B.F. Skinner has taken the occasional hit on this blog, but at last somebody speaks up for him.

**Note:** This week's series of posts came in response to a bibliography posted by commenter, Ray Weitzman, a retired professor of linguistics who taught for 34 years at California State University, Fresno. He was trained in Chomskyan linguistics and specialized in phonetics.
and phonology. He also taught Japanese. I contacted him before the series began to appear and he kindly agreed to provide the following response.

The blogger’s introductory post perpetuates a number of myths, mischaracterizations, inexact comparisons, and false analogies regarding Skinner’s approach to understanding behavior, particularly language behavior. I don’t blame the blogger for this; he is just the vehicle for perpetuating these urban legends. I blame the current Zeitgeist.

For some reason the blogger is abhorred by what Skinner seems to be saying about the nature of human beings. He himself points out that he is no fan of cognitivism, because it doesn’t seem to explain “the literary and artistic achievements of humanity”, which have been his central concern. But he also is very unhappy with Skinner’s or any other form of behaviorism and its implications for the basis of human creativity. These are issues that aren’t directly relevant to his discussion of Skinner’s behaviorism and Chomsky’s so-called revolution. Here I will concentrate on trying to clarify what Skinner’s behaviorism is all about and why Chomsky’s criticisms didn’t really lay a finger on the integrity and scientific value of Skinner’s behaviorism.

Since I am constrained by limitations on the length of my comments and, frankly, there are others who have done a better job of it than I ever could (see my reading list), I will try to be as concise as possible.

Skinner did not believe that all learning could be explained in terms of just stimulus and response. He recognized that there were other forms of learning, such as Habituation, and Pavlovian (or Respondent) Learning. Almost all of his research focused on Operant Learning. Many people have a rather crabbed view of what operant learning is. It is not the kind of simple-minded Stimulus-Response (you-have-an-itch-and-you-scratch-it) that it is usually identified with. It is much, much subtler than that.

In the very first sentence in Chapter 1 of *Verbal Behavior*, Skinner described operant learning this way: “Men act upon the world, and change it, and are changed in turn by the consequences of their action.” As you can see, Skinner is trying to understand behavior in terms of a living organism’s interactions with its environment.

We act on the environment and in turn there are environmental consequences, which in turn affect our behavior. How the environmental consequences affect behavior and how antecedent discriminative stimuli occasion the behavior, as well as past interactional contingencies were and continue to be primary focuses of the experimental analysis of behavior. Clearly operant learning is not some kind of automatic process. The input-output computer analogy for operant learning is totally void of any relevance, nor is the comparison with the “Newtonian concept of cause and effect” of any relevance. Skinner did not believe that humans were wet-ware billiard balls.

The blogger makes a brief but undefended remark that Chomsky demonstrated the vagueness of Skinner’s use of the terms “stimulus” and “response”, as well as others. I won’t discuss the point here since it is too involved. But if there is anything that is vague about these terms, it is only in Chomsky’s mind, not Skinner’s.

For an examination of Chomsky’s arguments see MacCorquodale’s “On Chomsky’s Review of Skinner’s Verbal Behavior.” (Here)

The blogger also quotes a claim of Chomsky’s, but gives no warrants to support that claim. The claim is that “you cannot determine the rules for organizing sentences by studying the physical organization of sentences.” As a specialist in phonetics, who has studied and done research on the articulation and acoustics of speech, I can personally vouch for that. But the implication seems to be that Skinner was making such a claim. This is one of those myths I was talking about. Skinner made no such claim. In fact the claim seems to go back to a school of structural linguistics, not Skinner.
The blogger uses some rather *ad hominem* language when speaking about Skinner. He refers to him as an “emperor”, as if Skinner was some kind of tyrant that deserved to be overthrown for his evil ways. He almost seems to rejoice when he talks of Chomsky ending his reign. This is very unfortunate and demonstrates that the blogger is unaware of Skinner’s achievements and shows no respect for his sincerity and integrity as a scientist. Such remarks are totally unnecessary and tendentious.

On a personal note I’d like to deny that I was “insisting on the importance of operant conditioning in learning language”. There is a difference between persistence and insistence. I was only trying to point out that there was another non-cognitivist possible explanation (or at least partial explanation) for language learning that has been largely ignored for the last 50 years by cognitivists too bent on trying to find explanations inside of our heads. There is no doubt that it takes a brain to be able to carry out language behavior, but it also takes lungs, a vocal tract, vocal cords, a tongue, lips, jaw muscles, etc., as well. Also without interactions with other human beings in one’s environment, and the rest of the environment, there would not be the ontogenetic bases for language nor anything to talk about. The search for the essence of language in the brain is misbegotten.

**"Poverty of the Stimulus " Argument as Red Herring**

So far we haven’t learned very much about how Chomsky, wielding the Poverty of the Stimulus Argument (the Excalibur of linguistic nativism), victoriously overcame behaviorism. The reasoning frame that Chomsky seems to use is that if he can show that language, particularly the grammatical aspect of language, cannot be learned, then his theory of the innateness of a universal grammar must be right. I don’t know about you, but to me Chomsky’s use of the POS argument resonates in my ear with the Creationists arguments against biological evolution. If evolution can be shown to be impossible, except possibly in very minor ways, then creationism must be correct. The parallelism of the Chomskyan and Creationist arguments makes me wonder why this blog accepts the former but not the latter arguments. Is the POS argument that much more compelling and powerful? Is any theory of language acquisition that takes into account the interplay between behavior and the environment, including the social environment, doomed to fail because of the POS argument? I think not.

The POS argument is essentially this: Children get insufficient information about the grammatical structures of the speech utterances they hear, i.e., their primary linguistic data, to enable them to construct for themselves a mental grammar, i.e., a knowledge base that will permit them to produce and understand the sentences of their native language. Basically, all Chomsky did was to state the argument without presenting much evidence to support it, except to discuss, as linguists are prone to do, the intricacies of some syntactic patterns of sentences and why some sentences are judged grammatically correct and others are not.

There are several ways to show that the POS argument is nothing more than a red-herring. Here I will discuss only two ways to do so: (1) by showing that the linguistic input is not as “limited and degenerate” (Chomsky: *Rules and Representations*, p. 34) nor is it the sole environmental basis for acquiring language; (2) by using similar syntactic arguments to show that such arguments can plausibly lead to the opposite conclusion.

1. **Refuting the Input Argument**

In many places in his writings Chomsky talks about the poor quality of the linguistic input, meaning that children don’t get an adequate sample of different syntactic structures of their native language and that the linguistic input is full of false starts, hesitations, slips of the tongue, erroneous
lexical mistakes, sentence fragments, etc. such that the child can’t possibly construct for herself/himself an adequate base of grammatical knowledge to produce and understand sentences. This is a dubious claim and is not backed up by the thousands of studies over tens of thousands of hours of recordings of parent-child linguistic interactions.

An excellent source for statistical data on these interactions is to be found in Betty Hart & Todd Risley’s two books: *Meaningful Differences* (1995) and *The Social World of Children Learning to Talk* (1999). They studied 42 children from three different social classes from the ages of 13 months to 36 months. On average the children heard 341 utterances per hour containing numerous kinds of morphological and syntactic structures and numerous kinds of sentence types. Unfortunately, the complete details of the structure of the utterances that children heard and said still remain to be analyzed, as does the details of the verbal interactions between each parent and child. Nevertheless, the Hart & Risley findings reveal a tremendous richness in the children’s linguistic input over the 23 months they were studied.

Richness of input is necessary but hardly sufficient for a child to learn a language. Studies have shown that children just listening for hours and hours to another language do not show much progress in learning the language beyond perhaps having some rudimentary understanding of a few words. Study after study reveals that learning a first language also demands having a rich situational context and lots of feedback or interaction between the speaker and listener with frequent reversal of roles (See Ernst L. Moerk’s *A First Language Taught and Learned*). These are the kind of factors that a behavioral approach to understanding language acquisition expects but not the Chomkyan approach. What Chomsky has never come to realize or accept is that language behavior is mediated by other human beings, and not some pseudo-mechanical formal language-generating device that has somehow been embedded in our heads.

2. Refuting the Syntax Argument

Linguists in their efforts to adequately describe the grammatical structure of sentences often ask themselves or their native informants what kinds of grammatical structures are considered “correct” or “grammatical” and what kinds are “incorrect” or “ungrammatical”

In Part 1 the blogger says, “…while you can say both I hit the ball and The ball hit me, you cannot say both I hit the ball he threw and The ball hit me he threw.” He’s right about the first two sentences being grammatical but wrong about claiming the third sentence is ungrammatical. But the real issue concerns whether the fourth sentence is ungrammatical. From a grammatical perspective the phrase “he threw” modifies the pronoun “me”. I suggest there is no grammatical problem with it, just as there is no grammatical problem with It was me he threw. (Of course, some might take a prescriptivist view and say it should be “I” instead or “me”, but let’s skip that issue for now.)

Just as we find some utterances to be understandable but not grammatical, such as Me no cigar smoke (taking intonation and context into account), we also find some utterances grammatical but either meaningless or unintelligible, as in the example The erupting sky scalped a day of rest. What is at issue is the meaning of the fourth sentence and not its grammaticality. In other words, the ontology of word choice, the situational context, and past experience, as well as the speech community’s practices as far as sentence organization is concerned must be taken into account to determine whether a particular utterance is appropriate or not.

Links:
Reading list: [http://www.babelsdawn.com/babels_dawn/2009/06/motivation-and-speech.html?cid=6a00d83452aeca69e2011570d8579b970c#comment-6a00d83452aeca69e2011570d8579b970c](http://www.babelsdawn.com/babels_dawn/2009/06/motivation-and-speech.html?cid=6a00d83452aeca69e2011570d8579b970c#comment-6a00d83452aeca69e2011570d8579b970c)
MacCorquodale’s response to Chomsky:

Rules and Representations:

Meaningful Differences:

The Social World of Children Learning to Talk:

A First Language Taught and Learned: