

Douglas V I. Stop, look and listen: the problem of sustained attention and impulse control in hyperactive and normal children: *Can. J. Behav. Sci.* 4:259-82, 1972. [McGill University and Montreal Children's Hosp., Canada]

It is hypothesized that processes involving sustained attention and effort and inhibitory control account for the behavioral and cognitive deficits found in hyperactive children. It is also argued that therapeutic results obtained with stimulant medication result from its effect on these processes. [The *Science Citation Index*® (SCI®) and the *Social Sciences Citation Index*® (SSCI®) indicate that this paper has been cited over 165 times, making it the most-cited paper ever published in this journal.]

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"This paper was written after I joined the Department of Psychology at McGill University to help build its clinical training program. Since my new department was a bastion of physiological and experimental psychology, it is perhaps fortunate that I had chosen physiological psychology as a minor area of study during clinical training at the University of Michigan.

"When I developed an interest in childhood hyperactivity while working at the Montreal Children's Hospital, I found several of my colleagues at McGill interested in the questions I wanted to answer and ready to help. Although I had been warned that Donald Hebb, a world-renowned physiological psychologist, was 'anti-clinical,' he proved to be a gently ironic source of wisdom and perspective.

"Most of the work reported in the paper was carried out in collaboration with students in our clinical program, which combines service and research training. As our research expanded into the areas of learning, perception, cognition, memory, neuropsychology, and psychopharmacology, we drew on the ideas of a number of experimental psychologists, some of whom had made a

strong impression on my students. These included D. Bindra, A. Amsel, E. Tulving, D. Berlyne, D. Broadbent, B. Milner, and J. Kagan.

"The paper was based on my presidential address to the Canadian Psychological Association and reflects an attempt to integrate our findings up to that time. I argued that the children's hyperactive and disruptive behaviors are accompanied by more subtle cognitive deficits involving the deployment of attention and effort and the inhibition of impulsive responding. I also argued that stimulant medication helps reduce these deficits. In 1980, the importance of attentional problems in the syndrome was recognized—and perhaps exaggerated—by the adoption of a new diagnostic label, 'attention deficit disorder,' by the American Psychiatric Association.

"Recently, the Canadian Psychological Association honored me with its Award for Distinguished Contributions to Psychology as a Profession. I used the occasion to review the research findings and theoretical biases that have made different observers focus on defects in processes governing attention, inhibitory control, arousal, response to reinforcement, stimulation-seeking behavior, or motor activity, and I argued that a comprehensive theory will have to account for the interrelated deficits emphasized in these different theories. I also stressed that many of the children's abilities are intact. Consequently, our research group has adopted the working hypothesis that we are dealing with a disturbance in self-regulation involving both facilitatory and inhibitory processes.<sup>1,2</sup>

"I believe that the paper was heavily cited because I happened to begin work on hyperactivity just when investigators from several disciplines were developing an intense interest in the disorder. In addition, the children are both troubling and intriguing. Their thoughtless, impulsive behavior creates serious problems for themselves and society, and the fact that stimulant medication helps curb these tendencies raises perplexing theoretical and ethical issues. Because many of the children have good IQs, they elicit concern about wasted potential. Perhaps, too, they make us aware of the fine line that separates our behavior from theirs."

1. Douglas V I & Peters K G. Toward a clearer definition of the attentional deficit of hyperactive children. (Hale G A & Lewis M. eds.) *Attention and the development of cognitive skills*. New York: Plenum Press, 1980. p. 173-247.
2. Douglas V I. Attention and cognitive problems. (Rutter M. ed.) *Developmental neuropsychiatry*. New York: Guilford Press, 1983. p. 280-328.