Chapter 10

A Unique Type of Representation Is the Essence of Giftedness: Towards a Cognitive-Developmental Theory

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Abstract This chapter presents the cognitive-developmental theory that seeks to explain the very essence of giftedness. According to the theory, the structural organization of giftedness is presented at the six interrelated levels: (1) the neuropsychological foundation of giftedness, (2) its developmental foundation, mainly formed by sensitive periods, which significantly accelerate a child’s development, (3) the cognitive basis of giftedness, and (4–6) three levels of the manifestations of giftedness: intellectually creative, metacognitive, and extracognitive (i.e. specific feelings, senses, intuition, preferences, and intentions) abilities, respectively. The cognitive basis of giftedness is the specific cognitive experience of the gifted that manifests itself in their unique type of representations. It means that gifted individuals see, understand, and interpret everything differently. The gifted’s unique type of representations or their unique picture of the world or their unique vision is the essence of giftedness.

Keywords Cognitive experience · Unique representations · Child prodigies · Sensitive periods · Conceptual structures · Subjective mental space · Accelerated development

Introduction

“What is the essence of giftedness?” is the question that captured my attention at the age of 15 years and has been guiding my research since then. Many good theories of giftedness have been offered over the last three decades (see Colangelo & Davis, 2003; Heller, Monks, Sternberg, & Subotnik, 2000; Sternberg & Davidson, 1986, 2005; as well as many chapters included in this volume). However, some essential pieces of the puzzle are still missing. This chapter presents the cognitive-developmental theory that seeks to explain the fundamental nature of giftedness by thus answering the above-mentioned question.

Based on a synthesis of findings from the psychology of high abilities, developmental, cognitive, and educational psychology, and especially on research of Marina Kholodnaya and Lev Vygotsky, the theory states that giftedness is formed by the six interrelated levels or layers, each of which provides a basis for the subsequent level or layer. The model presents the structural organization of giftedness as follows (see Fig. 10.1).

The first layer is the neuropsychological foundation of giftedness, mostly connected to the exceptional neural plasticity of the brain of the gifted. The second level is the developmental foundation of giftedness, mainly formed by sensitive periods, which significantly accelerate a child’s mental development through the actualization of his or her intellectual and creative potential and the growth of the individual’s cognitive resources resulting in the appearance of a unique cognitive experience (Shavinina, 1997, 1999). This experience is the cognitive basis of giftedness, the third layer in its structural organization. The specific cognitive experience of the gifted manifests itself in their unique type of representation of everything what is going on around them (i.e. any event, idea, problem, etc.). It means that the gifted see, understand, and interpret the world around them in a different manner than the rest of people. The
gifted’s unique individual picture of the world is the essence of giftedness and high abilities as a whole. Another aspect of the uniqueness of the gifted’s intellectual picture of the world is their objectivization of cognition. It means that the gifted are able to see the world “as it was, as it is, and as it will be in its objective reality” (Kholodnaya, 1990, p. 128; Shavinina, 1996). The gifted’s specific cognitive experience provides a basis for three levels of manifestations of giftedness (i.e. its various characteristics and traits). In other words, all multiple manifestations of giftedness can be categorized in three main groups. These three levels—intellectually creative, metacognitive, and extracognitive manifestations—represent the fourth, fifth, and sixth levels in the structural organization of giftedness, respectively (see Fig. 10.1). Taken together, these six levels describe the nature of giftedness.

In the sections that follow I will consider each of the levels. In the context of my analysis of the developmental foundation of giftedness, I will discuss the child prodigy phenomenon. As this is the only chapter in this volume that considers child prodigies, I will therefore review the existing literature in this area.

**Neuropsychological Foundation of Giftedness**

John Geake (this volume) reviewed the field of the neuropsychology of giftedness and demonstrated that the brain of the gifted functions differently. Larry Vandervert et al. (this volume) suggested that the extraordinary achievements of the gifted in general and child