

Discussion

Reading acquisition and phonemic awareness testing: how conclusive are data from Down's syndrome? (Remarks on Cossu, Rossini, and Marshall, 1993)

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Cossu, Rossini, and Marshall (1993) (hereafter CRM) report that Down's syndrome children, who displayed only mild retardation in reading tests, performed at floor level on various tasks supposed to measure phonological awareness. They take these data as falsifying some popular notions about the association between phonological awareness and reading acquisition. The paper raises several questions.

(1) What particular notion is the target of CRM's attack? This is not completely clear. In the early parts of the paper, the authors appear to focus on the idea of a unidirectional relation from phonological awareness to reading, and the studies they criticize are among those that have been cited as supporting that particular type of relation. The impression at that point is that they are taking sides in the old controversy around the "direction of causality" question, ignoring repeated criticisms of the simplistic way in which that question has generally been asked (Bertelson, 1986; Bertelson & de Gelder, 1989; Bertelson, Morais, Alegria, & Content, 1985; Content, 1991; Morais, Alegria, & Content, 1987). But later (p. 154) they shift their line of fire to any hypothesis implying a *necessary* relation, in whatever direction, between the two terms. We shall hereafter take that more reasonable notion as representing CRM's target.

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(2) The next question is whether fresh data are necessary to counter the proposal that no form of alphabetic reading is ever acquired without some particular form of phonological awareness preceding or accompanying it. Here, the critical point is that since the evidence supporting an association between phonological awareness and reading performance is correlational, it cannot by nature lead to conclusions of necessity. Of course one can probably find in the relevant literature affirmations that go beyond what the data allow, but that is the case of any literature. On the other hand, several well-known facts already support the suggestion that forms of reading emerge with low levels of metaphonological competence. The “logographic reading” performed by many beginning readers (Seymour & Elder, 1986) is a case in point. And we have drawn attention before (Bertelson & de Gelder, 1989) to similar implications from the substantial reading ability observed by Campbell and Butterworth (1985) in a university graduate otherwise unable to perform phonological segmentation tasks. Could CRM’s red herring turn out on closer inspection to be a strawman?

(3) Now, what did the Down’s syndrome children actually do? One of the strangest aspects of CRM’s paper is that the description of the metalinguistic tests is limited to abstract statements of what the experimenters tried to get the children to do. Nothing is said of the testing procedure, especially of the instructions, which obviously present the critical difficulty for this kind of work. The same remark holds for the author’s previous study of a hyperlexic child (Cossu & Marshall, 1990).

(4) This leads naturally to the main question: does the failure of the Down’s syndrome children on the metalinguistic tests really demonstrate a dissociation between reading and phonemic awareness? In subjects with general cognitive skills in the normal range who do poorly on segmentation tasks – like illiterates, pre-readers or readers of non-alphabetic orthographies – the latter failures presumably reflect a lack of explicit representations of the phonological units to be manipulated (see Bertelson, Morais, Alegria, & Cary, 1987, for further elaboration on that point). But with subjects with severely impaired cognitive skills, like Down’s syndrome ones, or the hyperlexic child studied by Cossu and Marshall (1990), simple inability to understand the instructions may be involved. To control for that possibility, an essential piece of evidence would have been the demonstration that the same subjects could perform similar cognitive operations with other types of material, like counting musical notes or deleting features from a visual form. Those kinds of controls were applied in the cases of adult illiterates (Bertelson, De Gelder, Tfouni, & Morais, 1989; Morais, Bertelson, Cary, & Alegria, 1986) and of non-alphabetic readers (Bertelson & de Gelder, 1991) and they showed that the deficits displayed by these subjects were highly specific of phonemic manipulations. Both populations, for instance, performed the same manipulations much better with syllables than with consonants. The fact that the

Down's syndrome subjects failed in a task that imposes deletion of one or two syllables from a presented utterance, an achievement that would be well within reach of the latter groups, strongly suggests the role of general cognitive deficits.

It must be clear that we are not arguing that Down's syndrome children have phonemic representations. They might well have learned to read through some alternative route, as suggested by CRM. Our point is simply that their cognitive deficits make it impossible to decide the issue by application of traditional tests.

Curiously, CRM might have come to the present conclusion, had they further pursued their reference to "what additional skills over and above phonological awareness *per se* are implicated in particular tests thereof" (Cossu et al., 1993, p. 130). But they chose instead to deny the implication, with the radical affirmation that "with respect to conscious skills, failure to understand the nature of the task is failure to be able to perform the task" (p. 134). What they want us to accept is that phonological awareness is what tests thereof – any tests – measure.

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