

*NONCONTINGENT REINFORCEMENT:
SOME ADDITIONAL COMMENTS*

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I agree with Poling and Normand's (1999) view that *noncontingent reinforcement* (NCR) is an incorrect description of time-based procedures that reduce behavior rates. I also agree that schedule descriptors, such as *fixed-time attention* or *fixed-time escape*, are more accurate. Since the publication of Vollmer, Iwata, Zarcone, Smith, and Mazaleski (1993), I have received numerous comments about terminology. Most people have been surprised when I tell them I agree that the name is incorrect. Perhaps this commentary will allow me to express my agreement about terms and to describe a small part of the history behind our initial use of the term NCR.

The term NCR had been used for many years in the *Journal of Applied Behavior Analysis* (JABA) and other journals prior to the publication of our study. Similar (equally problematic) terms, such as *response-independent reinforcement*, were used in the *Journal of the Experimental Analysis of Behavior* (e.g., Zeiler, 1968). Historically, the term was used to refer to a control procedure designed to test reinforcement effects; that is, to demonstrate the effects of a contingency (e.g., Goetz, Holmberg, & LeBlanc, 1975). In our study, we were simply using a term that had been used previously. It is important to note that, in the same article, we also used the term *differential reinforcement of other behavior* (DRO) to describe another procedure. It occurred to us that the terms DRO and NCR both had potential limitations. I defer to Poling and Normand's commentary to describe the limitations of the term NCR, but

I will briefly mention one example of the difficulty we were faced with in using the term DRO.

The procedure known as DRO involves stimuli or events made contingent on the omission of behavior. If DRO is effective, the target behavior is weakened and therefore the use of the term *reinforcement* (the R in DRO) is problematic. It can be (and has been) argued that interresponse times (IRTs) are modifiable units and, hence, progressively longer IRTs are in fact reinforced (strengthened) in a DRO. Also, it is possible that all "other" behaviors that occur prior to stimulus delivery are being strengthened via reinforcement and, hence, compete with the target behavior (which is now on extinction). However, during any given behavioral treatment, it is not clear that DRO effects result from strengthened IRTs or reinforcement effects. Extinction and satiation are equally viable mechanisms underlying DRO effects. It is interesting to note that time-based schedules could also have their effects by "reinforcing" other behavior or longer IRTs (albeit incidentally), or by satiation and extinction (Iwata, 1999). The problem with using the terms DRO and NCR is that neither *necessarily* meets technical criteria for using the term *reinforcement*. By no means am I suggesting that we now abandon use of the term DRO; its roots are too deep and its use seems reasonable given the possibility of reinforcement effects. Rather, I raise the point because it exemplifies parallel terminology limitations with NCR, and also points to mechanisms by which time-based schedules may actually involve reinforcement under some circumstances. When we initially published our 1993 paper, we could

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have abandoned both or abandoned neither term. We felt that moving against convention would detract from the central focus of our study and that we did not have enough data to do so convincingly.

Almost certainly, some *JABA* authors will argue that the term NCR should continue to be used. One reasonable argument is that using NCR has served a good purpose. The term seems to have led, in part, to the recognition of a general *class* of procedures to be used as treatment. This may not have happened so quickly and comprehensively if we referred to the procedure initially as fixed-time attention. Calling the procedure NCR gave it status as a treatment package on par with DRO, insofar as both names describe a *general* procedure that is not limited to any particular stimulus or event (e.g., the event can be food, attention, escape, toys, etc., in either NCR or DRO). The descriptor *fixed time* requires reference to a specific type of stimulus (attention) and does not imply that the stimulus had already been shown, via functional analysis, to reinforce the problem behavior.

To conclude, I have always agreed with assertions that the term NCR is technically inaccurate. A combination of historical and procedural considerations led to its use. However, because it is reasonable to conclude that using the term NCR has served a useful purpose, some authors may be inclined to continue its use because of convention. Although I now use schedule descriptors in my own work (e.g., Vollmer et al., 1998), I am not entirely content using them.

Fixed-time (event), for example, does not capture the generality of the procedures, nor does it capture an essential property of the treatment: The noncontingent event bears a known functional relationship to the target behavior. Whatever we call it, the procedure has proven useful. I thank Poling and Normand for setting the record straight on terminology.

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