

## General Ideas and Anomalies

### What are general ideas and their anomalies?

The grasp of general ideas and their anomalies is a tool that enables us to perceive and construct abstract ideas about nature, society, history, and human psychology—and then recognize their inadequacy and rebuild them into more complex ideas. Recognizing the interaction between generalizations, theories, ideologies, schemes, etc. and anomalies can lead quite directly to at least one teaching strategy for students developing “philosophic understanding,”: the teacher encourages the development of theories, ideologies, etc., and then proposes to the student an anomaly kicking the process into action. The teacher’s role is not to try immediately to undermine the student’s theory or ideology but rather to bring it to greater and greater sophistication, until it eventually crumbles under the load of anomalies, letting the student see the limitation of such generalized schemes but also recognize their utility and the circumstances in which they are genuinely powerful aids to effective thinking.

### How can we employ general ideas and their anomalies in teaching?

**Topic:** Colonialism

**Subject Area:** History

**Cognitive Tool:** General Ideas and Their Anomalies

What kind of general idea can be used to inform teaching on colonialism? One possible way to discuss colonialism through a general idea would be to introduce the notion of equality. Many liberal views embrace the view that people are equal and so it is anomalous that some people should have the right to decide the fate or status of others. If this is the case, then why do conquering nations treat some countries differently from others? Did the British Empire demonstrate the same sense of “equality” in governance—so for example did it honor in the same way the basic human rights of its people—in India as opposed to North America? Why did some colonies break away from the British Empire with violence and after bitter struggles, and some negotiate their independence?

**Topic:** Mosses

**Subject Area:** Biology

**Cognitive Tool:** General Ideas and Their Anomalies

What is the most powerful general idea underlying this topic? The fossil record suggests that the first plantlike organisms (algae) arose in water about 500 to 600 million years ago. Some of these algae eventually evolved to live out of the water, at least part of the time. From these algae there eventually evolved (about 300 million years ago) two separate groups of land (i.e., terrestrial) plants: Bryophytes and Tracheophytes. The adaptations that allowed aquatic organisms to survive in dry land environments were not simple and form the crux of the evolutionary story of plants. Mosses and ferns are important “intermediates” in the

evolutionary history of plants that exemplify some of the key adaptations to life on land. Indeed, the major theme you might choose for a unit on plants is that the evolutionary story of plants can be represented by “adaptations to life on land” which the different types of plants exhibit. The invasion (through evolution) of terrestrial environments by once aquatic organisms could be a main underlying idea in such a mini-unit.

*An alternative general theory:* Plants are very diverse. For the sake of organizing the vast array of plant (and other) species, scientists have separated plants into groups using a logical, hierarchical system of taxonomy. The plant kingdom is divided into five phyla; three of them include different forms of algae (Chlorophyta, Phaeophyta, and Rhodophyta). The two remaining phyla are Bryophyta (mosses and relatives) and Tracheophyta (vascular plants—by far the most diverse). Although plants are incredibly diverse, they also exhibit a certain degree of unity, as evidenced by their being placed in the same kingdom. So as we study the various differences found between species, we will always keep in mind the key characteristics that unify all plants (eukaryotes; mostly multicellular; photosynthetic autotrophs; cellulose in cell walls; starch for storage; alternation of generations, etc).

We might explore as anomalous why some plants form incredible masses of variants whereas others do not. Not all these cases seem straightforwardly explicable in terms of environmental pressures. What other mechanisms then can come into play, to force our original theory to become more sophisticated?

**Topic:** Conflict Resolution

**Subject Area:** Psychology/History

**Cognitive Tool:** General Ideas and Their Anomalies

Since our Cro-Magnon ancestors overcame Neanderthals some forty thousand years ago, conflicts remain universal and inevitable for our species. When threatened, instincts drive us to fight, flee or freeze. Yet, logic dictates that human survival depends upon learning to resolve conflicts in ways other than fighting and vanquishing our perceived enemies. At every level of existence, personal, political and planetary, we feel the need to assert, express and protect ourselves, while we have the capacity to listen, think and learn to make peace. How are the competing forces of instinct and logic at work in our lives? How can we learn to think through conflict?

*An alternative general theory:* How important and responsible are leaders for keeping the peace? What are various styles, models, and methods of handling conflict for effective leadership?

If Cro-Magnon wiped out Neanderthals as a result of fighting, why did it not happen earlier? Why is it that we find settlements of both close to each other? Are there other ways to account for the extinction of Neanderthals that have nothing to do with conflict?

**Topic:** Revolutions

**Subject Area:** Social Studies

**Cognitive Tool: General Ideas and Their Anomalies**

In this unit we will look at a variety of different kinds of revolution—in the arts, in history, in science, and so on. We can draw to students’ attention things that didn’t change at all during each revolution. In reflecting on the French Revolution, ask them to find out what they can about the lives of peasants in France, particularly in the more remote regions. Did they even know there was a revolution going on? How many noble families are to be found after the revolution with their fortunes intact?

What effects did the Industrial Revolution have on peasants’ lives? Did it have significant impact on housing? If it is seen as a benefit to people in general, what effects did it have on those it attracted from the countryside into towns? If it is seen as a catastrophe, what are the statistics for child mortality and other diseases before and after?

In reflecting on the Industrial Revolution, some students may have formed the idea that the revolution reflected a new industrial class coming to power. If so they could be asked to trace the number of old landowning upper-class members who invested heavily in the new industries. Ask students to discover how much of the capital that financed the Industrial Revolution came from the slave trade, and how far this might affect their theory about its causes.

### **Why do general ideas and their anomalies engage our imaginations?**

Following literacy, the next major system upgrade available in our culture for our brains is tied up with the adoption of general, abstract, theoretic thinking. Certainly, younger students use abstract ideas, and form generalizations, and can grasp and frame theories, but with the mental upgrade to “philosophic understanding” these forms of thought take on a new and central importance, shifting the bias of the mind towards locating the most significant meanings in theoretic abstract terms.

At the end of the first year of my B.A. in history, in a social gathering of our small cohort, Dr. Bossy asked us to identify the most important thing we had learnt during the year. When it came to my turn, I said “Anglo-Saxon law.” I was told that the question referred to life in general not the content of the courses we had taken. I mumbled a bit incoherently that I really did mean Anglo-Saxon law because I had become fascinated by how one group of people used means of persuasion, coercion, and control to generate order in society, particularly an order that benefited them. I tried to explain how details of the imposition of law in Anglo-Saxon kingdoms connected with the experiences I had been having as a novice in student politics, discovering how the more adept “politicians” managed to manipulate rules of order, motions, and allies to get their way. After I had stumbled around unclearly for a few minutes, Dr. Bossy said, “You mean, you’ve discovered power.” He was exactly right. What had earlier been a lot of detailed, varied, and disparate knowledge and experience had become swept together into

generalized concepts in which I had begun to locate their real meaning; those diverse and different facts and events were really just aspects of that great new vivid concept “power” and the processes by which it operated. It wasn’t that I hadn’t understood the meaning of “power” before, but it had come into a new focus with a new intellectual potency, generating a new kind of understanding. When I now looked at events in Indonesia or the drama of French or American elections, I had a new and potent tool available for analyzing and understanding them. They were no longer just particular and distinct events – Anglo-Saxon law, student politics, American elections, even family relationships were all phenomena that could be better understood in terms of the uses and abuses of power. And, of course, “power” wasn’t the only concept I was coming to understand in this way – “nature,” “society,” “love,” “evolution,” “psychology,” and so on, began to populate and form my new mental landscape. “Philosophic understanding” is constituted by the development of a range of such concepts and the sense that they expose the real truth and the real reality of things. Before, we feel, we had seen as through a glass darkly.

The cognitive tool that can carry the mind to increasingly sophisticated theoretic thinking is openness to anomalies. It works something like this: Early in their engagement with theoretic thinking, students are attracted to powerful general ideas that suddenly sweep together a whole range of phenomena and give a new perspective on them. Similarly students become engaged by general theories. Once the “philosophic” process is underway, and if students are intellectually inquisitive, they will come to recognize that the generalized concepts and theories are not adequate to the particulars they have swept together. For example, exposed to a particular environment, a student might conclude that a competitive social and economic system will ensure that the best rewards will go to the best people and, so incentivized, such a system will be in the best interests of everyone in the end. But this student will then come across cases which don’t fit this simple ideology; some poor and powerless people will be recognized as being in such a social condition as a result of bad luck rather than incompetence. These cases are anomalies to the neat ideological scheme. As the student gets to know some stupid and horrible rich people whose power and wealth are also a matter of luck, further anomalies will occur to the neat ideological scheme.

The response to anomalies, usually, is not to discard the ideology but rather to adjust it only enough to accommodate the cases that don’t fit. In the above example, the student might accept that, given regrettable inefficiencies in complex social systems, there will always be these chance casualties or unmeritorious beneficiaries, and that we should introduce mechanisms to minimize their occurrence or alleviate the stresses they cause to the system. That is, recognizing anomalies drives the ideology or generalization or theory to greater sophistication to better represent the particulars it is abstracted from. (Some people, of course, simply refuse to acknowledge anomalies, and so their schemes, ideologies, theories, generalizations, etc. remain crude and inadequate for understanding or sensible behavior. Consider the ideologues of the Nazi party or of Soviet Russia or of that guy down the street. The more sophisticated form of the ideology will then be open to further anomalies, which, in turn, the so-far well-educated student will accommodate by adjusting the ideology further. And, in turn again, the yet more sophisticated ideology will be open to yet further

anomalies. And so it can go on, anomalies demanding greater sophistication, and greater sophistication bringing to light further anomalies. In the end, if all goes educationally well, the student comes to recognize that the ideology cannot be true or false or real in the way to which the particulars from which they are abstracted can lay claim.