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## A Commentary on Development: SD's and EO's

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*We should beware of operational redefinitions of mentalistic, reified terms, and connotationally loaded terms, like behavioral development. And we should beware of confusions between S's and EO's.*

### Development

Here's the problem with operational redefinitions of mentalistic and reified terms: The original meaning of those terms still controls most of the behavior of most of the users, in spite of the operational redefinition. For example, psychologists can operationally redefine intelligence as *what is measured on an intelligence test* as often and as loudly as they want; but within 10 seconds of that definition, the audience and even the psychologists themselves are responding as if intelligence were an innate, inner cause of intelligent behavior and, not incidentally, of their own personal success.

I have a similar concern with the common definition of behavioral development as *progressive changes in environment-behavior relationships*. While this definition is nominally neutral as to etiology of those changes, the context tends to imply biological determinism, as in the following common biological definition of *development*—a *purely biological unfolding of events involved in an organism changing gradually from a simple to a more complex level*. I don't think we can define out that connotation.

I would prefer to reload the dice with some such term as *behavioral acquisition* or the *acquisition of a behavioral repertoire progressive changes in environment-behavior relations*, though perhaps without progressive (<http://www.dict.org/bin/Dict>). However, I shan't hold my breath until ABA adopts this terminological reform.

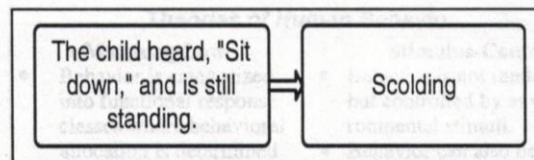
### The SD vs. the Warning Stimulus

Schlinger (on this volume) discusses the parent's command, "Sit down." Now, even though an analysis of "Sit down" is tangential to Schlinger's paper, and even though his example may not even be in the published version, I became intrigued with it and would like to share my intrigue with you.

At first, I went along with the standard assumption that "Sit down" was an S<sup>D</sup> for the response of sitting down. But that did not seem to fit. In the presence of an S<sup>D</sup>, a response will more likely be reinforced or punished. Does that fit here? Surely not punishment, so what about reinforcement? The parent says, "Sit down," the child sits down, and the parent says, "Good sitting behavior, child." Only in behavior-analytic textbooks would that happen. In the real world, at least the one I am a member of, such compliance is not praised and certainly doesn't get an M&M. So, if this is not a reinforcement contingency, what is it? Avoidance.

To understand this avoidance analysis, we need to look at a conditional stimulus—the stimuli arising from the parent's having just said, "Sit down," combined with or conditional on child's standing. This conditional stimulus, instruction combined with noncompliance, is a learned aversive condition because it has been paired with some sort of aversive condition such as frowns, scoldings, shouts, or hits (Figure 1).

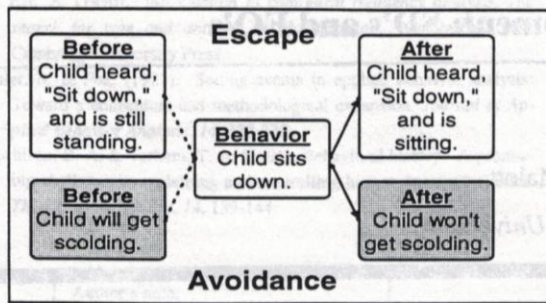
Figure 1. A pairing procedure that results in a learned aversive stimulus or condition.



Neither standing by itself nor having just heard, "Sit down," is an aversive condition; only the combination of the two stimuli is aversive. So, if the child sits down, he or she will escape the learned aversive condition, the conditional stimulus. The child will still have just heard "Sit down" but won't be standing, so the child will no longer be in an aversive condition (see the top contingency in Figure 2).

Furthermore, if the child immediately sits down, he or she will also avoid the aversive condition of being scolded, etc.—an avoidance contingency.

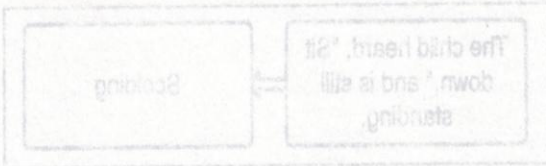
Figure 2. A two-factor escape/avoidance contingency.



In sum, I suggest that "Sit down" and probably most other parental instructions are not S<sup>D</sup>s, but rather they are warning stimuli or reflexive establishing operations (EOs) that form a crucial part of a two-factor escape/avoidance contingency. Incidentally, I think the use of the term "antecedent" increases the frequency with which behavior analysts fail to make the important distinction between S<sup>D</sup>s and EOs. At the end of rants such as this, it is appropriate to append -of course, this is just my opinion, and I may be wrong; but I am probably not.

To understand this avoidance analysis, we need to look at a conditional stimulus—the warning signal from the parent's having just said, "Sit down," combined with the condition of child's standing. This conditional stimulus, instruction combined with noncompliance, is a learned aversive condition because it has been paired with some sort of aversive condition such as frowny scolding, shouts, or his (Figure 1).

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Furthermore, if the child immediately sits down, he or she will avoid the aversive condition of being scolded, as an avoidance contingency.