

Lesson 2: Exploring the Hidden Costs of “Better Living”

Understanding Goals:

In this lesson, students will:

- Learn how debates over the effects of plastics and new synthetic chemicals on workers’ health were connected to the growing consumer, public health, and environmental movements.
- Explore how the creation of new chemicals led to new knowledge and debates about how to regulate potentially harmful chemicals in the face of scientific uncertainty.

Lesson Overview:

This lesson investigates the rise of the synthetic chemical industry and explores debates over how new chemicals associated with the production of plastic affected human health. Activities help students make connections between the emergence of the debates over plastics and the broader environmental, public and consumer health movements. During the 1950s, as concern about the potentially harmful effects of new synthetic chemicals arose, the federal government began to consider measures for regulation. In the beginning portion of this lesson, students will explore testimony from the Chemicals in Food Products Hearings of 1950-51 and the Delaney Clause of 1958. Then they will learn about Rachel Carson’s *Silent Spring* and the backlash that the work received from the chemical industry. This lesson will help students gain a deeper understanding of historical debates about synthetic chemicals associated with the production of plastic.

Background Information:

This lesson demonstrates that concerns about the effects of chemicals on people and the environment preceded *Silent Spring*, but it also emphasizes that Carson’s work was extremely important for communicating scientific knowledge to a widespread audience. Students will explore debates from the 1950-51 Chemicals and Foods Hearings, learn about the Delaney Clause, and analyze *Silent Spring* and criticisms of Carson’s work.

Background on Chemicals and Foods Hearings of 1950-51

During the 1950s, a young representative from Queens, NY named James Delaney led a series of hearings concerning the potential harm of chemical additives in food and related food products, such as plastic wraps and containers. Testimony at the hearings came from a variety of individuals and organizations that were becoming concerned about the potential health effects of plastics on health. In this activity, students will analyze excerpts offered by different perspectives during the hearing. Working in the same small groups, students will examine the different ideas about the role of chemicals in American life and growing concerns about how they might affect health.

Background on the Delaney Clause:

The federal dialogue that began with the 1950-51 Chemicals and Foods Hearing eventually led to an amendment of the Federal Food, Drug and Cosmetic Act in 1958. The amendment created new regulatory policies for “food additives” and included the controversial Delaney Clause. The Delaney Clause prevented the Food and Drug Administration from approving the use of chemical additives to food that had been proven to cause cancer in humans or other animals. This included packaging material and food related-materials like can liners and plastic wrap. According to the 1958 amendment, the food products and packaging industry had to prove to the FDA that all food additives were safe. At that time, there were only a few chemicals in use that had been proven to cause cancer in animal studies, so sponsors of the measure did not think it would have a major impact.

Background on Silent Spring and its Critics:

Rachel Carson's *Silent Spring* played an especially important role in bringing widespread attention to some of the negative effects of chemicals on human and environmental health. When it was published in 1962, it became an instant bestseller. Carson clearly articulated a growing fear among scientists and activists that synthetic chemicals could have hazardous effects on human health and environmental systems. Because of this public awareness, chemical companies were increasingly put on the defensive. As activists, scientists, and the federal government became increasingly concerned about the potential long-term harm that these new chemicals might inflict on people and the environment, the chemical industry enacted a massive public relations campaign to address these concerns and to undermine arguments made by chemical critics. For more background on *Silent Spring*, Rachel Carson, and the debates that her work inspired, see the links listed in the additional resources section of this lesson.

Activity 2.1: Examining the Chemicals in Foods Debates of 1950-51

Depending on the degree of students' familiarity with the topic, the teacher should talk a bit about the rise of public concern about occupational and environmental health. Links to background information on the topic are listed at the end of this lesson plan. The teacher should explain that the same chemical companies who were producing new plastic food wraps and containers were also producing other new consumer goods, such as pesticides, fertilizers, and fungicides. Consumer health and environmental activists became increasingly concerned about the effects that these new chemicals—used for both agricultural and non-agricultural purposes—would have on human and ecological health.

Have the class read Delaney's 1951 report on the use of chemicals in food products. Then have them read the meeting minutes of the Plastics Committee of the Manufacturing Chemists Association, Inc. regarding the Chemicals in Foods hearings. Ask the class the following questions:

1. Why does Delaney think that the investigation into the use of chemicals in food products is necessary? What is the problem? What evidence does he use to outline this problem?
2. Who does Delaney think should be responsible for regulating the use of chemicals in food products? Why does he think that?
3. Who does the Plastics Committee of the Manufacturing Chemists Association think should be responsible for regulation? Why do they think that?
4. If you were alive in the 1950s, who do you think you would agree with? Why?

If there is time, the class can hold a debate simulating the 1950-51 Chemicals in Foods hearings. The teacher can split the class in half and have each group prepare an argument for who should be in charge of regulating chemicals in food products (government or industry). Students should base their arguments on documents in this lesson as well as from lesson one. In the debate, each group will have two minutes to present their argument, including evidence to support their argument based on the testimony they read. They should not read actual testimony verbatim, but rather, summarize the essence of the argument and articulate it in their own words. As each group presents, members of other group should take notes. These notes will be used in the open session. After each group has made their opening statement, acting as moderator, the teacher will open the floor to questions, comments, and rebuttals. Encourage the students to make connections back to themes and ideas from lesson 1 (i.e. the cultural, economic, and political significance of plastic in postwar American culture). The teacher should make sure that each group gets equal time to pose and respond to questions.

After the open session, the teacher should summarize by stating that in accordance with the historical record, the 1951 Chemicals in Foods investigation came to a close without definitive regulatory action for the future. The teacher should note that Delaney's report raised important questions and concerns and the federal government would be taking the matter into further consideration. Furthermore, the re-enactment helps demonstrate that concerns about chemicals and the environment began before the official 1970s environmental legislation and the widespread public outcry caused by Rachel Carson's *Silent Spring*.

Documents for Activity 2.1:

- A. James J. Delaney, *et al.* "Investigation of the Use of Chemicals in Food Products," January 3, 1951, Report No. 3254 to the U.S. House of Representatives, 81st Congress, 2nd Session.
- B. Manufacturing Chemists Association, Inc, Plastics Committee, Meeting minutes, November 15, 1951. Students should read the section on "Chemicals in Foods," pp1-2.

Activity 2.2: Understanding and Interpreting the Delaney Clause

As a class, have students read the 1958 Delaney Clause out loud.

"No additive shall be deemed to be safe if it is found to induce cancer when ingested by man or animal, or if it is found, after tests which are appropriate for the evaluation of the safety of food additives, to induce cancer in man or animal."

- The Delaney Clause, from the 1958 Food Additives Amendment (Section 409) to the Federal Food, Drug, and Cosmetic Act

Large Group Discussion:

Ask students to explain, in their own words, what they think the provision means. What are some of its strengths? What are some of its weaknesses? What measures would be required to implement the amendment? Can they think of any examples of regulation that might have been the result of the Clause or related a related principle?

Although there were several loopholes in the Delaney Clause (see Richard Merrill, 1997 and the Congressional Research Service's report by clicking on the links provided below), its passage indicated that the consumer health movement had begun to gain traction. People were becoming concerned about the abundance of synthetic chemicals in their food, water, and everyday products. It is important to emphasize to students that although many people think *Silent Spring* was the book that started the environmental movement by catalyzing public awareness about the effects of chemicals on human and ecological health, prior to its publication, several scientists and activists had also been concerned about the issue.

Activity 2.3: Putting Concerns about Plastics in Historic Context: *Silent Spring* and Carson's Critics

Students should come to class having read the first three chapters of *Silent Spring*. The teacher should explain a bit about the background and significance of the book.

As a class, review and discuss students' responses to the homework questions about *Silent Spring*:

1. What is the purpose of the book?
2. Why was Carson so concerned about ways in which humans have changed the environment since WWII?

3. Carson argues that Americans have a right not to be exposed to toxic chemicals. Do you agree or disagree? Why and under what conditions?
4. In your mind, whose duty is it to protect people from toxic chemicals? Why?
5. How do you think the chemical industry received the arguments Carson makes in *Silent Spring*? Is *Silent Spring* a primary source or a secondary source? Why do you think so? Explain your answer.

After students discuss the book and explore some of their own reflections, the teacher should present them with some of the criticism of the book. Pass out copies of William Darby's review of *Silent Spring* from *Chemical & Engineering News* (1962) and have students read the review.

Document for Activity 2.3:

- Darby, William J. 1962. "Silence, Miss Carson." *Chem. & Eng. News* (Oct. 1): 62-63.

In small groups, have students respond to the following questions:

1. What is Darby's main criticism of *Silent Spring*?
2. How does he think Carson "confuse the information" and bias the book with her opinions (p2)?
3. Darby makes a distinction between "occupational and residue hazards"—the former are isolated effects of chemicals on workers in manufacturing plants, the latter refers to residues of chemicals on foods and the environment. He claims that while there had been some trouble with health hazards at the workplace, in the broader environment there had been no examples of "injury resulting to man from these residues (p3)." What do you think about this claim?
4. How do Carson's and Darby's ideas about the relationships between human and the environment differ? How are they similar?

Activity 2.4: Homework Assignment:

Read *Deceit and Denial*, Chapter 5-7, pp. 139-234.

The following quotations come from this reading. Think carefully about their meaning and context and respond to the following questions. Responses for both questions need not exceed three pages.

1. On page 210, Markowitz and Rosner argue that "The vinyl chloride crisis substantially blurred the line between occupational and environmental dangers." What does this statement mean? What evidence do the authors use to justify this argument? What are its implications?
2. On page 216, Andrea Hricko, a staff assistant working for Wolfe Sidney's Health Research Group, was quoted as saying, "Unfortunately, [epidemiological proof] is always retrospective in nature and can only be accumulated after the harmful effects have already manifested themselves." She believed that all new chemicals needed to be tested before they were widely produced and distributed. Do you agree with this argument? Why or why not? What would be the benefits (and to whom) of thoroughly testing all new synthetic chemicals before their production and distribution? What would be the drawbacks of such a policy?

Reinforcement Activity: Exploring the Plastics Industry's Response to Environmental Concern

In the early 1970s, the plastic industry faced growing criticism from scientists, activists, and increasingly, federal legislators. One representative of the industry complained that he hated to go to cocktail parties because he always seemed to get into a "big environmental argument with

somebody's wife (See the transcript of Harding's 1971 talk, p9)." In order to ameliorate concerns about plastics' effect on human and environmental health, they launched a "grass roots" program. Plastic advocated a "persuade your neighbor" campaign where individuals would spread positive information about the plastic industry as being "part of the solution—not pollution."

In this activity, half of the class will analyze documents produced by the plastics industry that aimed to address the public's growing concerns about environmental pollution. Students will analyze two different documents and answer the following questions about each:

1. Who is the author of this document? Who is the intended audience?
2. What are the main problems that each author addresses? How does the author talk about these problems?
3. What actions do the authors advocate for as means to ease public concerns about plastic? Be specific.
4. Do you think these actions would be effective? Why or why not? What are the strengths of these actions? What are their weaknesses?

Documents for Reinforcement Activity:

- A. Ralph L. Harding, Jr., Executive President of the Society of the Plastics Industry, "Plastics Public Relations and the Environment," Paper delivered before the Chemical Public Relations Association, March 9, 1971.
- B. "Where do we stand—ecologically?" *Plastics World*, June 1971.

Additional Resources:

1. The U.S. Food and Drug Administration, "The Story Of The Laws Behind The Labels," <http://www.cfsan.fda.gov/~lrd/history1.html>. The agency explains the history of federal regulation of food, drugs, and food additives.
2. Richard Merrill, "Food Safety Regulation: Reforming the Delaney Clause," *Annual Review of Public Health*, 1997, 18:313-40.
3. Donna U. Vogt, "The Delaney Clause Effects on Pesticide Policy," Congressional Research Service, <http://www.ncseonline.org/nle/crsreports/pesticides/pest-1.cfm>

On Rachel Carson and *Silent Spring*:

- <http://www.rachelcarson.org/>
http://www.eoearth.org/article/Rachel_Carson's_environmental_ethics
<http://www.chatham.edu/RCI/>
<http://www.nationalhumanitiescenter.org/tserve/nattrans/ntwilderness/essays/carson.htm>