

## Experiencing Complexity and Retooling Understanding for Sustainability

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For Julian Edgoose the real issue is that students are being exposed to a too simplified sense of their worlds with the result that the complexity and unpredictability of their lives and of ecology is lost. He starts with the premise that schools are failing in their presentation of the issue of sustainability, not through total apathy, as some theorists have suggested, but because the diagnosis of the problem has been wrong, and then he offers an alternative analysis. The problem, he believes, lies in the narrative simplification of life exemplified in Western societies by the novel, a thesis proposed by Charles Taylor. As a result, our students and we now perceive our lives and the world to be, like the novel, simple, linear, and predictable. But this simplified view of humans and the world make it difficult, or well nigh impossible, to understand the complexity of the reality in which we are immersed and, most importantly, to think in the complex ways necessary for sustainability to become part of our North American culture.

However, all is not lost, and Edgoose sees a way out of this myopic simplification in the example of computers that, through climatic and ecological modeling, are beginning to “think” about these complex issues. Using the famous example of the “butterfly effect,” Edgoose sees a way for students to begin to encounter complexity. It is these models, with their descriptions of complex systems and of unpredictability, which will model life’s complexity, thus encouraging students to think differently. The result of this ability to think with complexity leads then, according to Edgoose, to sustainable action.

I propose in this short essay to do two things. First, I offer some examples of how students might experience complexity, in the hope of building a bridge over what is a troublesome gap between Edgoose’s thinking in or with complexity and sustainable action. The history of philosophy is littered with thinkers who have struggled with the distance between thought and action, intention and doing. My own educational experience tells me that the move from thought, however complex, to action is not easy. The second part of my essay expands the discussion of narrative. Using the work of Lev Vygotsky and Kieran Egan, I propose that Edgoose’s narrative simplicity resembles what has been described as a cultural, cognitive tool. These tools, provided to us by our culture, help us to make sense of the world we are encountering and to find a home in our culture. Additionally, I suggest that there are other tools, besides just narrative simplicity, in our cultural, cognitive bag that might be applied more fruitfully by educators as an antidote, or counter-balance, to this particular tool. The hope then is to locate cultural cognitive tools that actually align better with Edgoose’s suggestion of complex thinking and that offset the dangers of simple narrative.

## EXPERIENCING COMPLEXITY

Slavoj Zizek's appearance in the film *The Examined Life* is provocatively placed at a New York waste disposal site.<sup>1</sup> Amidst the din and stink of dumping garbage Zizek's suggests that one of the challenges to the environmental discussion is the psychoanalytic concept of disavowal, what the existentialist might call self-deception. According to Zizek, what occurs is that we read a treatise or a newspaper suggesting that the world is in an abysmal state, understand rationally, but yet, when we go outside, we see gardens, clean streets, and signs of order everywhere. While we "know" that the environment is in trouble, we simultaneously disavow that knowledge, "not-knowing that which we know". Zizek's response to this conundrum is that humans need to experience that which they currently only read about, whence the idea of a discussion at the dump. People need a visceral experience of the problem; they need to know in a way that goes beyond cognitive knowing. And this leads the educator in me to ask what might the experience of complexity be that could accompany Edgoose's desire for complex thought and simultaneously overcome Zizek's concern with regards to disavowal?

Imagine a group of fifth-grade students in a forest setting. They have each been given a card with a picture of a plant, animal, or energy vector on it along with some basic information about habits, food, likely habitats, and so on. They are then handed funny looking belts with cords of various lengths hanging off them and a clip attached to each. The environmental instructor asks that, using the plant, animal, or whichever appearing on the card, each student clips himself or herself to any of the others in the group to whom they see themselves related. At first the process is slow and the connections hard to recognize, but as they start to see how the sun and its energy is related to all the photosynthesizing plants, which in turn are connected to various herbivores, they begin to get the idea. From here the connections to carnivores are apparent. However, they then realize that there is more going on here than merely the food chain. Plants work in conjunction with each other as well, providing shade, protection, or food. The same then happens among the herbivores and carnivores, and eventually, when the wild sounds of clipping stop, there, lo and behold, is a physical representation of the "web of life," each child, representing a single character, physically attached to a host of others. To elaborate on this experience, you might introduce the idea of extinction by removing particular individuals, and observing their loss of support as strings are cut.

Here is another example. Picture a group of people in a house, the kind of place the Big Brother reality series uses, but in this case we will call it "eco-complexity house." The rules are simple: survive, thrive, and flourish. However, this household needs to operate on the rules of a complex eco-system. This means that everything that is currently an unaccounted for throughput, for example, waste removal systems, food intakes, and most energy use, must cease. This takes care of Zizek's disavowal problem because, to paraphrase him, people in the house must deal with their own shit. They will rapidly come to understand how they are interconnected with the world through food, waste, and energy use and will respond in the way the complex earth does, in the way, indeed, we all must, if we are to achieve sustainability.

## RETOOLING UNDERSTANDING

Above I suggested that there is a similarity between Edgoose's idea of narrative as cultural tool that shapes how individuals come to understand the world and the work of Vygotsky<sup>2</sup> and Egan<sup>3</sup> as they describe their own versions of cognitive tools. Both Vygotsky and Egan suggest that there is more than one tool involved in getting to know one's world. In fact, if Edgoose is right that there is a complexity to computers and computer modeling, then their designers must be using some of these other cultural tools. Since narrative is not the only tool available to us for understanding the world we live in and, as Edgoose points out, it is a fairly recent addition, then the appropriate response to the challenge of complexity might be to identify and concentrate upon those tools that facilitate access to complexity and can counteract the simplicity of narrative. Metaphor is a central cognitive tool of oral language and plays an important role in non-narrative communication such as poetry. It is a powerful tool that enables us to make sense of the world. Take, for instance, the metaphors that might be used to describe the mind; there is surely a qualitative difference between descriptions of the mind as being like a clock, a machine, a computer, or an eco-system and these metaphors indicate the way we understand ourselves and the world around us.

Egan's meta-narrative tool, one that belongs to his philosophic understanding, might be another example. Here individual narratives come together, are situated in context with each other, and thereby form a more complex super-stratum, much like Edgoose's discussion of where and how narrative fits into Modern Western history does. The idea then would be for educators to draw more upon those tools that are already part of our cultural inheritance and that lead in the direction of complex thinking.

## CONCLUSION

I agree with Edgoose that there is a kind of simplicity in modern and postmodern thinking that is troublesome to the project of sustainability. However, I am not convinced that using the computer, even as an example or metaphor, to model more complex thought is enough to lead to sustainable action. As such I have suggested two additional possibilities: through experiential learning and the use of cultural, cognitive tools more sensitive than the narrative to the complexity described by Edgoose, I believe we increase our chances of promoting complex thinking and supporting the message of sustainable action.

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1. *The Examined Life*, DVD, directed by Astra Taylor (Canada: Zeitgeist Films, 2008).

2. Lev Vygotsky, *Thought and Language* (Cambridge, Mass.: MIT Press, 1962).

3. Kieran Egan, *The Educated Mind* (Chicago: University of Chicago Press, 1997).