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## Letters

### Skinner skewered

"Skinner Boxing" (SN:2/8/86, p. 92) has further reinforced my irritation regarding "behavior science," psychology and the like. My only response is further puzzlement as to why grownups spend so much time arguing about nonexistent, mythological, nonlogical attempted explanations of behavior that are no more than mirrors of their own subjective interpretation of their personal fantasy worlds.

I would like to offer a simpler explanation of behavior: It is all irrational. The reason is obvious, for that is what is necessary in an irrational world. How can one logically and rationally accept feasts, famines, floods, droughts, disease, health, wealth, poverty, peace, war, etc., which strike us completely at random? Evolution did a good job in creating the emotional tools necessary for sanity and survival, but those tools do not include rational behavior.

Perry J. Radoff  
Houston, Texas

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Cover: Advances in technology make it possible for the National Oceanic and Atmospheric Administration (NOAA) to map the bathymetry, or topography of the ocean floor, in breathtaking detail. But because such maps would make it easy for an enemy submarine to navigate off U.S. shores, the Navy wants NOAA, a civilian agency, to dive into secrecy with its bathymetric maps. (Photo: The USS *Henry Clay*/Courtesy Naval Photographic Center)



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The tiresome taradiddle about B.F. Skinner's ideas and his critics is all so much witchdoctery with neither side able, ever, to prove anything. It is highly reminiscent of religionists arguing their respective beliefs: You gotta have faith to start with or you won't understand anyway.

I'm not for (or against) either side; my point is, who cares? When you get to giving the Rosicrucians their day, let me know in advance so I can quit.

Andrew F. Downey Jr.  
Atlanta, Ga.

I've come to resolve the innate-vs.-learned-behavior delusion as follows: All organisms begin with a certain set of genes (or "predispositions" or "limitations") whose expressions or repressions are then affected (as molecular biologists have already shown us) by changing internal and external environments. Because both genes and their environ-

ments vary, so do the resulting behaviors, and those genes *contributing* to behaviors resulting in lower fitness are less likely to be passed on to future generations (along with a lot of genes that may have had nothing to do with the adverse behavior). Such a formulation should be no less applicable to humans simply because some of them consider the species uniquely "intelligent" or like to draw sharp boundaries between cultural and natural selection.

Upon careful reading of your account, indeed neither Skinner nor his critics appear to be saying anything much different. Perhaps the dialectic is good for the science, but the only real debate seems to be over the *relative contributions* of genes and environment to what we observe. I suspect that question will never be answerable quantitatively—and even if it were, and assuming neither side came to zero, someone please tell me why anyone

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NOAA will have to work under classified conditions. A number of officials from the various agencies involved say that the data set appears to be so good in terms of submarine navigation that it will probably all be classified secret. Classification means that scientists would need security clearances to work with the data, which could be examined only in secure facilities, and that NOAA would have to take special care in the collection and transport of the data from ships.

Classification would make research more difficult, but if that's the only way researchers can see NOAA data "we certainly might profit by changing our habits to work with it," says Gardner. What most concerns Gardner and other government researchers is that they would not be allowed to publish data in support of their conclusions and that their papers would be subject to Department of Defense review.

Noticeably silent during this debate have been university researchers, in part because they have their own Seabeam systems to do surveys at specific sites. "I expected that there would be considerable scientific outcry of support here," says NOAA's Wolff, "but it hasn't come about because the oceans don't have much of a constituency in this town [Washington] and because a lot of scientists interested in oceanography are dependent on the Navy for their livelihood, so they don't dare say anything." But, comments Gary Hill of USGS in Reston, Va., "if the military decides it is necessary to classify NOAA's Seabeam activities, the logical next question is,

what about the data being collected by academics?"

A Navy spokesperson says the Navy is not unconcerned with university data, but he doubts that it's a significant problem, because academic Seabeam vessels are not surveying large areas and the data collected are not published in their entirety. "The science does not dictate going over the whole EEZ," he adds.

Still, with existing academic and industry surveys covering more than 15 percent of the U.S. EEZ, according to Andreasen, and with more than 17 Seabeam systems in the world, owned by countries such as France, Japan and West Germany, Hill and others wonder whether the Navy is "trying to close the barn door after the horse has gone." Multibeam technology — originally developed by the Navy and released for commercial use in the late 1970s — has "advanced to a point where many of these things they're trying to protect are fast becoming part of the public domain," says Hill. "And even if they're successful in stopping agencies such as ours from doing this type of work, the EEZ is internationally open to research." Wolff adds that he feels "that the Navy is singling out NOAA for special prohibitions in this case which don't apply to universities and foreign countries."

A number of researchers also worry that classifying NOAA's EEZ data will make it awkward for U.S. scientists to conduct surveys in other countries' EEZs. Donnelly notes that the administration is considering placing access to the U.S. EEZ on a reciprocity basis, so that if U.S. researchers are allowed to study the EEZ of another nation, scien-

tists from that nation will be given free access to the U.S. EEZ. This issue has captured the attention of the State Department, which has sent representatives to some of the Navy-NOAA meetings.

In spite of the amount of time NOAA and the Navy have spent on this problem, it is clear that the agencies are far from seeing eye to eye. In the opinion of a Navy spokesperson, "No one has ever explained to the Navy what NOAA needs data of that quality and resolution for." And Andreasen of NOAA says, "We don't really understand the *why* of classification." This polarization, observes one participant, is like a presidential election with 52 percent voting one way and 48 percent the other: "Like it or not, 48 percent of the people go away unhappy."

Whatever the eventual outcome of this particular conflict, it is unlikely that military and civilian agencies have seen the last of the classification question. NOAA and the Navy, for example, could potentially be at odds in the future over other kinds of seafloor data, such as magnetic and gravitational field variations. As technological advances such as satellite instruments expand the scope and accuracy of earth-science data collection in general, those interested in surveying and studying the earth may find that dealing with security issues in one form or another is becoming a way of life. □

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should care what the numbers are!

*James D. Morefield  
Flagstaff, Ariz.*

"The aim of natural selection is survival," say Skinner's opponents. Natural selection does not have aims — only consequences. Furthermore, behavior that results in relative reproductive success, not merely survival, is selected for. Many behavioral scientists still accord (Spencerian) design to a process that has no purpose, just results. NeoDarwinians reject teleology; in this sense we agree with Skinner.

On the other hand, Skinner wants to argue the relative merits of heredity and environment, a debate that has absolutely no significance to an evolutionist. Behavior is selected for in a specific environment; if the environment changes, different behavioral predispositions are selected for.

*Ray H. Bixler  
Louisville, Ky.*

I believe that neither Skinner nor his many opponents are right. While both factions indicate that culture is an important ingredient in determining behavior, neither is, in my opinion, specific.

To me, the economic, political and social system establishes the cultural norms: its ethics, its morality, its economic practices and its class system are, for the vast majority, subtly or otherwise taught and accepted as worth pursuing and continuing. Thus war, fierce commercial competition, the exploitation of other nations and their peoples, and poverty alongside excessive wealth are regarded as legitimate; behavior is based on such broad acceptance.

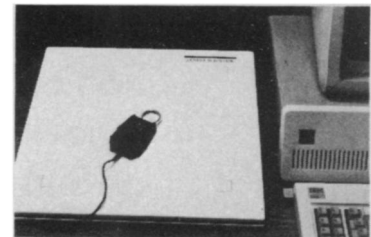
Can war, which kills off the flower of our youth, be a reinforced, survival adaptation? Are the super-rich necessarily the ones whose genes will help us survive? I seriously doubt it.

*Leonard T. Boyer  
Flushing, N.Y.*

This was no boxing match between Skinner and his opponents. Not a single solid punch was landed in six rounds. The facts fit better with a scuffle in a fruit market in which one side throws apples and the other oranges. Only by standing back from the action and not taking sides does it become clear that the fruit throwers' inability to deal with their own behavior in a reasonable way casts considerable doubt on their ability to understand what is going on in the minds of all us bystanders.

*Galen Rowell  
Albany, Calif.*

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