Behavior and Social Issues, 19, 48-52 (2010).

ON GLOBAL WARMING AND LOCAL INDIFFERENCE: BEHAVIORAL ANALYSIS OF WHAT PERSONS CAN DO ABOUT THEIR OWN NEAR ENVIRONMENT

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ABSTRACT: The global warming question is so hot that it involves disputes among renowned scientists outside of the academic fields and entering the political world. Fear of the end of the world has been used to convince people, business, and countries to do or not to do things like preserve the Rain Forests, recycle garbage, use public transportation, and hundreds of other behaviors. However, long-term consequences cause little fear. There is no need to invent fear; pollution of the near environment is dangerous enough.
KEYWORDS: global warming, recycling, environmental pollution, behavior analysis

Global warming has become an ideological question. The fight among factions is so intense that a book called *Science As A Contact Sport* was recently published (Schneider, 2009). What can behavior analysts do in the midst of such confusing and confused positions? Denounce commercial interests in both sides of the question? That we can and should do as citizens, you do not need years of graduate school in behavior analysis to do that. Some profit from spreading fears of the end of the world caused by irresponsible human behavior. Business profiting from this side of the battle join forces with environmentalists. Other kinds of businesses profit from siding with those who think that the environmentalists' concerns are exaggerated: global warming is a macro phenomenon in all senses of the work macro, long term oscillations in the Earth's temperature have very little to do with local activities executed by people.

The issue is extremely complicated as a research matter. Tranberth and Fasullo (2010) point out that it is not possible to ascertain if the strong cold outbreaks of 2009 in the US were a natural phenomenon or a result of pollution because we do not have adequate measurements. One question still unanswered they formulated is: Where has the energy from global warming gone? Elderfield (2010) recently wrote:

> Earth's climate changes on several time scales. Over tens to hundreds of thousands of years, variations in Earth's orbit around the Sun alter the amount and distribution of external heating. The resulting changes in

> climate occur within the framework of tectonic processes that take place over millions of years driven by Earth's internal heat, tectonic shapes climate by recycling carbon between Earth's interior and surface. Tectonic forcing of climate is crucial for a habitable planet. Our closest planetary neighbors, Mars and Venus, have carbon dioxide in their atmospheres but were unable to escape runway "icebox" (Mars) and "greenhouse" (Venus) conditions. For Earth to avoid such a fate, a negative feedback must keep runaway warming or cooling in check. Over million-year time scales, it is commonly thought that atmospheric CO2 reflects a balance between input from volcano activity and removal by silicate rock weathering feedback. This balance, and how it may have changed, is reflected in the chemical composition of the oceans. (Elderfield, 2010, p. 1092).

Scientists are trained to wait until they can work out a solution to a problem, but laymen are not. The people, when alarmed, demand answers, and they will listen to the most reasonable guesses as those answers. The pressure for answers can contaminate even panels like that organized by the United Nations (a political panel of scientists, after all). The issue is now so hot that *Science* published a letter signed by dozens of members of the U. S. National Academy of Sciences (Gleik *et al.*, 2010) defending the by nature cautious positions of scientists:

> We are deeply disturbed by the recent escalation of political assaults on scientists in general and on climate scientists in particular. All citizens should understand some basic scientific facts. There is always some uncertainty associated with scientific conclusions; science never absolutely proves anything When someone says that society should wait until scientists are absolutely certain before taking action, it is the same as saying society should never take action. For a problem as potentially catastrophic as climate change, taking no action poses a dangerous risk for our planet. (Gleik et al., 2010, p. 689).

With such noise making it to be difficult to listen to the voice of reason I believe that what we behavior analysts can do is to use the turmoil to try to direct people's attention to local problems. Pollution is bad not only because it may be related to global warming; it is certainly bad for the health of persons living under such conditions. From my windows I can see the clear and blue sky of Brasília, an administrative capital. No air pollution from industries, they are a thousand kilometers away, near the Atlantic coast. But during rush hours drivers coming from the dormitory satellite cities (not so modern…) pack the roads and incoming avenues. You can see where those roads and avenues are from far away by

looking at the black clouds of pollution hanging over the road, produced by 600,000 cars each morning and each afternoon. Whether car, bus and truck exhausts I can see in Brasília contribute or not to global warming I don't know. So far, amidst the noise of the battle between the different sides the answer is "maybe". But I do know for sure that it is a health hazard for all of us who live here, and just because of that we should be doing something about that.

Air pollution is very serious in São Paulo, the largest metropolis of Brazil, one of the largest cities of the world. Approaching the city during the winter by air one is surprised by a black cloud covering the entire city. Some measures to solve the problem were taken, with some results. Substituting methanol for lead in gasoline has produced some effect. A restraining of passenger cars during week days also helped a little, but the cloud remains. These actions were taken at a very molar level, in the case of gasoline, and with the use of punishment for individual behavior (driving your car in a day it was supposed to stay shut in the garage). However, as we all know, punishment only works if it is severe (the amount you pay for the fine) and unavoidable. Well, the fine is not intense punishment, and rich people can avoid punishment by buying a second car to alternate with the one staying home.

Behavior analysts have been working with this issue for quite some time, 30 years or more, as we can check by reading the work of Burgess, Clark & Hendee (1971), Clark, Burgess & Hendee (1972), Geller, Farris & Post (1973), Kohlenberg & Phillips (1973), Powers, Osborne & Anderson (1973), Chapman & Risley (1974), Hayes, Johnson & Cone (1975), Stanford & Fawcet (1980), Tuso & Geller (1976), and Willems (1974), for example. More recently, Bacon-Prue, Blount, Pickering & Drabman (1980), O"Neill, Blanck, & Joyner (1980), Winett, Hatcher, Fort, Leckliter, Love, Riley & Fishback (1982), Van Houten & Nau (1983), Jacobs, Bailey & Crews (1984), Fantino (1985), Hopkins, Conard, Dangel, Fitch, Smith & Anger (1986), Timberlake (1993), Austin, Hatfield, Grindle, & Bailey (1993), Brothers, Krantz, & McClannahan (1994), Ludwig, Gray, & Rowell (1998), Lehman & Geller (2004), Schroeder, Hovell, Kolody & Elder (2004) and Nevin (2005).

Examples of civilian activism regarding local environmental problems are on the increase. Wang (2010) mentions two of those in China, one regarding the construction of 13 dams on the Nujiang River; the other a paraxylene plant near the center of Xianamen City. If one can do such a thing in communist China, one can do it everywhere.

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