

Talking About Recycled Water—and Stigmatizing It

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Eugene, Oregon: Decision Research
Decision Research Report No.15-01
March, 2009

Introduction: What Is Stigma?

The word “stigma” was used by the ancient Greeks to refer to a mark placed on an individual to signify infamy or disgrace—to show, for example, that the bearer was a slave or a criminal. As used today, the word denotes someone “marked” as deviant, flawed, limited, spoiled, or generally undesirable in the view of some observer. When the stigmatizing characteristic is observed, the person is denigrated or avoided. Prime targets for stigmatization are members of minority groups, the aged, homosexuals, drug addicts, alcoholics, and persons afflicted with physical deformities or mental disabilities.

In the modern world, stigma has been generalized to products, places, and technologies that are perceived to be unduly dangerous or aesthetically displeasing.

The aim of this paper is to introduce water-industry professionals to the concept of stigma and show how their language and communications may contribute to the stigmatization of recycled water facilities and products.

Nuclear Power: A Prime Example of Technological Stigma

A half-century ago nuclear-power technology had a remarkably promising future. It was expected to replace coal as the principal source of energy in the United States. Dozens of nuclear power plants were constructed, eventually totaling more than 100. But, as the number of reactors proliferated, citizens began to voice opposition to the technology, based upon concerns about safety, despite the fact that no serious accidents had occurred. Public resistance led to siting challenges, construction delays, and accelerating costs even before the 1979 accident at Three Mile Island. After the accident, a partial core-melt in which no one was injured and little radiation was released, further development of the technology came to a halt. Today nuclear power provides less than 20% of the nation’s electricity, and that percentage is decreasing as aging reactors are shut down and not replaced—no new reactors have been ordered by utilities since the 1970s (Whitfield, Rosa, Dan, & Dietz, 2009).

In 1982, the Department of Energy launched a program to site and construct an underground repository to store the wastes from the reactors, which are currently stored at the reactor sites. Nuclear power experts believed that developing a safe repository was well within their capabilities: Alvin Weinberg asserted that “Nuclear wastes can be sequestered with essentially no chance of any member of the public receiving a non-stochastic dose of radiation (Weinberg, 1989). Bernard Cohen observed that there was general agreement among scientists that radioactive waste disposal was a rather trivial technical problem (Cohen, 1983); Harold Lewis said that the risk is “as negligible as it is possible to imagine” (Lewis, 1990). Billions of dollars were spent to investigate the suitability of a repository site at Yucca Mountain, Nevada, which was eventually certified as safe and suitable. Nevertheless, almost 30 years after the start of this effort, there is no repository in sight, due to unrelenting public opposition.

Nuclear power and nuclear waste have become stigmatized technologies. But they are not the only high-profile victims of what has come to be known as *technological stigma* (Gregory,

Flynn, & Slovic, 1995). Many industrial and agricultural chemicals are stigmatized, as are some forms of biotechnology. Stigma plays out in opposition to many valuable products and technologies, at great cost to industry and society.

There is a potential for recycled water technology to become stigmatized, with the result that public opposition will block development of highly beneficial projects. It is important that water-industry professionals understand the nature of technological stigma lest they unwittingly fuel opposition to recycling through the use of stigmatizing language and imagery.

How Does Stigma Work?

The emergence of technological stigma imposes important new demands on societal decision makers and managers. This form of stigma expresses the modern world's concerns about human health and ecological risks—concerns that are amplified by the vast power of communications media to “spread the word” about risks. Since the industrial revolution, technological and industrial activities have often carried the potential for harm to people or the environment. What has changed in recent years is how technological risk is evaluated by the public. Many conditions are known to be hazardous; stigma refers to something that is to be shunned or avoided not just because it is dangerous but because it overturns or destroys a positive condition, signaling that what was or should be something good is now marked as blemished or tainted. The impetus for stigmatization is often some critical event, accident, or report of a hazardous condition. This initial event sends a strong signal of abnormal risk.

Stigma is characterized by strong, visceral emotions such as fear and disgust (Rozin, Millman, & Nemeroff, 1986). But cognitive scientists have learned that stigma is produced by much subtler feelings as well, known as *affect*. Affect has been characterized as “a faint whisper of emotion” (Slovic & Peters, 2006). Specifically, affect is defined as the specific quality of “goodness” or “badness” (a) experienced as a feeling state (with or without consciousness) and (b) demarcating a positive or negative quality of a stimulus. The term *the affect heuristic* has been used to characterize reliance on such feelings (Slovic, Finucane, Peters, & MacGregor, 2002); the experienced feelings are used as information to guide judgment and decision making (Schwarz & Clore, 1988).

Affect plays a central role in what are known as dual-process theories of thinking. According to these theories, people apprehend reality in two fundamentally different ways, one labeled intuitive, automatic, natural, narrative, and experiential, and the other analytical and deliberative (see, e.g., Epstein, 1994). One of the main characteristics of the intuitive, experiential system is its affective basis. Although analysis is certainly important in some decision-making circumstances, reliance on affect is generally a quicker, easier, and more efficient way to navigate in a complex, uncertain, and sometimes dangerous world. Many theorists have given affect a direct and primary role in motivating behavior. Pleasant feelings motivate actions that people anticipate will reproduce those feelings. Unpleasant feelings motivate actions that people anticipate will avoid those feelings.

When a person receives information the experiential system searches its memory banks for related materials, such as images and associations, and their emotional and affective signs. Visual imagery is, of course, very powerful. Studies have found that the image of the mushroom cloud emanating from the explosion of a nuclear bomb is still very much salient today, more than a half-century later. When people were asked in 1993 for the first thought or association that came to their mind when they heard the words “nuclear power,” almost 13% of respondents produced war or bomb-related associations (Slovic, Flynn, Mertz, Poumadère, and Mays, 2000).

Many persons asked to free-associate to the word “Nevada” give nuclear images, presumably because of the atomic weapons testing that has taken place there. Those who carry such quick, top-of-the-head associations in their minds express relatively negative reactions to living or vacationing in Nevada (Slovic, 1990).

Words, of course, are important forms of imagery and it has been known since the middle of the last century that the dominant dimension of meaning in a word is its affective quality (Osgood, Suci, & Tannenbaum, 1957). Notice how quickly you sense the negative feeling inherent in the word below.

HATE

Sensing the negative feeling is an important part of understanding the meaning of this word. Note also how your positive and negative feelings are automatically engaged as you scan the following list of words:

Joy

Carcinogen

Freedom

Marketers of consumer products have long been aware of the powerful influence of affectively-laden words and images on consumer behavior. Many packages containing food products carry little blurbs such as “New,” “Natural,” “Improved,” or “Fat Free.” These are “affective tags” that associate positive feelings (the opposite of stigma) with the products and increase the likelihood they will be purchased. Purveyors of bottled water portray images of nature, such as clean mountain streams or waterfalls in their labels, which bear attractive names such as Crystal Geysir, Evian, Keepsake, Deer Park, Ice Mountain, Poland Spring, Mt. Olympus, and so on.

Finally, to bring this theoretical discussion closer to home, feel the negativity in the following words and phrases commonly encountered in discussions about water recycling:

Endocrine-disrupting

Contaminant

Sewage

Toilet-to-tap

Yuck factor

Wastewater

Implications for the Water Industry

It is not surprising that opponents of water recycling are aware of the stigmatizing effects of language and use terms such as “toilet-to-tap” effectively to create fear, disgust, and generalized negative affect and to preclude informed debate and decision making.

Public consultation processes typically assume that it is possible to have rational discourse and reasoned debate on a topic even after it has been stigmatized. We assume the public has background knowledge of water and wastewater management. We often use emotive, negative terms and then hold to the hope that the community will be able to exercise reasoned judgment. This approach fails to recognize the importance of context and emotions in guiding judgments and decisions.

A striking example of the power of words comes from a study by Sinaceur, Heath, and Cole (2005), who used a novel context—the Mad Cow virus in France—to demonstrate how emotions alter choice. A field study showed that individuals reduced beef consumption in months after many newspaper articles featured the emotional label “Mad Cow,” but beef consumption was unaffected after articles featured scientific labels for the same disease. A lab study showed that the Mad Cow label induces people to make choices based solely on emotional reactions, whereas scientific labels induce people to consider their own probability judgments. Although the Mad Cow label produces less rational behavior than scientific labels, it was two to four times more common in the media.

In summary, when stigmatizing language is employed by project opponents to magnify fears it may be more powerful than countervailing efforts to emphasize facts. What is surprising is that the stigmatizing and confusing language frequently comes from the water industry itself.

Industry Cultural Change Is Required to Encourage Accurate, Simple, and Easily Understood Communication

We believe that it is important to foster cultural change within the industry. Water professionals must consider more carefully their choice of words and the impact they have on the public. They themselves must better understand the broader context of water use and reuse.

Bruce Durham of EUREAU offered the following observation in the April 2008 *Water21* magazine of the International Water Association:

The central challenge is to build a culture for reuse. A more complex picture arises, with water quality gauged across a range of grades according to a variety of end users whereas it had previously been made suitable for potable consumption on the one hand or, as wastewater, treated to avoid pollution when returned to the river.

Implicit in this change of circumstance is the centrally important fact that the “clean water suppliers” and the “others” who treat “wastewater” can no longer remain at arms length; they have to accept that they are dealing with a single resource that cycles through a complex of quality phases, all of them interlinked. Failure on this score has been and remains a major obstacle to reuse and probably goes a long way to explaining why the concept is difficult for the regulators and wider public to understand and accept.

Engineering and science experts should not think of the public as “wrong” or “irrational” about water reuse. Rather, they must understand that the public is responding on the basis of their level of understanding, which is often low and inaccurate, due in large part to the inadequacy of the tools—words and images—available to explain these concepts appropriately.

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