

anti-zoom bruno latour

The optical devices and unexpected courses of events in Olafur Eliasson's exhibition disturb our perceptions and force us to address the question of scale in space and time in an entirely new manner. In the era known as the Anthropocene, such issues have become increasingly urgent, since we poor humans—or rather earthlings—remain perplexed as to how to find our place among phenomena, which are at once immensely vaster than we are, and yet subject to our affect. It is no easy task to cut a way through all this. It is indeed this problem of scale that I would like to tackle in this brief essay written to accompany Eliasson's exhibition.

The idea of common sense—that “right path” which Eliasson's machines obviously render null and void—has it that one can circulate freely through and in every scale, from the most local to the global (in space), as well as shuttle about back and forth from the briefest instant (as, for example, in the course of a chemical reaction) to the longest period (as in so-called “geological time”—before, precisely, people started dubbing the blink-of-an-eye period known as the Anthropocene, a “geological era”).

Unfortunately “common sense,” here as elsewhere, is a poor guide. For neither the schema of space, nor that of time, appear continuous: levels of reality do not nestle one within the other like Russian dolls. It cannot be said that the small or the short lie *within* the large or the long, in the sense that the largest or the longest contain them but with just “fewer details.” This metaphor emerges from the optics of photography, from the zoom created by the use of a lens aptly called “telescopic.” In fact, one might almost posit a rule: good artists do *not* believe in zoom effects.

It is incorrect, moreover, to think that maps, for instance, prove the reality of the zoom effect: when one shifts from a map on a scale of 1 cm. to 1 km. to one on 1 cm. to 10 km., the latter does not contain the same information as the former: it contains *other* information that might (or might not) coincide with what appears in the former. In spite of appearances, the optical and cartographic metaphors do not overlap. It might even be said that the former has become so parasitical on the latter that it has rendered the very concept of cartography almost incomprehensible. Optics has distorted cartography entirely.

One can of course *arrange* maps to offer the *impression* of a zoom effect, but it is exactly that: an *effect*, an assemblage as artificial as a fake perspective in a stage set.

Such montage effects can be verified by a glance at Google Earth. The engine provides the impression of optical transition (the pixels become increasingly small), whereas, in practice, each stage in the “resolution” extracts from the new data sets on the server (following the same principle as in

cartography, similarly founded on the concept of a range of data whose projection depends entirely on the metric selected).

What is true for space is no less so for time—though, significantly enough, the point is even more evident in the latter case. When one turns from an account of a single day (June 6, 1944, for example) to one covering five years (the 1940–1945 War), the details of June 6 are not included in the second narration, just “*less exactly*” (as if such a change equated to the one from a grid of sensors in a high-resolution telescope to a grid at a lower resolution but at a wider angle). Though the author might aver that (s)he has “changed focus,” the “long” narrative does not contain the “shorter” one at all: it instead reiterates all the elements differently, to the point of constituting an entirely new story (and *not* the same account with just fewer details).

In this sense, Olafur Eliasson is right to insist on the fact that the mechanisms of disorientation he employs are as much temporal as spatial. As a temporal narrative relates less readily to the optical metaphor of the lens, the discrepancy appears more obvious for time than for space. The argument, however, remains identical: an account of June 6 is no more included *in* an account of WWII than a 1-to-10 scale is included *in* a 1-to-100 scale. In both cases, there is no insertion (no transitivity) of one scale into the other.

An appreciation of the argument concerning what occurs with time can aid an understanding of why the situation as regards space affords scarcely less realism. In the teeth of common sense, moving freely from one scale to the next—be it in time or in space—remains problematic.

Moreover, this illusion of unhindered movement limits reactions to the ecological crisis, since people think they can talk blandly about, for instance, “everything,” or about the “fate of the planet,” without realizing that what they call “everything” generally tallies with some tiny model in a research bureau or lab. In this regard, research by artists converges with analyses by sociologists and historians of sciences: there is no zoom, though there is a rich history of zoom effects.

Yet, it would be absurd to deny that differences in time and space are crucial. One cannot pretend that talking about the Amazonian Basin is the same thing as working on a ten-acre experimental station in the Jura. Biochemists observing the brief moment that a photon takes to be captured by an oak leaf are not dealing on the “same scale” as those tracking the shifting tectonic plates of the Antilles beneath the La Soufrière volcano. Though variability in the data may subsist, one must remember that these should not be confused with the arrangement of a range of data sets that have simply been assembled differently. Among these forms of arrangement, which the optical-cum-

photographic metaphor improperly characterizes as a zoom, there are two that are easy to grasp and thus relatively easy to circumvent: administrative hierarchy and disciplinary hierarchy.

The history of cartography emerges very largely from that of nation states, so that the arrangement of its data sets has respected, since at least the seventeenth century, the perimeters and hierarchies of governments. Today, however, all discussion of the Anthropocene must ignore limits such as counties, regions, states, and nations. Now, physical geography is not the factor of order behind "human" geography; rather it is the occupation of the territory by the modern state that has very largely dictated the type of arrangement, the organization, the staging, even, of all the information supplied to geographers, sociologists, statisticians, politicians, and which is subsequently analyzed and exploited by these same professions. Such interrelations have been exhaustively studied by historians of geography and cartography, as well as by historians of the official history of these same nations.

The second readily identifiable configuration affects the scientific disciplines themselves, which, a little like states, "occupy the territory" and claim to "include" or "absorb" all the others (which remain more local, more qualitative). Patently, though, this "pecking order" between disciplines cannot be employed to arrange data in a stable or continuous manner, since it is obvious that, on each occasion, the material gathered is not congruent at all. This point is a given for all those artists, who, like Eliasson, use advanced techniques extensively. Scientists from various disciplines cannot be marshaled as if they all belonged to one and the same continuum. To employ a rather arcane term, the connections between them are not hierarchical, but heterarchical. The relationship between a surveyor in the field walking along a trench on a segment of road, and his or her colleague back in the lab pouring over a false-color satellite sweep that covers the same area, is not one of inclusion. The second does not see the data of the first, with just "less detail": they are dealing with *different* findings. If they do manage, as the saying goes, to "reconcile" each other's data, this will only be due to a fortunate combination of circumstances and after countless meetings during which the two sets of data will be completely reconfigured. It will absolutely not arise from a hierarchical relationship, in which the "smaller" is subordinated to the "larger" (still less so from a hierarchical relationship predicated on competence, scientific probity, qualifications, or, indeed, salary!). Fortunately, then, since each discipline or sub-discipline "orders" the others differently, the resulting fruitful cacophony can hardly sustain the impression of a "zoom" for long. That the contrary view has occasionally been advanced seems to me to be due in part to the success of a celebrated film shot in 1977 by



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Charles and Ray Eames, *The Powers of Ten*, which has inspired, and, it might be said, led astray, many artists and scientists. By the optical expedient of threading a series of scenes one through the other, this film claims to materialize a near-continuous shift, from the infinitely large (the galaxy), down to the infinitely small (atoms), starting with and returning to the everyday situation of a couple enjoying a picnic in a park in the center of Chicago on a fine, sunny day. It is a movie in which everything is at once true and false. True, since, on every occasion, the images present exactly what is revealed by some device (telescope, satellite, microscope, particle accelerator), not to mention the movie camera filming the couple. Yet at the same time, everything is also false, because the position allotted to each image is completely implausible. Where could we stand to view the Earth from another galaxy? What laboratory would we have to visit to observe cells from the skin of our two amorous picnickers?

It is also unlikely that one is able to shift in a few seconds from microscope to particle accelerator. The supposedly “educational” space-time portrayed in Eames’s film is in fact a figment of the imagination. In the process of exploring the so-called “scientific image of the world” it betrays just how unrealistic this image is. To actually mirror the path taken by the eye through each of these scales would require a prolonged, continuous movement, both extremely complicated and exorbitantly expensive—one that would wander through all of Chicago, from laboratories via science institutes to academies, and even then one would not manage to thread all of these various “space-times” like pearls on a necklace.

Personally, I would be first in line to see an exhibition in which artists would demonstrate this type of motion, at once completely alien to our thought processes and yet perfectly realistic. Obviously, it would not be easy. To access data of different natures originating from various pieces of apparatus and belonging to totally distinct disciplines, and yet to avoid immediately organizing them in accordance with the disastrous metaphor of the zoom, requires the creation of an arrangement tailored to some other principle.

The least complicated alternative would be to order the data in accordance with the principle of connectivity—a principle that has the distinct advantage of not distinguishing the question of time scale from that of space (the whole difference between time and space being itself a figment of the zoom—or, as Henri Bergson puts it, of the cinematographic view of experience). In practice the data (better called the information “sublata”) is always composed of *connections* (a table with figures in columns, a sequence of sentences, pictures placed side by side, and graphs, to name a few). In truth, it is these connections that are subsequently projected in various formats to

provide the impression of describing a particular space and time (in fact, it is always a matter of space-time; a route or trajectory). The point (a philosophical one, but we cannot help that) is that one should not confuse *projection* with *connectivity*: the data are richer in connectivity than are the (inevitably limited) projections used to organize them. This is just another way of saying that maps (projections) should not be confused with what is obtained in the field; that narrative (invariably another format of projection) should not be mixed up with trajectory. Simply put, a projection cannot equate to the *path* followed to acquire the connections.

Yet what does learning how to traverse the “data accumulating the connections”—an expression that might usefully replace “learning how to obtain changes in scale”—actually mean?

Imagine describing, for example, a drainage basin, and among the data collected (“obtained”) you discover chemicals whose signature is the same as those extracted from a certain mine in the RDC (formerly Zaire). That is to say, in practice, that the comparison has been made using two data sets from entirely distinct sources. It is not first a connection between two places located thousands of kilometers apart that implies the transportation and concealment (probably illegal) of hazardous chemicals. On the contrary, the connection first requires pinpointing a *place* (in the sense of connection) before visualizing it through a projection onto a map (for example, by using an arrow to link the site to the RDC). Furthermore, it is this very *connection* that might be presented in the form of an account: “On a date D, highly toxic products from mines in the RDC were hidden by X at some place in this catchment area.” The argument would be exactly the same if one had started out with the following storyline: “Toxic waste traffickers transported from the RDC to this point dangerous refuse, traces of which should be detectable in the effluent from this critical zone.” If the account begins by establishing connections between agents subsequently placed in a chronology (before / after, brief time / long time, intense phase / uneventful phase, and so on), it can also be projected onto a map (the RDC, complete with every relevant anamorphosis).

With respect to the concept of connectivity, temporal and spatial dimensions are nonetheless entirely interchangeable (many search engines project data automatically in the form of timelines and maps). In practice no map is ever shown that is not afterwards *narrated* in the form of motion, in the form of events in time (for only thus can description occur); and, conversely, no narrative has ever existed without the aid of *localization* (again, so that description can occur).

It is now clear that the choice of the backdrop of a map or the storyline of a narrative on which to project the connections is a decision that follows *after* the links derived from resemblances identified in the data have been established. The order is then always the following: first identify the data sets, then locate the connections, then reconstruct the pathway and figure out a projection, and, finally, select the maps and/or narratives.

There is no reason to fall for the opposite trajectory, which is solely designed to convince us that we can describe changes in position in space or time by using the notionally fixed points of a chronological timeline or the pseudo-Euclidean metric of a map. Data sets do not occur *in* space or *in* time: instead, space (maps) and time (forms of narration) are schemas used to display and to present—either mimicking the ordered arrangement of the subsets of the hierarchy (those of nation states, or, as in Eames’s film, of scientific disciplines), or, on the contrary, seeking to rearrange the data so as to undermine or circumvent these hierarchies. Artists who take inspiration from the sciences are right to pour into this breach; luckily, they also often appear reticent to swallow the putative “scientific image of the world” whole. For when it comes to images, artists have more than one trick up their sleeve: they are unlikely to be taken in by zoom effects.

A yawning gap thus exists between learning how to interrelate the scales of space and time, all the while managing to eschew the zoom effect. These two modes of positioning in fact remain deeply antagonistic. To intercut every scale effectively (to “crosscheck,” to “reconcile” the data) it is necessary to jettison for good all notion of a continuous, transitive scale. This issue was of little importance at one time because the distinction between the natural and the social sciences (the humanities) still held water; just as the distinction between the sciences of time and those of history seemed to mean something.

The Anthropocene has gradually eroded such distinctions. Thus, to fully comprehend the dimensions occupied by humans, or rather by all earthly creatures, it has become necessary to devise new methodological principles: connectivity, yes; scale, no. This is the lesson in *orientation* I draw from the course in *disorientation*, provided by Eliasson.