

MOTIVATING HOMEOWNERS TO TEST AND MITIGATE FOR RADON

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ABSTRACT

After six years of efforts to motivate homeowners in the U.S. to test their homes for radon, only about 6% have done so. What are the reasons and what could we do better in the 1990s. One of the reasons for lack of homeowner response is that radon risks seem imaginary. Studies with the Myers-Briggs Type Indicator show that 70% of Americans prefer to rely on their five senses to warn them of danger and radon is not detectable by any of our senses. Also, there are no bodies. No one knows of anyone who has died of radon exposures in homes. A systems approach to understanding how radon risks are perceived shows that risk projections for the U.S. do not have meaning for individual homeowners. Radon risks are taken at the level of individual who simply want to know what is safe or unsafe.

Homeowners have a natural resistance to being told what to do or not to do in the privacy of their own homes. Americans do not like to feel coerced, threatened, or frightened into taking any action, even for their own good. Warnings to test for radon may bring out the rebellious child in each of us that says internally, "I don't have to and you can't make me!" We not only resist advice but will often do exactly the opposite. A demon likes to come into communications intended to be helpful, such as helpful advice to homeowners about radon testing. When homeowners do not accept this helpful advice, the tendency has been to try to be more convincing. This has led to efforts to motivate homeowners by emotional shock appeal which identifies radon as the deadly intruder invading your neighborhood. When advice escalates into implications of threat the demon is at work. Homeowners hear the threat, become defensive, and actively or passively resist the advice. They automatically react to efforts to control their behavior and decide to submit or rebel in the same ways that they did as children when confronted with demands of parents.

Sales and marketing strategists would recommend a different approach. People are more likely to respond positively to your message when you appeal to their good feelings rather than bad feelings or fears. Most people decide according to what they feel good about. We could more strongly emphasize the "good news" that radon is easy to measure and easy to mitigate. In addition, radon removal systems could also improve overall indoor air quality by reducing molds, fungi, dampness, and other gases drawn into homes by negative air pressure along with radon. Homeowners could be better motivated by knowing all the benefits that may result from radon mitigation. Furthermore, they might better hear these benefits if presented with humor. Perhaps we need a lovable cartoon character called the "Radon Man."

INTRODUCTION

As of mid-1991, the Environmental Protection Agency indicates that about 80% of American homeowners have heard about radon. And yet, only about 6% of the 80 million homes in the United States have been tested. Despite more than five years of efforts to motivate testing by the EPA, other Federal and state agencies, organizations such as the American Lung Association, and the radon industry, 75 million homes remain untested. How come? What can we do to better motivate radon testing and mitigation today? Can we expect better public response in the 1990s. The following discussion will offer some encouraging insights and answers to these questions.

THE PUBLIC'S DILEMMA

For many years the news media has publicized EPA's assessment of radon health risk as 20,000 lung cancer deaths a year in the United States. EPA's risk estimates have ranged from as low as 5,000 to as high as 43,000. Some scientists argue that the real risk from radon exposures in homes accounts for only a few hundred lung cancer deaths a year. Whatever risk numbers the public may hear, however, homeowners are faced with a difficult dilemma. Namely, there are *"no bodies."* No one knows of anyone who has died from exposures to radon in homes. There are no news headlines proclaiming that a famous person has died of lung cancer due to radon exposures. If 20,000 people a year are dying from lung cancer due to radon exposures, where are they?

Martin pointed out at the 1990 AARST conference that AIDS is also claiming about 20,000 lives a year in the U.S. (Martin 1990). Furthermore, she noted that AIDS programs are getting much more funding than radon programs and raised questions about the differences. I believe the major difference has to do with public perceptions of risk. For AIDS, there are real people dying, real medical expenses, and real grieving families. Also, everyone knows of numerous people who have died of AIDS, or are diagnosed with AIDS. Therefore AIDS is real, immediate, and threatening. Radon does not have these aspects of reality, even though the risk numbers are about the same.

RADON RISKS ARE IMAGINARY

Since radon cannot be detected by our sense of smell or any of our other senses, we have no direct way of knowing that it is in our homes. Consequently, homeowners have to accept on faith that radon is in their homes because EPA or others say so. Of course, those who have tested their homes for radon have a quantitative verification of the presence of radon. When they get their radon test results, however, they are immediately confronted with the question of what those results mean.

Most homeowners have adopted the EPA action guideline of 4 pCi/L as a limit of safety. They commonly conclude that levels below 4 are safe and levels above 4 are unsafe. Most homeowners do not know how to interpret EPA's risk estimates. They do not know what a risk of 4 in a hundred or a thousand means. They want to

know if their house is safe, or if radon will have any effect on them or their families. In other words, most people want to know whether or not they will be affected directly and individually. Unfortunately, the risk projections of scientists do not answer the questions for individuals. Such risk projections sound abstract and theoretical. They do not seem real and specific. Theoretical risk estimates do not seem like a very solid basis for spending money on radon testing or mitigation, especially for mitigation where homeowners may envision spending thousands of dollars.

SENSING VS INTUITIVE DATA GATHERING

We can appreciate some of the difficulties in understanding abstract risk calculations by insights from the Myers-Briggs Type Indicator (MBTI). This instrument measures preferences for gathering information, making decisions, and relating to other people based on concepts developed in the early 1900's by the eminent Swiss psychologist, Dr. Carl Jung. On the basis of several million profiles, the MBTI shows that 70% of Americans prefer to gather data with their five senses (Myers and McCaulley 1985). This means they want information that is specific, detailed, measurable, concrete, factual, practical and verifiable in their own experience. For most people the real world is what they can see, touch, taste, smell, or hear. Since radon, or radiation in general, is not tangible to any of their senses, then it is not part of their sense of reality, i.e. it is imaginary.

Intuitives make up the other 30% of the population. They prefer to gather information and see data in terms of patterns, relationships, possibilities, models, and concepts. Therefore, they tend to have less difficulty with the "concept" of radiation. They are more comfortable with abstract theories and models. The majority of scientists prefer intuitive data gathering (Johnson and Petcovic 1990). Who else would conceive of estimating radon risks to homeowners by extrapolating the lung cancer incidence of uranium miners on the basis of the linear nonthreshold radon dose/risk response model. These are the people that believe they are responsive to homeowners questions about safe levels of radon by telling them that at 4 pCi/L their risk is 4 in 100 or 4 in 1000 depending on whether they are smokers.

A SYSTEMS APPROACH TO UNDERSTANDING RADON RISKS

Radon risks are estimated at the population level, but are interpreted at the level of individuals. This approach to understanding radon health risks was first described by Larry Petcovic (Johnson, et al 1991). He points out that individual listeners will understand a given message differently, even when they hear the same words, because of differences in perceived social roles or levels in their social system.

For example, social roles or levels in a "*family social system*" would begin at the level of "self", then self and spouse, immediate family, relatives, community, county, state, nation, and finally, all countries or all people on earth. In this social system, all levels above "self" are abstractions. An individual is real, but when two or more people call themselves a family, that is an abstraction. In this system, radon health risks are estimated at the state or national level, hence the often quoted

risk of 20,000 lung cancer deaths a year in the U.S. from radon exposures in homes. However, radon risks are taken by individuals, not by the country. Unfortunately, even the best estimate of theoretical risk for the nation does not answer the question about the safety or effects of radon on a child in your home.

The radon health risk to the U.S. population cannot be understood in terms of the risk to one person multiplied times the population of the country. Also, it is an abstraction to take the health risk of the U.S. and divide by the population to find the individual risk. When dealing with radon in homes, risk decisions are made at the "self" or individual level. As an individual, you are the sole expert on your thoughts, feelings, experiences, perceptions, realities, and the preservation of that reality. At the self level, reality is whatever you want it to be. You cannot deny anyone their right to see the world as they have experienced it. But, how does anyone experience radon or the risk of radon?

Risk probabilities have little, if any, meaning at the level of self. At this level people will decide according to whether they believe that they will get cancer or will not get cancer. This is not a 50/50 probability. It is all one way or the other, i.e. a probability of one. Therefore, risk projections of 1 in a 100, 1000, 10,000, etc. have no meaning. Even if the risk is one over the universe, the individual has to decide if they will suffer that risk. Generally, people will decide that risk statistics do not apply to them directly. The challenge for radon programs is to get the public to believe that radon risks do apply to them as individuals. Systems insights can help with credibility for motivating homeowners, by showing the need to communicate at the level of individuals.

PUBLIC RESPONSE TO RADON PROGRAMS

The radon industry is on a downward slide because of diminishing calls for radon testing and abatement services across the U.S. The greatest challenge to a national program for radon abatement is public apathy. Most of the public is simply not responding to EPA recommendations to test their homes for radon. There are many reasons for this lack of public response, but basically among all the demands of daily living, radon does not rank very high in importance (Johnson 1991).

Some of the reasons for not testing include:

1. Lack of information. Many homeowners still have not gotten the radon message.
2. Some homeowners do not want to know about risks affecting the sanctity of their homes.
3. Lack of understanding. Many homeowners have heard about radon, but do not understand what it is, or what the risk may be.
4. Many homeowners believe they are in areas where radon is not a problem; and therefore, it is not necessary for them to test for radon.
5. Radon is not detectable by our five senses and is therefore not an obvious threat in homes. Out of sight means out of mind.
6. Homeowners have concerns about validity of radon measurements. They wonder if they can rely on measurements done by mail order.

7. Homeowners have concerns about mitigation, about the costs, about the necessity, about the effectiveness. They would rather not do mitigation than risk being ripped off.
8. Many homeowners have heard about debates on radon health risks. They conclude that if the experts are uncertain, then radon may not be as much of a problem as previously stated.
9. Stubbornness - many homeowners do not like the government (or anyone) telling them what to do, especially in their own homes.

Homeowners like to hear about lower estimates of radon health risks. This fits their perceptions of radon risks because they cannot see it or smell it and there is no obvious evidence of radon. So why worry about something unseen, when there are enough obvious problems with your house to worry about. Should we really wonder that homeowners are slow to spend money for something they can not see as a problem?

Homeowners are afraid of rip-offs. Everyone knows of scams in the construction and home repair trades. Isn't radon just another way to make a fast buck off unwary homeowners? This reaction may also be stimulated by appeals to people's fears as a tactic for motivating them to take action for radon testing.

RESISTANCE - THE AMERICAN WAY

Americans traditionally do not like the "hard" sell. We do not like to be "sold" anything. We especially do not like to feel coerced, threatened, or frightened into taking any action. We resist advice or recommendations that sound like a demand, even when its in our best interest. Words such as *"should, must, have to, and ought to,"* all lead to resistance. Such words do not sit well with Americans. How did the U.S. respond to threats of coercion in the Middle East? No one is going to push us around.

How do Americans respond to warnings to stop smoking, stop drinking, lose weight, exercise, reduce cholesterol, drive 55, buckle up, and wear a safety helmet? Before you answer, think about how many of these admonitions you follow, routinely. Notice in addition, that the warning to, "Test your home for radon," could also be added to the list of warnings bombarding us every day.

Inside each of us is a rebellious child. Cornan-Selby (1991) says we may look like adults on the outside, we may even exhibit social manners. But, on the inside of each of us is a rebellious child that never got past the terrible two's. When the average American is given a warning, such as "Test for radon," their internal response is,

"I don't have to and you can't make me!"

We not only resist demands, but will often do exactly the opposite. As Americans we are determined to "do our own thing." If the speed limit is 55, we will drive 65. When cars makers installed seat belt warning chimes, we figured out how to disconnect them so we could avoid wearing the seat belt. The surest way to

get people to touch something is to put up a sign saying, "Do not touch."

Do we resist admonitions for our safety because we do not care for our safety? Of course not! But, we want to decide safety issues for ourselves, in our own good time, in our own way, and when we feel like it. This is especially true for radon in homes where, in addition, the risks are not evident and the cure may be very expensive. Homeowners often believe that radon mitigation may cost thousands of dollars. For these reasons, warnings about radon may not be well received.

A DEMON IN OUR COMMUNICATIONS

Morgan says that a secret demon monitors our communications looking for opportunities to create conflict (Johnson, et al 1991). In particular, this demon likes communications intended to be helpful, such as helpful advice to homeowners about radon testing and mitigation. The goal of helpful advice to homeowners is to convince or persuade them to an action (change their behavior) in a way that would be better for them, namely to test their homes for radon. After five years of trying to get homeowners to test for radon, EPA now knows that it's best efforts to be helpful are not always accepted. So what has EPA done? Out of genuine concerns for homeowners, they have attempted to be more convincing by emotional shock appeals. This is where the demon enters. When well intended efforts to persuade for the good of others are not accepted, then persuasion gradually transforms into subtle, at first, and then increasingly direct demands backed up by implications of threat.

Where does the demon come from and how does it work? Perhaps, the following familiar family scene will illustrate. Picture yourself at the dinner table and notice that your five year old daughter is not eating her green beans. You try to tell her that beans are nutritious and healthful, and it would be good for her to eat them. But, she decides that she does not like the taste of green beans and will not touch them. As a concerned parent, you now summon all your resources as a debater and attempt to convince your daughter that green beans are good and she would like them if she tried them. She refuses. You then try ordering her to eat the beans, and still she refuses. After much time and many words later, you finally say in exasperation, "You will not get down from the table until you eat your green beans!"

Two hours later, your daughter is still at the table and has won the debating contest. What happened in this scenario? Initially, you simply wanted you daughter to eat her green beans for her health, as a good nurturing parent. But your nurturing appeals escalated into demands and finally a threat. The demon was at work.

WHERE DOES IT ALL START?

Parents basically want to be helpful and nurturing. Parents want their children to do those things which are good for them and to avoid things which may be bad. However, since children (and American homeowners) have minds of their own, they occasionally (or often) decide they do not want to conform to parent's expectations.

A contest of wills follows. At which point, the child can either submit or rebel. If the child continues to rebel, then the demon slowly (or quickly) transforms the nurturing appeal of the parents into demands and finally threats. The tool used by the demon to accomplish this transformation is "anxiety" on the part of the parents. This is a form of fear.

Most well educated people, technical professionals, and managers are reluctant to admit that they have fears. But, fears have many faces and show up in unexpected ways. People are not usually aware of the intensity or even the diversity of their own fears. Many fears are by-products of childhood traumas, long since forgotten, but still present and influencing our behavior and reactions today.

Anxiety may be vague or diffuse and simply experienced as a general uneasy feeling. Behind the anxiety, however, is a fear accompanied by mental images. These images may be quite vivid or they may be faded from passage of time. Usually, you are not even aware that a particular image is playing on the video screen of your mind. The images come so automatically that they seem normal. Because our images and our corresponding reactions come so naturally for us, we tend to think, "Doesn't everyone react that way?"

An experienced counselor could help you track back through events of your life to identify the origins of particular fears or the images behind those fears. Some people find it difficult to accept that decisions made today may result from childhood events. However, the psychological sciences have long known about such phenomena.

What images could the demon use to get you to the point of threatening punishment for your rebellious child? Some possibilities include:

1. You see your control over your child weakening.
2. You see your authority being directly challenged.
3. You see yourself being blamed for failing as a parent.
4. You see your child not showing appreciation and not being appreciative in other areas.

While such images, thoughts, or feelings may run through your mind when you feel like punishing your child, the chances are they are out of your awareness. More likely what is on your mind is concern for a child who is misbehaving in ways that may be harmful to them (or to you) and you feel responsible to correct that behavior. After all, you are only trying to help. Why can't they be more understanding and cooperative?

WHAT ABOUT THE CHILD?

When the child perceives threat, the simple nurturing process has broken down and the child feels and believes that she needs to protect herself from the invasion of her person. If she gives in, she feels like she will lose herself or her identity. She fears being taken over by another, so she is naturally inclined to react. In the process, she is developing images based on this experience.

This dinner table scene, or others of similar nature, leave a mark on persons forever. Later in life, when they are confronted with a request with which they do not wish to comply, or which may appear *"threatening"* to them, then they will react in order to preserve their identity. The request, advice, or warning, may be quite reasonable, and may even be in harmony with their best interests, but when filtered through their past experiences (and images), they will automatically react. A simple request for homeowners, such as "Test your home for radon," out of their awareness, unleashes the demon in their minds that takes them immediately back to the early scene at the dinner table. They remember that a parent was forcing them to do something that they did not want to do and which made no sense in their lives at that time.

WHO IS IN CONTROL?

When you review the dinner table scene, by hindsight, it seems obvious that the parents were acting out of fear (or concerns) that led to anxiety and threat. The parent and child were engaged in a contest of wills. For the parent it is crucial to win, otherwise your parenting skills may be called into question, at least in your own mind, if not by family and friends. The child feels an equal need to win for survival. Their alternative is to give up and submit, and in the process lose their identity. The child's natural coping reaction is defensiveness. After a number of such scenes, defensiveness becomes a normal coping practice and will forever be installed as an **"automatic reaction."** Whenever, the child (or later as an adult) feels or perceives that she is threatened, she will automatically recreate the early scenes and images in her mind and will react to them in exactly the same way. Children will more likely choose in their own best interests when threat is not a part of the communication.

PUBLIC REACTION TO RADON MESSAGES

In light of these insights into common "automatic reactions," how do you believe Americans will react to the message,

"Don't Let a Dangerous Intruder Invade Your Home." (EPA 1990)?

This was the title proposed for EPA's revised citizen's guide to radon in September 1990. The draft went on to say:

"There is an intruder invading your neighborhood. And unfortunately, locking the doors and windows in your home won't keep the intruder out. Or keep you and your family safe. You can't see this intruder. You can't smell it. You can't taste it. But this intruder is a problem in 1 out of every 5 homes. This intruder isn't human. It's a radioactive gas. The intruder's name is radon. And it can be deadly. Each year, it causes thousands of deaths. That's because when you breath it in, radon can cause lung cancer. In fact, the Environmental Protection Agency, the Centers for Disease Control, and the Surgeon General have warned that radon is the second leading cause of lung cancer in the United States today."

For many homeowners, and maybe even most, this message could sound like a sales pitch with elements of threat in the background. And how are we generally programmed to respond to threat? We react by becoming defensive and responding automatically with active or passive resistance! Those who prefer action will take initiatives, such as refuting the basis of EPA's warnings by claiming the risks are lower than EPA says. However, most Americans will take the road of passive resistance, which is to simply ignore the warnings about radon.

Is it possible that EPA with the best intentions and justification has chosen a mode of communication about radon to American homeowners that automatically produces apathy? While this question undoubtedly oversimplifies the issues, the publicly has clearly indicated, after five years of EPA's best efforts, a minimal response to radon warnings. This conclusion leads to the next question. What can EPA, or those in the radon industry, do differently for more effectively motivating homeowners to test and mitigate for radon?

APPEAL TO GOOD FEELINGS RATHER THAN BAD

Since Americans do not respond positively to warnings or attempts at persuasion that sound coercive with intimations of threat, what can be done? The answer is fundamental in most sales and marketing appeals today. Namely, you tell people what benefits they will receive and how good they will feel taking the action you recommend. You appeal to people's good feelings. You appeal to the sporting image of youth implied in driving an expensive sports car. You appeal to the fun and leaner body that will result from drinking light beer. You show people how good they will look by losing weight or wearing new clothes. All of these appeals are to positive images that people will feel good about. After all, do you choose a particular car because you have bad feelings about other cars? Do you choose a particular suit or dress because you have bad feelings about other choices. Most likely you make choices on the basis of good feelings.

Are people motivated more by the carrot or the stick? Which will more likely build resistance or lower resistance? How many people are really motivated by pushing on their fears? Most us do those things that we feel good about. We do those things that add to our esteem, that give us a sense of security, that enhance our image, that make us feel worthy, and that give us peace of mind. On the other hand, Americans do not like to be told what to do or not to do. In fact, we are inclined to respond to demands by doing the opposite. Demands and warnings often lead to automatic defensiveness. Motivation is more likely to succeed when our defenses are down. Our defenses are lowered by humor and good feelings.

THE GOOD NEWS AND BAD NEWS ABOUT RADON

Most everyone knows the bad news about radon, it causes lung cancer. EPA and the radon industry have been promoting radon as bad news for more than five years. Initially some people were motivated to do radon testing because of the publicized bad news in 1988 that radon kills 20,000 people a year in the U.S. However, the majority of Americans (over 90%) have not been motivated by the bad news of radon.

For those who have mitigated their homes there is more bad news. They will never know if they have reduced their lung cancer risk by radon mitigation. If no one in their family gets lung cancer, then they may have been in the 96 out of 100 that would not get lung cancer anyway. If they do get lung cancer, there will be no way to prove that it was caused by radon. So, what is the good news?

"The good news about radon is that it is easy to measure and easy to mitigate."

There are several simple, reliable, and inexpensive ways to measure radon in homes. Likewise, radon mitigation is not very expensive, especially compared with the costs of other routine home maintenance or improvements, such as installing new roofing. Homeowners can also feel good about doing something to improve their health, reduce their risks, improve the value of their home, and because they gain peace of mind.

MORE GOOD NEWS

Mike Dietz, who has mitigated nearly 2000 homes and other buildings, presents even more good news to his clients (Dietz 1991). Mike points out that radon is drawn into structures by negative air pressure differentials. As radon is drawn in so are other soil gases as well as molds, fungi, dampness, and chemical gases that most people do not even know about. Some of these gases may include sewer and septic gases, gases from pesticides, lawn and garden products, gases from termiticides, or methane and other gases from organic decomposition of buried materials.

With the focus on radon mitigation to reduce risks of lung cancer, most people do not realize the other potential benefits. Sub-slab ventilation could also reduce allergies and other respiratory ailments by reducing molds, fungi, and various soil gases, as well as reducing odors and chemical smells. Mike notes that the risks from indoor air pollutants, other than radon, have not been completely investigated, therefore, we do not know the dollar value or specific benefits that may occur. However, it seems very reasonable to expect a significant improvement on indoor air quality related to removal of other gases that are drawn in with radon. Improved air quality could lead to better health and lower medical expenses. Mike mentions that homeowners often report that their dehumidifiers work much less after sub-slab ventilation due to reduced dampness in the house.

To motivate homeowners we could be telling them about the other benefits that could result from installation of systems designed to control the entry of radon gas. Mike says he and other radon mitigators have installed numerous radon mitigation systems in houses where the only complaint was about allergies, odors, or chemical smells. Furthermore, these homeowners are happy with the benefits gained without regard to radon.

USE HUMOR TO LOWER DEFENSES

The most memorable ads or commercials often are the ones that use humor to convey their message. People like to laugh. Laughter is the product of good feelings. Cartoons or other lovable characters are often used because people are more inclined to notice what is entertaining or amusing as well as informative. People like communications that are fun. After all, much of what we see on TV is bad news and most people have had enough. Most people will watch something creative and entertaining over something heavy and threatening. Imagine how a radon message would sound from Kermit the Frog, Miss Piggy, or Big Bird. Perhaps we need a cartoon character called the "Radon Man."

CONCLUSIONS

Homeowners hear about radon in homes as a terrible risk but their are no bodies or other evidence beyond scientific estimates. Homeowners find it hard to get concerned for risks that seem imaginary, especially in comparison with so many other risks that are real in their experience, such as AIDS, automobile accidents, or injuries in the home. How can homeowners justify radon mitigation expenses when their is no evidence of risk that they can see, since no one knows of anyone who has died from radon exposures in homes. Data from the Myers-Briggs Type Indicator show that 70% of Americans rely on information available to their five senses for assessing risk in the world about them.

A systems approach to understanding radon risks shows that while risks are estimated for the population, they are interpreted at the level of individuals. A risk projection of 20,000 lung cancer deaths a year is an abstraction that does not help individuals with personal risk choices. Neither do estimates of individual risks probabilities, such as 4 in 100. People want to know whether or not radon will affect them or their families directly. Is a given level of radon safe or unsafe? Systems insights show that radon risks need to be understood at the individual level. This is the level where our radon communications will be most effective.

The public has many reasons for not responding to radon warnings. Perhaps one of the reasons has to do with the ways in which radon risks are communicated. Americans generally do not like to be told what to do or not do, especially in the sanctity and privacy of their own homes. We resist "hard sell" tactics that sound coercive, threatening, or attempt to frighten us into action. When we hear the word "must" we are inclined to do the opposite. Inside each one of us is a child that says, "I don't have to and you can't make me!"

A demon is constantly looking for ways to create conflict in our communications, especially those that are intended to be most helpful. When our best efforts to help someone for their own good are not accepted, we naturally try harder to reduce our anxiety about failing in our responsibility. Further efforts to persuade may lead to increasingly direct demands and implications of threat. When EPA's initial efforts to simply inform the public about radon risks drew limited attention, they then resorted to emotional shock appeals to frighten homeowners into action. When efforts to be helpful escalate into demands and threats, the demon is at

work. The tool the demon uses is anxiety. Most people are not aware of the role of their anxieties or the images that trigger them. Often the images have to do with loss of power or authority, or fear of failure.

Even little children learn quickly how to react to threat. They choose either to submit or rebel for survival of their identity. These choices become a pattern for automatic reactions as adults when confronted with real or perceived threat. When Americans are confronted with threats or warnings, such as "Test your home for radon," they typically become defensive and resistant. This resistance may be active in terms of opposing EPA's radon programs, or passive, which is to simply ignore the warnings about radon.

Since Americans do not respond well to warnings and advice, perhaps they would be more easily persuaded with appeals to their good feelings. Most sales commercials take this approach. Could it be that ad agencies know something about public communications that we don't? Instead of trying to shock or frighten people into testing for radon, perhaps we should be focusing on the benefits and the good news. The good news is that radon is easy to test and easy to mitigate. Furthermore, many additional health benefits may result from mitigation for radon gas which also reduces entry of other soil gases and moisture into homes. Lastly, we could present this good news with cartoons or humor that entertains or amuses as well as informs.

REFERENCES

- Cornan-Selby, A. *The Mangers Edge*. Englewood, CO. 1991.
- Dietz, M. Personal Communication. G.M.D. Construction Inc. Lisbon, MD 1991.
- EPA. *A Citizens Guide to Radon - Don't Let a Dangerous Intruder Invade Your Home*. Draft - Sep. 6, 1990. U.S. Environmental Protection Agency, Washington, DC.
- Johnson, R. and Petcovic, L. *Communication Styles of Radiation Professionals*. In: *Risks--Perceptions, Management, and Communication*. Proceedings of the Midyear Meeting of the Health Physics Society, Feb. 4-8, 1990, Atlantic City, NJ.
- Johnson, R., Morgan, J. and Petcovic, L. *A Practical Guide to Radiation Health Risk Communication*. Communication Sciences Institute, Rockville, MD 1991.
- Johnson, R. *Quality Assurance - the Key to Successful Radon Programs in the 1990's*. In: *Proceedings of the 1991 Symposium on Radon and Radon Reduction Technology*. April 2-5, 1991, Philadelphia, PA.
- Martin, J. *Startling Radon Risk Comparisons*. In: *Proceedings of the Fourth Annual Conference of the American Association of Radon Scientists and Technologists*. Camp Hill, PA 1990.
- Myers, I. and McCaulley, M. *Manual: A Guide to the Development and Use of the Myers-Briggs Type Indicator*. Consulting Psychologists Press. Palo Alto, CA 1985.