

**The Future Eaters: Metaphors and Aphorisms
as Environmental Teaching Tools**

John Cairns, Jr.

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A collection of papers by
John Cairns, Jr.

met-a-phor

Pronunciation: \ 'me-tə-, for also -fər \

Function: *noun*

Etymology: Middle English *methaphor*, from Middle French or Latin; Middle French *metaphore*, from Latin *metaphora*, from Greek, from *metapherein* to transfer, from *meta-* + *pherein* to bear — more at [bear](#)

Date: 15th century

1 : a figure of speech in which a word or phrase literally denoting one kind of object or idea is used in place of another to suggest a likeness or analogy between them (as in *drowning in money*); *broadly* : figurative language — compare [simile](#)

2 : an object, activity, or idea treated as a metaphor

aph-o-rism

Pronunciation: \ 'a-fə-, ri-zəm \

Function: *noun*

Etymology: Middle French *aphorisme*, from Late Latin *aphorismus*, from Greek *aphorismos* definition, aphorism, from *aphorizein* to define, from *apo-* + *horizein* to bound — more at [horizon](#)

Date: 1528

1 : a concise statement of a principle

2 : a terse formulation of a truth or sentiment : [adage](#)

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FOREWORD

I take it as axiomatic that metaphors are essential to communicating complex topics. In 1995, I began explicit introduction of activities to focus student awareness of metaphors in communication. In 2002, I received a small grant to investigate and develop materials for the applications of metaphors in science education. Among many other findings, two really stand out: authors Miller (*The Body In Question* 1978) and Bronowski (*Science and Human Values* 1965) clearly illustrate the utility, if not the necessity, of using metaphors and alternative approaches to communications in and about science. At any level of discourse, access to adequate shared or explicit metaphors facilitates meaningful communication. So important are they that a wide body of technical literature (such as *Women, Fire and Dangerous Things: What Categories Reveal about the Mind*, Lakoff 1987 and *Metaphor and Thought*, Ortony 1993), among others) goes far in stimulating conversation and thought on their applications.

I teach high school science. Specifically, I teach high school biology, chemistry, anatomy, and physiology, and, from time to time, advanced placement biology. In the past, I have also taught physics. I teach these classes with a deliberate awareness of the symbolic, metaphorical, analogic, or aphoristic approaches to communicating with my students about the topics. In the past, I have engaged my students in extensive self study of explicit and implicit metaphors that influence their school experiences. Postman's (1995) *The End of Education: Redefining the Value of School* contains an excellent introduction to this approach in the chapter "The Word Weavers/The World Makers." So, not only have I tried to engage students in the impact of metaphors on their lives (if we see them as seedlings to be nurtured, we treat them differently than if we see them as resources to be honed into a finished product), but I also try to give them ample opportunities to become aware of their own needs and applications of metaphors in their own understanding of the scientific topics they study.

These activities have led to assignments in which students make their applications of metaphors explicit to such subjects as atomic structure, cell anatomy and physiology, DNA transcription and translation, and various other topics. I also, from time to time, point out to them the limits of metaphorical descriptions and the pitfalls of sticking to a metaphor beyond its useful applications. This work has led to my involvement in more technical research studies of the applications of metaphor, such as in the work of Reese (2003).

I write all this by way of showing that the use of metaphors is not something that I enter into casually. I have given it explicit thought in preparation of materials and activities for my students and have paid attention to their engagement of the application of and study of metaphors over the years. I am always on the lookout for additional information about metaphors and more metaphors for them to apply. This collection of writings by John Cairns are among some of the more useful ones I have encountered.

Several years ago, when I was developing materials for my students to use in studying the concepts associated with "sustainability," I came across the works of Cairns. I was immediately taken by several aspects of his work. First, of course, was the extensive and elaborate scientific background that he has. His meaningful contributions to the field of ecology and associated areas, in his own research and his sponsorship of graduate students, are without question. Anyone interested in the extent of these contributions can examine his vitae at his web site (<http://www.johncairns.net>). I wanted to be sure my students were accessing a sound scientific foundation. However, his articulate way of expressing complex and complicated interdisciplinary concepts, often with a sharp wit and pointed voice, most drew my attention to his work, and, consequently, also drew the attention of my students. Several of them completed class "final projects" in which they analyzed some of Cairns' writing – responding to and critiquing his works as they applied to the topics being studied in the sustainability sessions of our study of ecology and environmental science. One student, who had presented intelligent disagreement with some of Cairns' views while in high school, upon engaging related material her first year at the University of Virginia, wrote to say she felt that the class, and his writings, had given her a good background with which to work.

Over the years, as I continued to read Cairns' works, I began to note how he had a consistent way with words, often taking complex topics and succinctly, clearly, and, sometimes, forcefully bringing home his point – even coming across at times as very bold and an in-your-face manner in his message. These writing characteristics point out to the considerate reader that the topics on which he writes, and the message that he sends, are increasingly of urgent and important concern. One writing skill is his ability to hone a fine point with a metaphor that immediately brings home the "meat" of his message, making the content and intent clearer and memorable. The writings in this collection are exemplars of concision and clarity. Almost all, even the briefest, cite references that have been synthesized into his comments.

So, in my classes, I explicitly use metaphors to illustrate and elucidate essential meanings associated with the topics. I incorporate explicit activities to give students opportunities to study the metaphors they use

and to create/play with their own. I try to show students how the metaphors that professionals and policy makers use impact how they are treated in their schooling. I refer them to, and sometimes require that they engage, materials that present complex and complicated issues and concepts using metaphorical applications. I have found Cairns' works particularly useful at times in addressing issues in environmental science.

To bring home the point, since I want my students to be able to hit the ground running and have the tools to overcome the barriers on the path to understanding and assimilating information, transforming it into food to nourish their growing minds in this garden of learning called school, his writings present a cornucopia of meaningfully prepared nutrients to help sate their hunger. His words will help them to see the elephant in the classroom and avoid creating an alien planet while they hone the skills and develop the tools to stop, or at least slow, the future eaters.

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PREFACE

The genesis of this e-book was an invitation to act as a Special Guest contributor for the E-Conference "Climate Change and You: Putting a Face on Global Warming" (EcoRes Forum Online Conference #3, October 19-29, 2009, www.eco-res.org). Special Guests were asked to make two postings before the beginning date of the conference and to make two postings each day thereafter. From my participation in previous e-conferences, I know that short postings are most effective. I began the writings using metaphors and later moved on to aphorisms. The title of this E-book comes from an earlier publication I had based on a metaphor.

The final impetus came via an e-mail from a teacher at a local high school, with whom I had worked some years ago. He was inquiring about any books in print on the use of metaphors in teaching. Consequently, this e-book has two goals: (1) to reach as many teachers and students as possible (free for downloading should aid in this goal) and (2) to add to the e-book after its first appearance with updates).

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