Sustained Attention in Children with Autism

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Although many children with early infantile autism cannot maintain attention to externally imposed tasks, they may continue a repetitive behavior of their own choosing for long periods of time. This study examined the performance of autistic and mental age matched normal children on a Continuous Performance Test of sustained attention. Results suggest that autistic children’s difficulties in sustaining attention on imposed tasks may be attributable partly to a developmental delay and partly to the motivational contingencies of task rather than to a primary impairment in the ability to sustain attention.

Although many children with early infantile autism cannot flexibly allocate and maintain attention to externally imposed tasks for even a few minutes, they may be able to continue a repetitive behavioral routine of their own choosing for long periods of time. Does this erratic ability to sustain attention represent a primary impairment of attention in autistic children or does it depend more on motivational contingencies or specific task demands? At least three hypotheses (not mutually exclusive) can be formulated:

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1. **The usual externally imposed tasks are too complex and changing for autistic children who tend to prefer simple, repetitive pursuits.** Research with a variety of tasks has documented the inability of autistic children to manage complex tasks. Children with autism are “overselective” in that they respond to limited discriminative cues (Cook, Anderson, & Rincover, 1982; Fein, Waterhouse, & Tinder, 1979; Lovaas, Koegel, & Schreibman, 1979; Wilhelm & Lovaas, 1976), with little flexibility in their scanning to detect other important information, especially on complicated tasks. Some theorists have suggested that an underlying state of hyperarousal leads to the constricted behavioral repertoire and the preoccupations with simple, repetitive stimuli (Hutt & Hutt, 1968). Stereotyped movements may serve as arousal displacement activities to modulate tension (Kinsbourne, 1980).

A task of sustained attention such as the Continuous Performance Test (CPT; Rosvold, Mirsky, Sarason, Bransome, & Beck, 1956) does not require the subject to shift strategies; rather it tests the child’s ability to maintain a single strategy over time. Frankel, Freeman, Ritvo, and Pardo (1978) have suggested that a repetitive stimulus may be inherently reinforcing for children with autism. If the everyday difficulty getting autistic children to maintain attention on tasks is due to the complex and changing nature of these tasks, autistic children might be expected to perform within normal limits on a simple, continuous performance task.

2. **Autistic children’s motivation for mastery or for social reward is insufficient to maintain performance.** Motivational abnormalities in autism have been studied primarily to determine what aspects of the learning and/or testing situation improve task performance. The bulk of behavior modification research and clinical techniques (Ferster, 1961; Lovaas, 1977) emphasizes that strong primary reinforcers (Dunlap & Egel, 1982), sensory stimulation (Hung, 1978; Murphy, 1982), or idiosyncratic preferred reinforcers facilitate task-relevant learning in autistic children (Koegel & Egel, 1979). Social reinforcers such as smiles of frowns, do not as predictably elicit the expected results (Howlin, 1978; Wing, 1978) although some children with autism are sensitive to interpersonal manipulations of the experimental situation. Clark and Rutter (1981) demonstrated that clear structure and high interpersonal demand increased attention and performance on a model-building task.

Most cognitive research with autistic children does not consider that the reinforcement contingencies of the learning situation may significantly affect their performance. Reinforcement parameters are critical to evaluate because motivation is an intrinsic and crucial component of attention, and what may appear as a cognitive or attentional deficit could be related rather to motivational deficits (Kinsbourne, 1983). If motivational deficits are key to the autistic child’s difficulty with everyday tasks, then varying incentives on the CPT should alter performance, and the proper incentive conditions might bring performance within normal limits.