" or "bad" (in a cosmically universal sense), it is easier to glean what we hold more highly within our value systems. While we prize our human ability to solve problems, express ideas in the form of built and constructed things, we cannot lose sight of the true destruction contained in

[5] Reader, C. (n.d.). This Wasn't Supposed to Be a Sphinx. Retrieved December 17, 2020, from https://www.smithsonianmag.com/videos/category/smithsonian-channel/this-wasnt-supposed-to-be-a-sphinx/

these processes of making. It is inevitable to participate in this process of accelerated entropy, and loss of energy in matter's conversion from raw material to created object, however, we can modify our practices to take into consideration what we are truly taking, and if it's worth what we are making. Is the cost too high for what our making ultimately achieves? While others may disagree with us, it's important to be able to make that decision for ourselves, and to be genuine to our value systems and not concede to expediency and convenience.

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If we think about it in market terms, it doesn't make sense. IF we think about it the way that got us here - efficiency, profit,

It's not efficient to waste so much. It's more efficient to fully harness
Thinking about resource cycles. If you

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