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Dissertation Abstracts

EVALUATIONS OF COGNITIVE, LINGUISTIC, AND MNEMONIC COMPETENCIES OF PEOPLE WITH DOWN'S SYNDROME: AN INTEGRATIVE CONCEPTION OF MENTAL RETARDATION

People with intellectual disability have developmental, learning, and memory skills higher than what they spontaneously display (i.e., cognitive underfunctioning). They use fewer active strategies in acquisition of skills and competencies. In particular, people with Down syndrome are in this situation. As memorizing is a key ability in intellectual functioning, a more precise identification of the developmental specificities of those individuals makes it possible to meet special educational needs children needs by targeting remedial programs on the most impaired areas based on their strengths. This current research comes within the scope of the integrative theories of mental retardation. It focuses on the memorizing processes used by people with Down syndrome.

The first step was to constitute homogeneous groups by maximizing the intergroup differences and by minimizing intragroup differences. Our purpose was also to determine the common characteristics the Down syndrome participants display in each group (i.e., "patterns of development"). The sample was comprised of 60 children and teenagers with Down syndrome (mean chronological age = 12 years [6 years, 4 months–17 years, 3 months]). Developmental cognitive level was assessed with the K-ABC, and developmental language level was assessed with the Epreuves pour l'examen du langage (Tasks for language assessment).

One purpose was to assess simultaneously various short-term memory (STM) systems (verbal STM, visual STM, and spatiosequential STM) in a developmental perspective and in order to compare our participants' performance to those obtained by typically developing individuals with equivalent mental age (using same tasks and procedure). One group was composed of 54 children and teenagers with Down syndrome, and the other was composed of 54 typically developing children without a disability or pathology (Frenkel & Bourdin, 2009). The main goal was to study more particularly the strategy of active rehearsal. We have conducted three experiments aiming at evaluating the effect of linguistic competences and

the impact of environmental modifications in the use of this mnemonic strategy. The first two experiments related to adults. It allowed us to evaluate spontaneous strategic behavior, strategic behavior after a light orders change, and strategic behavior after one single active rehearsal training session. The third experiment was conducted with 52 children and teenagers with Down syndrome split into four groups according to their cognitive developmental level. In each group, one-third of the participants did not receive active rehearsal training (control group), and two-thirds of the participants received six sessions of active rehearsal training. One pretest and three posttests were done with word lists memorizing task (immediately after the last session training, 3 weeks later and 7 weeks later). We analyzed the results obtained in an in-depth way, such as analysis of rehearsal protocols.

For STM storage capacities, individuals with Down syndrome exhibited a distinctive pattern of memory performance in addition to their developmental specificities. Concerning rehearsal strategy, our results showed a deficit in production for people with Down syndrome: Participants did not use spontaneously active rehearsal. Nevertheless, this deficit is reversible. For example, concerning adults, a light intervention from the environment is sufficient to make them use a spontaneously active rehearsal strategy. Those results confirmed the existence of cognitive underfunctioning for people with Down syndrome.

The final part treats future research perspectives and the role of metacognition in learning. Further studies should be conducted in order to look into the results obtained so far in more detail (e.g., cross-syndrome studies).

REFERENCE

Frenkel, S., & Bourdin, B. (2009). Verbal, visual and spatial-sequential short-term memory: Assessment of the storage capacities of children and teenagers with Down syndrome. *Journal of Intellectual Disability Research, 53* (2), 152–160.

Stéphanie Frenkel
University of Liège, Belgium