A Phenomenological Anthropology of Texts and Literacy

Wolff-Michael Roth

Texts and Lived Experience: Three Cases

Case One

About five years ago, I started gardening and developed it to the point that I now produce all the vegetables my family eats throughout the year. As I am writing this chapter, it is winter and I am supposed to prune several trees and bushes that we planted. Never having pruned before, my wife and I had bought a book entirely dedicated to pruning, containing many photos and diagrams of partially pruned pushes, where to cut and what to leave. Over the past several weeks, I had repeatedly taken up the book, tried to read and make sense of it, and subsequently laid it aside, completely frustrated by the fact that I did not know where to start cutting my own trees and bushes. Last week, we read that there was a free workshop on in a tree nursery and fruit farm. During the weekend, we attended it. The 25-year pruning veteran who ran the workshop started to talk and after 15 minutes, I turned around to my wife and said, “no better than the book.” But once he started pruning and talking about why he was cutting the branch he was about to cut, and why he was leaving another one nearby, and when he pointed to a pruned tree that he wanted his tree to look like, things became better. As he went on, I started predicting which branches he would cut. Taking his actual cutting or not cutting as feedback, my predictions became increasingly better. Two hours later, I returned home and began pruning a few bushes and small trees. Inside, I took another look at the book and now, everything was clear. I realized that the book was telling me exactly what I had to do, and it did so in a very clear way.
Case Two

One of my research projects concerns the reading of graphs by scientists. For this purpose, my graduate students and I had culled graphs that were prevalent in introductory ecology courses and associated textbooks, including a simple line graph showing a linear death rate intersecting at two points with an inverse parabolic birthrate. Over the years, we have asked about 50 scientists (half from ecology the other half from physics) to read the graph. Astonishingly, almost none of the nonuniversity ecologists with masters and Ph.D. degrees and between 6 and 25 years of research experience in the field could provide a standard reading of the graph; similarly, many physicists provided nonstandard interpretations. At the same time, my ethnographic work in various workplaces shows that even individuals without scientific training become highly competent users of graphs that are part of their familiar, everyday job setting.

Case Three

Recently, I conducted several multiyear ethnographic studies of scientists and their graduate students. Some of the actions that biologists and ecologists engage in during fieldwork concern the identification of plants and animals, for which they also draw on field guides. Over the past half-dozen years, my research assistants and I have recorded numerous situations where scientists or their graduate students attempt to classify some entity but, even though both field guide and entity were present in the situation, they had great difficulty in making the match between descriptions and representations on the page (photographs, diagrams) and the worldly things they supposedly describe.

Six Problematic Issues in the Consideration of Text and Visual Representations

The preceding chapters in this section are about designing better textbooks and about teaching with or training for teaching with textbooks in primary science classes. None of my three cases have anything to do with primary science and yet they teach us much about how or how not to approach texts for young students. When science educators reflect on children and their learning, particularly about difficult moments, they often use deficit approaches. There is something wrong with primary children and even their teachers when they do not make sense of science texts or texts that make reference to and describe scientific objects and events. Yet the three episodes show that even highly trained and successful individuals may have difficulty making sense of scientific texts and diagrams that are not directly from and about their familiar world.

In the first case, I was struggling to come to grips with what turned out to be an excellent book about pruning. I have hardly ever seen a book with instructions apparently so clear. There was not a word that was unfamiliar. There were many drawings and photographs of particular trees and bushes. Furthermore, I have these kinds of trees and bushes in my garden. Yet when I went into the garden with the book, standing right next to a currant bush, making the book and my garden a reality come together seemed impossible. Similarly, the scientists who unsuccessfully attempted to read graphs