Stimulus-Governance and the Hyperkinetic Syndrome

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The hypothesis that hyperkinetic children are stimulus-governed was tested. In a sample of 39 nonmedicated hyperkinetic boys 26 were found to be stimulus-governed. In a control sample of 20 nonmedicated boys 6 were found to be stimulus-governed. An association was found between the hyperkinetic syndrome and stimulus-governance. The hypothesis is raised that response to methylphenidate is related to stimulus-governance. Several issues raised by the research are discussed.

On the basis of her researches with kinesthetic figural aftereffects, Petrie (1967) described two main types of persons in terms of their characteristic perceptual style: augmenters and reducers. She also described an atypical perceptual style that she found only in patients (otherwise unspecified) with organic cerebral

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damage, and in 15% of a sample of juvenile delinquents: stimulus-governance. An augmenter tends to increase the experienced magnitude of sensory input, while a reducer tends to decrease the experienced magnitude of sensory input. A stimulus-governed individual, unlike an augmenter or reducer, reduces the magnitude of a stimulus if the preceding stimulus is of greater magnitude, and augments the magnitude of a stimulus if the preceding stimulus is of smaller magnitude. Buchsbaum and Silverman (1968) found that augmenters and reducers have different visual average-evoked-response patterns. They postulated the existence of a stimulus intensity control mechanism in the central nervous system.

Researches have established a relation between augmentation and reduction and a variety of personality characteristics and psychopathological conditions (Buchsbaum, 1975; Buchsbaum & Pfefferbaum, 1971; Petrie, 1967; Silverman, 1972; Silverman, Buchsbaum, & Henkin, 1969).

The present article reports a study designed to test the hypothesis of the first author that hyperkinetic children are stimulus-governed, in contrast to nonhyperkinetic children.

METHOD

Subjects

The hyperkinetic sample consisted of 39 boys. They came from a Dutch special education primary school where, in the Netherlands, such children are often sent. They met the following selection criteria: (1) 7 to 13 years of age, (2) referral to the school for hyperkinesis, (3) minimum WISC full-scale IQ of 90, (4) no report of gross neurological impairment in their medical records, (5) not receiving medication, and (6) a score in the upper 10th percentile range of children who score positive for the hyperkinetic syndrome on Safer and Allen's (1976) classroom teacher's behavior checklist. The control sample was composed of 20 boys attending an ordinary Dutch primary school. They met the following selection criteria: (1) 8 to 11 years of age, (2) an IQ above 90, (3) not receiving medication, and (4) a score negative for the hyperkinetic syndrome on Safer and Allen's classroom teacher's behavior checklist.

Visual average-evoked-response techniques do not permit the detection of stimulus-governance. As a result, stimulus-governed subjects are incorrectly identified as augmenters or reducers.

In the Netherlands hyperkinetic children are very rarely given medication.

The checklist (which was translated into Dutch for the study) assesses pupil classroom behavior. The initial few items on the checklist are adapted from the ratings of Werry and Quay (1969); the remaining are adapted from the work of Connors (1969). A number of the items discriminate for the hyperkinetic syndrome.