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## Visual Media, Macro Photography, and Exponential Imagination: Scalar Views in Ecohumanism

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### Abstract

*This brief essay engages with environmental stewardship and scale in the Anthropocene. Taking inspiration from Kees Boeke's illustrated children's book *Cosmic View: The Universe in 40 Jumps* and Charles and Ray Eames's *Powers of Ten*—a short film based on Boeke's book—this photo essay illustrates how, through the production of ecart, the practice of macro photography can suggest the presence of worlds within one's world. Creative engagements are offered so that children and adults, who must all live through and contend with the Anthropocene, might appreciate notions of environmental scale, particularly in relation to our ecological footprints over time. In so doing, visual media such as illustrated books, films, and macro photography encourage sustainability on a larger scale than humanity has yet to imagine.*

**Keywords:** *Anthropocene; Macro Photography; Asymmetry; Scale; Sustainability*

### Asymmetrical and Exponential Scales

We live, as Timothy Morton writes, in an Age of Asymmetry. From one vantage point, humans exist as individual people leading individual lives; from another vantage point, humans have collectively become a geological force on a planetary scale (Morton, 2016, 7; see also Chakrabarty, 2021, 3). There is an unevenness between our individual and our collective roles on this planet, both of which involve the conceptual problem of scale. Simply put, it is easy to feel too small to make a difference in the face of environmental challenges that seem too large to comprehend. Stewards are needed more than ever, including stewards who can visualize on an exponential scale. This is one of the ways in which we might aim, in following Karpouzou and Zampaki (2022), to “re-think our identity and position in a human and more-than-human world in order to shape sustainable future societies” (1).

We now live within the Anthropocene, a term introduced by geologists more than two decades ago to describe how individual actions from humans have damaged the planet over the last three hundred years (Crutzen & Stoermer, 2000, 17). Whereas previous generations may have turned to denial and procrastination in the face of environmental change, ignoring the effects of the Anthropocene will not make them go away. As the Anthropocene and all that comes with it enters into the public discourse, it is becoming increasingly less plausible to continue wishing for a magical solution 40, 50, 60 years down the line. The futures humanity has been putting off have arrived. And while mass extinction may make for an unpleasant

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topic, it is ultimately a disservice to leave future generations unknowledgeable and unprepared. Children and youth will be the ones to inherit this world, and they can accomplish more than we think.

Such was the understanding of Kees Boeke in creating *De Werkplaats*, an experimental school in The Netherlands founded in the 1920s. Along with his partner, Beatrice Cadbury, Boeke envisioned that *De Werkplaats* would contribute to a peaceful and equitable society, and that it would do so through a philosophy of education emphasizing how tiny parts exist in relation to the whole. This vision for teaching and learning parallels the message in Boeke's *Cosmic View: The Universe in 40 Jumps*, an illustrated children's book and teaching guide published in 1957 that continues to inform participatory curricula at *De Werkplaats* today. As Catherine Burke and Karen Könings (2016) explain, the book

originated from texts and drawings which were used by children at *De Werkplaats* to aid their mathematic and scientific learning through an exercise in magnification. The book goes on to graphically demonstrate a view of the same object magnified repeatedly by the power of 10 and then the reverse. The notion of scaling up (and down) employed in the book continues to have its influence at the school as it implies the necessity of employing a vision beyond the immediate realm and expanding what we are able to imagine. (726)

This is the sort of imagination that Morton suggests humanity needs but has yet to achieve: an exponential imagination that co-exists at multiple levels of magnification.

What Boeke's *Cosmic View* does is not only teach the concept of scale but show children how we as humans relate to those different scales: microscopic, planetary, galactic, cosmic, and otherwise. From a galactic view, for example, the Earth seems small. But, by comparison, the Milky Way Galaxy seems miniscule from the viewpoint of the larger cosmos, just as miniscule as the nucleus of the sodium atom in the grain of salt on a young girl's hand. Zooming out seems to contract, zooming in seems to expand, and in the meantime, nothing has actually changed size. It is all a matter of perspective. As Boeke writes:

Whereas at the end of our first journey we stood in awe before the imposing greatness of the dimensions of the universe, and felt as nothing in comparison to their immensity, the conditions are now completely different. True, we feel as much awe and reverence when we attempt to think of the miracles of dynamic power that are hidden in these domains of the smallest existing entities, but our own dimensions are now indescribably colossal compared with what we see. (1957, 51)

As humans, then, we are at once both small and colossal. We are but one lifeform in a larger cosmos, and we are each members of a species that, at the time of this writing, is estimated to have nearly eight billion members. One person in eight billion may indeed be very small, but eight billion people collectively doing small things can quickly become colossal. What one cannot accomplish alone, many can accomplish together. This is important for children, as well as adults, to learn.

The conceptual ideas within *Cosmic View* have gone on to influence education, art, and interdisciplinary scholarship alike. For instance, designers Charles Eames and Ray Eames took the book as their inspiration for their short film, *Powers of Ten* (1977). Beginning with two people at a picnic by Lake Michigan in Chicago, *Powers of Ten* moves out of the galaxy, zooming



out to 100 million light years before reversing course and zooming in on the picnicking pair to magnify “a proton in the nucleus of the carbon atom beneath the skin on the hand of the sleeping man at the picnic.” *Powers of Ten*, like *Cosmic View*, provides vastly different perspectives on the entities in which we live and simultaneously live with us. *Scale Theory: A Nondisciplinary Inquiry*, by Joseph DiCaglio (2021), does, too. Taken together, these works include entities that are not only big and small but exist in interconnected and interrelated ways.

### Photographing the Anthropocene

Photography provides further explorations for current and future environmental stewards to hone a sense of scale while considering how tiny parts do relate to the whole. As illustrated here, one such way to adopt a scalar view (DiCaglio, 2021) engages with macro photography to produce eco-art. In this regard, macro photography allows for examinations of ecological matter(s) from multiple magnifications; working with multiple magnifications contributes to understandings of scale. The ability to zoom in (and zoom out) with cameras offers an active form of attuning to the world—one that can both supplement and extend beyond pedagogical scaffolding materials involving films and illustrated books such as *Powers of Ten* and *Cosmic View*.

The figures below were photographed on the other side of the Great Lakes system in Michigan near the Detroit River. All the images were taken within the same 30-foot radius using a macro lens (Figures 1-5). Within these photos are organic matter that appear to be much larger in the photographs than they do in real life. From small sticks and twigs to dried flowers to blades of grass, muck, and more, there is much to consider within this accessible everyday space. Photography thus offers a way to pause, to slow down, to explore different perspectives, to attend more closely to what surrounds. In the Anthropocene, all that is around us is worthy of close examination. Where we already are is a generative place to begin, and photographic techniques can help expand our point-of-view (Ulmer, 2021).

**Figure 1.** *Untitled*, Belle Isle, Detroit, ©Jasmine Brooke Ulmer



**Figure 2.** *Untitled*, Belle Isle, Detroit, ©Jasmine Brooke Ulmer



**Figure 3.** *Untitled*, Belle Isle, Detroit, ©Jasmine Brooke Ulmer



**Figure 4.** *Untitled*, Belle Isle, Detroit, ©Jasmine Brooke Ulmer



**Figure 5.** *Untitled*, Belle Isle, Detroit, ©Jasmine Brooke Ulmer



This creative engagement could be replicated with varying photographic equipment in ways that capture the spirit of macro photography. As Juan Carlos Castro describes, macro is “a term in photography that is either a setting or a lens that enables the ability for a camera to focus closely, an idea category in and of itself” (2015, 24). Castro similarly suggests the term “looking closely” (24). Both attend to scale, offering a vantage point from which to approach the Anthropocene and potentially develop a greater sense of planetary belonging along the way.

Macro photography encourages the noticing of all kinds of tiny details. If small spaces are worlds unto themselves, then photographers can begin to see how, when walking or rolling on the grass, they might inadvertently be stepping on wildflowers or snails. While in natural settings, Anna Tsing (2010) encourages us to “look down. A city lies beneath [our] feet” (191). Even as small as children are, then, on some level, it is difficult to not have an effect—to not leave footprints in the mud that are reminiscent of the invisible carbon and environmental footprints that we leave behind each day. Inadvertently, we can end up crushing worlds with a single misstep.

When we compare ourselves with smaller matter(s), as Boeke reminds us, “our own dimensions are now indescribably colossal compared with what we see” (1957, 51). Helping people realize their own power amidst overwhelming challenges may guard against the fatal pessimism of which Morton often warns. If humanity gives up in the Anthropocene, humanity will have fallen prey to an asymmetrical extreme in which we are each too small as individuals to make a meaningful difference in a larger world. If that happens, then the possibility of a more peaceful, equitable, sustainable world will have been foreclosed upon in advance. In offering both children and adults the opportunity to magnify their own potential through visual media, macro photography, and eco-art, engagements with stewardship and scale in the Anthropocene might offer hope for different possible futures, ones that work toward exponential imaginations, instead.

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