

Abstract Binary Oppositions

What are abstract binary oppositions?

Abstract Binary Oppositions are the most basic and powerful tools we have for organizing and categorizing knowledge. It is as though we first have to divide things into opposites in order to get an initial grasp on them; so we easily divide the world up into good/bad, high/low, earth/sky, hot/cold, courage/cowardice, and so endlessly on. Think of the classic fairy-tales and consider what lies just below their surfaces. What is Hansel and Gretel about? It reads like a meditation on the opposites of security/fear. And Cinderella?: rich/poor or vanity/modesty, selfishness/altruism. Jack and the Beanstalk, and the others?: courage/cowardice, danger/safety, wealth/poverty, enterprise/timidity, cleverness/stupidity, familiar/strange, and so on. It is as though young children begin to develop these powerful binary categories as soon as they learn language.

And it isn't only children, of course. Apply this kind of analysis to your favorite TV show. Slugging it out just below the surface are these oldest and most fundamental abstract sense-making cognitive tools. What else underlies the classic Western or Cops & Robbers or sci-fi stories? We see these kinds of oppositions in conflict in nearly all stories, and they are crucial in providing an initial ordering to many complex forms of knowledge. The most powerfully engaging opposites—like good/bad, security/fear, competition/cooperation—are emotionally charged and, when attached to content, imaginatively engaging.

How can we employ abstract binary oppositions in teaching?

Topic: Natural and human built characteristics of environments

Subject Area: Social Studies

Cognitive Tool: Abstract Binary Oppositions

To explore the natural and human built characteristics of environments one could juxtapose the country with the city. What kinds of values and qualities does the country have? Why do people talk of “going to the country” on a holiday (especially if they live in the city)? Why might people living in rural areas be eager to get into the city? What kinds of things does one find in rural versus urban areas? How does each represent a different style of life? Why, in highly human built environments do we often talk of life going at a quicker speed or pace than in more natural environments?

Topic: Crocodiles

Subject Area: Science

Cognitive Tool: Abstract Binary Oppositions

A story on crocodiles might be powerfully shaped around the abstract binary oppositions of ferociousness and gentleness. Imagine standing in shallow water. You notice, to your right, some movement in the water. As you look, you can see two eyes, staring at you, slowly getting

closer. The thought of encountering a crocodile, with its razor sharp teeth and massive jaws, is enough to make anyone nervous. And yet, this animal so feared by human beings for its ferociousness is also known for its gentleness. It protects, like any parent will instinctually do, its own young. It even has a symbiotic relationship with the Egyptian Plover, a bird sometimes referred to as the “Crocodile Bird.” Plovers will fly into the crocodiles’ mouths so as to feed on bits of decaying meat that are lodged between the crocodiles’ teeth. The crocodiles do not eat the plovers—as the birds are providing the crocodiles with greatly-needed dentistry.

Topic: Sportsmanship

Subject Area: Physical Education

Cognitive Tool: Abstract Binary Oppositions

Sportsmanship is something that can be beautiful and ugly. What are the kinds of behaviors that exemplify “beautiful” sportsmanship? What kind of behaviors observed on a soccer field, tennis court, or rugby pitch, is “ugly”? A story on sportsmanship as part of a Physical Education lesson would describe what makes certain behaviors desirable and others undesirable.

Topic: Worms

Subject Area: Science

Cognitive Tool: Abstract Binary Oppositions

A story on earthworms might be shaped around the abstract binary oppositions of power and vulnerability. The earthworm is, indeed, powerful. Its “soil science” plays a vital role in the maintenance of the soil. Earthworms tunnel deep in the soil. As they do so, they bring subsoil closer to the surface, mixing it with the topsoil. Earthworms secrete a slimy substance that contains nitrogen; this is an important nutrient for plants. Not only does the slime provide nitrogen for the plants, but it is sticky, helping to hold clusters of soil particles together in chunks called aggregates. Earthworms digest the organic matter in soil, recycle the nutrients and make the surface, or topsoil, richer and better for plants to grow in. It is estimated, in fact, that each year 15 tons of dry soil in every acre of land pass through earthworms. Earthworms’ work is, thus, closely tied to human survival. Without the soil-rejuvenating and enriching work of worms it would be impossible to grow the crops required to feed the world. An earthworm’s work requires great strength. It is the truest of miners—working in moist, dark channels beneath the surface, away from the light of the day. And yet, worms are incredibly vulnerable. They are tiny, soft, and do not move fast. If the soil they are in gets too wet, they can drown. Coming to the surface creates a whole spectrum of dangers for them, whether it be attack from birds or other prey, or getting scooped up—or stepped on—by a human being.

Why do abstract binary oppositions engage our imaginations?

Abstract binary opposites, as they are used in the thinking of oral cultures, are not necessarily precise opposites, but they serve to organize some topics and then allow us to make further discriminations. For example, setting up such oppositions as hot/cold or big/little provides an initial conceptual grasp over fields of temperature and size, and then one may make sense

within these of a range of conceptual discriminations, like “warm,” “cool,” “tiny,” “enormous” etc. If we reflect on the kind of fantasy-stories young children enjoy so readily, we see that they are built on relatively stark oppositions between security/danger, good/bad, courage/cowardice, and so on. Two features of these opposites are clear; one is that they are emotionally powerful, and the second is that they are abstract.

We would be wise to be suspicious of the simple claim that young children and people in oral cultures are “concrete thinkers;” the prevalence of this odd belief has obscured the sense in which they are also, and perhaps primarily, abstract thinkers. We can employ this powerful tool that all children have to help them in learning. This doesn’t mean that we are going to teach them that everything is made up of binary opposites, but rather it might guide us to see how we can often introduce topics in binary terms, in order to provide a clear and comprehensible access to it. Once access has been gained, then we can mediate between the opposites, and elaborate the content in all kinds of ways.

In the imaginative classroom, then, we will expect binary opposites to be used commonly to introduce topics to students, and also we will expect them occasionally to be made explicit and to be discussed. This will be true for whatever subject area we are dealing with. If we want to structure a unit on the transformations butterflies go through we can bring forward the unusual combination of their early larvae and cocoon lives being constrained in a small space, and that they eat continually, but when they become butterflies their range of movement is, for many species incredible and they eat hardly at all. That is, by focusing on such oppositions in a topic we have one additional tool for making the subject imaginatively engaging to students.