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Prevalence of Emotional, Intellectual, Imaginational, Psychomotor, and Sensual Overexcitabilities in Highly and Profoundly Gifted Children and Adolescents: A Mixed-Methods Study of Development and Developmental Potential

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Abstract: This study examined the prevalence of the five forms of overexcitability in children ages 4–13 years who were previously identified as highly or profoundly gifted via a Wechsler Intelligence Scale for Children (WISC) score of 140+. The prevalence of overexcitabilities included an examination of the development and developmental potential according to Dabrowski's human development theory. The results of this study provided an estimate of the prevalence and distinct types of overexcitability among highly-profoundly gifted young people. These findings will aid the inclusive identification and support of highly-profoundly gifted children and adolescents and help curb historical misunderstanding, misidentification, and misdiagnosis. The mixed-methods study included 88 study participants (parents) from the United States and Belgium who completed the Overexcitabilities Questionnaire II, Adapted (OEQ II, Adapted), the Development and Family History Questionnaire, and a semi-structured interview. The most prevalent OE profile was all five forms of overexcitability—emotional, intellectual, imaginational, psychomotor, and sensual—exhibited *a lot of the time* or *most of the time*. Nearly all (99%) of the highly-profoundly gifted children expressed combinations of three or more higher-level overexcitabilities including emotional, intellectual, and imaginational. A holistic assessment of overexcitabilities and giftedness by a professional trained in profound giftedness is warranted for unidentified children and adolescents with behaviors and development similar to the identified highly-profoundly gifted children examined in this study. To aid in the inclusive, early identification of giftedness and highly-profoundly gifted children, universal screening is recommended for all children entering kindergarten.

Keywords: profoundly gifted; highly gifted; highly-profoundly gifted; overexcitabilities; developmental dynamisms; Dabrowski; human development; developmental potential; inclusive assessment; early identification

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1. Introduction

Highly-profoundly gifted children are at high risk of misunderstanding, misidentification, and misdiagnosis and require support and scaffolding from like-minded peers, mentors, and practitioners to meet the highly-profoundly gifted individual's exceptionally unique educational and developmental needs and to provide fitting opportunities for positive growth and well-being. *Highly-profoundly gifted* is defined as follows: significantly advanced cognitive abilities and development, as compared to those of peers in the chronological age group, experienced through heightened sensitivity, intensity, and awareness identifiable through social, emotional, physical, cognitive, and/or altruistic behaviors, developmental milestones, and life experiences across the life span [1] (p. 146).

Overexcitabilities are the greater-than-typical responses of the nervous system distinguished in five forms [2,3]. The *primary overexcitabilities* included emotional overexcitabilities (EMO OEs), intellectual overexcitabilities (INT OEs), and imaginational overexcitabilities (IMA OEs). Sensual overexcitabilities (SEN OEs) and psychomotor overexcitabilities (MOT OEs) are considered *secondary overexcitabilities* [3,4]. In combination with other overexcitabilities, sensual OEs stimulate the senses, while psychomotor OEs engage the mind–body connection.

Psychiatrist and psychologist Kazimierz Dabrowski recognized that overexcitabilities occurred within the biological system of the individual (internally) and outside of the individual's biological system (externally). For example, emotional OEs can be emotions that are deeply processed (internally) and displayed very strongly (externally). Intellectual OEs can be a strategic mindset (internally) and planned execution (externally). Imaginational OEs can be the development and visualization of ideas and possibilities in the mind (internally) and creative presentation (externally). Psychomotor OEs can be an intrinsic harnessing of energy (internally) and a physical release of energy through neuro-movement (externally). Sensual OEs can be a heightened sensory response (internally) and a displayed physiological response (externally) [3–6].

Overexcitabilities were first linked to highly-profoundly gifted children through Dabrowski [2], who described the distinct nature of overexcitabilities among gifted adolescents. He discovered the developmental impact of special abilities and talents and greater-than-typical sensitivities, intensities, and awareness (overexcitabilities). Dabrowski incorporated these developmental discoveries into his human development theory, as two additional influences of developmental potential. More specifically, *developmental potential* is made-up of the following:

(1) Physiology and genetic make-up;
(2) Social–environmental influences;
(3) Autonomous forces such as self-direction and independence, which Dabrowski termed *the third factor*;
(4) Overexcitabilities (emotional, intellectual, imaginational, psychomotor, and sensual);
(5) Special abilities and talents [2,3].

A recent literature review of highly-profoundly gifted children and overexcitabilities found connections between being highly-profoundly gifted and having overexcitabilities [1]. Specifically, the authors found that Dabrowski's [2,3] and Dabrowski's and Piechowski's [5] observations of *higher-level overexcitabilities* (the combination of multiple overexcitabilities acting together, including emotional, intellectual, and imaginational OEs) and the formation of *developmental dynamisms* (higher-level overexcitabilities in the process of forming intuitive, emotional, and cognitive forces) described the significantly greater-than-typical sensitivities, intensities, and awareness observed in the advanced (and asynchronous) development of highly-profoundly gifted children. For example, the greater-than-typical zest for understanding, preference for complexity, and simultaneous synthesis of patterns, documented in highly-profoundly gifted children, included emotional, intellectual, and imaginational overexcitabilities acting together [1].

These significantly greater-than-typical developmental differences have been studied for over 100 years by pioneer scholars including Terman [7], Hollingworth [8], and Gross [9]. However, highly-profoundly gifted children's educational and developmental needs go largely unmet. Neihart et al. [10] realized that "the problems of social isolation, peer rejection, loneliness, and alienation that afflict many extremely gifted children arise not out of their exceptional intellectual abilities, but as a result of society's response to them" [10] (p. 25). Highly-profoundly gifted children continue to be at risk for misunderstanding, misidentification, and misdiagnosis [11]. This systemic problem led to the following question: how can we inclusively identify highly-profoundly gifted children and adolescents to provide for their social–emotional well-being and educational development? Wood and Laycraft [1] concluded that the assessment of higher-level overexcitabilities (and developmental dynamisms) could be an effective tool for identifying the greater-than-

typical intensity and development of highly-profoundly gifted children. Further research to determine the prevalence of overexcitabilities in highly-profoundly gifted children was warranted.

The distinguishing developmental differences typically found in the highly-profoundly gifted population have not been considered in past quantitative studies of overexcitabilities [1]. To date, Gallagher's [12] study was the only quantitative research study of highly gifted children and overexcitabilities found in the literature. Previous quantitative studies of overexcitabilities (most using a version of the OEQ II) and gifted and/or typical children included the United States, Belgium, Spain, China, Korea, Turkey, and Taiwan. In these previous studies, the children may have been part of a gifted program; however, no strict quantitative criteria, such as the documentation of an intelligence quotient (IQ) score, were required or cited [13–28]. In previous studies, where giftedness was identified by an IQ score, the required IQ score was 120+ [29] or 125+ [30,31]. Siu [32] used standardized cognitive ability tests for the identification of gifted study participants, and Tieso [33,34] used standardized tests of achievement, ability, and creativity.

Previous research has found that gifted individuals have greater overexcitability scores than their typical peers. Overexcitability score differences varied depending on the form of overexcitability and the variables of the study. A meta-analysis conducted by Steenbergen-Hu [35] found that giftedness was significantly correlated with all five forms of overexcitability. Steenbergen-Hu also found positive correlations between the presence of overexcitabilities and the level of giftedness. In a recent study of 108 children, ages 11–14 years, attending a charter school for highly gifted, Gallagher [12] found that 40% of the children scored high on three or more forms of overexcitability on the OEQ II. Identification was based on attendance at the charter school, which required an IQ score of two to three standard deviations above the norm (or an IQ score of 130+) for admittance [11].

According to Dabrowski's human development theory, it is most appropriate for overexcitabilities to be understood as part of an individual's holistic development and developmental potential [36]. To fill the current gap in understanding, the primary focus of the current study was to examine the prevalence of all five forms of overexcitability (emotional, imaginational, intellectual, psychomotor, and sensual) in highly-profoundly gifted children and early adolescents. More specifically, the study aimed to answer the following research questions:

1. What is the prevalence of emotional, imaginational, intellectual, sensual, and psychomotor overexcitabilities in highly-profoundly gifted children ages 4 to 13 years when considering the differences according to gender, country, and age?
2. What is the prevalence of emotional, imaginational, intellectual, sensual, and psychomotor overexcitabilities in highly-profoundly gifted children ages 4 to 13 years considering their developmental milestones and their social, emotional, physical, cognitive, altruistic development, and life experiences, according to their parents' perceptions?
3. What is the prevalence of emotional, imaginational, intellectual, sensual, and psychomotor overexcitabilities in highly-profoundly gifted children ages 4 to 13 years according to their developmental potential, defined as physiology and genetic make-up, social–environmental influences, autonomous forces, overexcitabilities, special abilities, and talents, according to their parents' perceptions?

2. Materials and Methods

2.1. Study Sample

The sample consisted of 88 parents of highly-profoundly gifted children aged 4–13 years. The inclusion criteria stated that the participants must have the following:

a. Resided in the United States or Belgium;
b. Have a child who has been identified as highly or profoundly gifted via the Wechsler Intelligence Scale for Children, Fifth Edition (WISC-V) or other similar qualifying report;

c. Submitted child's qualifying report for the verification of a full-scale intelligence quotient (IQ) or general ability index (GAI) of 140 or greater.

The study was advertised via flyers and distributed across a diverse group of organizations, online groups, podcasts, social media channels, and professionals serving gifted and highly-profoundly gifted children. Participants self-selected participation. Characteristics of the sample are displayed in Table 1. Amongst the parents, 80 (91%) were mothers and 62 (70%) were from the U.S. Of the 88 highly-profoundly gifted children, 72% were boys, and the average age was 8.9 (SD = 2.28).

Table 1. Characteristics of the sample.

4–13 Years	United States	Belgium	Total
males	49	14	63 (72%)
females	13	12	25 (28%)
Total	62 (70%)	26 (30%)	88 (100%)

2.2. Measures

The current study employed a mixed-methods cohort study design to address the research questions. The Overexcitabilities Questionnaire II, Adapted, was used to assess the prevalence of emotional, imaginational, intellectual, psychomotor, and sensual overexcitabilities. Concurrently, the Development and Family History Questionnaire was used to obtain developmental milestones and to assess sensitivities, intensities, and awareness. The semi-structured interview was used to assess the prevalence of emotional, imaginational, intellectual, psychomotor, and sensual overexcitabilities in the developmental milestones and life experiences.

2.2.1. Overexcitability Questionnaire II, Adapted (OEQ II, Adapted)

The original OEQ II instrument consisted of 50 items, expressing the five types of overexcitabilities [37]. Each form of overexcitability was represented with 10 items. Parents completed the questionnaire, responding to each item as it pertained to their child. Accordingly, items were modified to reflect the parents' perspective. For example, "I's" (e.g., I can take difficult concepts and translate them into something more understandable) were rewritten to be "my child" (e.g., my child can take an abstract idea or difficult concept and understand it in a simpler form). The five-point scale (1 = not at all like me, 2 = not much like me, 3 = somewhat like me, 4 = a lot like me, 5 = very much like me) was re-worded as 1 = none of the time, 2 = not much of the time, 3 = some of the time, 4 = a lot of the time, 5 = most of the time. Higher scores indicated a higher level of overexcitability. An OE score of 3.5 or higher indicated that the OE was experienced a lot of the time or most of the time according to the scale. A score of 3.5 aligned with the OEQ II manual [36]. Gallagher [12] also used 3.5 as the threshold for a "high" OE.

Additional modifications included adding examples to some of the original items to provide developmentally appropriate examples for the age range. For example, in the original OEQ II, item 25 reads, Theories get my mind going. In the adapted version, item 25 reads, Theories, possibilities, or poetic language can get my child's mind going. Similarly, some of the items on the original OEQ II only provided an externally expressed example of the behavior. Dabrowski [3] stated that overexcitabilities are expressed in both internal and external forms. Therefore, to capture both internal and external expressions of the behaviors of overexcitabilities, examples of both were incorporated into the items on the questionnaire.

Dexter Amend was consulted, and his suggestions were incorporated into the research instrument. Amend worked directly with Dabrowski as his graduate student [38]. Amend recommended that the items be written as the parent would speak. He also was in favor of the additional examples and remarked that Dabrowski hoped others would continue to expand upon his work. Additional sample items from the adapted OEQ II and the

corresponding overexcitability can be found in Table 2. Approval was received from Frank Falk, creator of the OEQ II, to modify the original instrument and to translate the modified instrument to Dutch (See Supplementary Materials S1: OEQ II, Adapted). For validation, the Dutch version was translated back by a separate, independent service.

Table 2. Sample items—OEQ II, Adapted.

Five Forms of Overexcitability	Sample Item
Emotional Overexcitability	#11. My child feels compassionate when they perceive someone to be lonely, mistreated, or in need of help.
	#26. My child intensely experiences feelings such as joy, anger, excitement, and despair.
	#31. My child is acutely aware of people and what's going on in their environment.
Intellectual Overexcitability	#16. My child questions or contemplates everything—how things work, what things mean, why things are the way they are, and/or self-educates.
	#19. My child is able to see relationships or possibilities or to form something new by putting together a number of pieces.
	#23. My child observes, perceives, analyzes everything.
Imaginational Overexcitability	#4. My child has a pretend/imaginary world that can be very real to them.
	#33. My child enjoys believing that dolls, stuffed animals, or the characters in books are alive and have feelings.
	#34. My child has reported, or it has been observed, that words and sounds create vivid images in their mind.
Psychomotor Overexcitability	#10. My child tends to be moving, or physically doing something (such as walking, pacing, bouncing a basketball) or more subtle movements (such as tapping hands or feet, or picking body parts) especially when in deep concentration/contemplation.
	#29. My child feels like they need to move or physically engage.
	#50. My child thrives on intense physical activity (fast games or sports) or intense mental stimulation.
Sensual Overexcitability	#8. Viewing something my child finds amazing is a totally absorbing experience for them.
	#27. My child feels music and/or other pleasing, or displeasing sounds, such as an alarm, throughout their body.
	#45. My child enjoys the aesthetics of colors, shapes, designs.

The Cronbach alpha scores were satisfactory, and they are as follows: emotional OE: 7 items, alpha = 0.809; imaginational OE: 7 items, alpha = 0.857; intellectual OE: 7 items, alpha = 0.771; psychomotor OE: 7 items, alpha = 0.856; sensual OE: 10 items, alpha = 0.847. The total Cronbach alpha score was 0.91. The psychometric qualities of the instrument were calculated from the sample and the analyses used.

2.2.2. Development and Family History Questionnaire

The Development and Family History Questionnaire consisted of 57 items. A version was translated into Dutch for the Belgian study participants. The items included Likert scale items and open-ended questions, which offered the opportunity to describe and give examples. The questionnaire was a newly developed instrument created for a parent to complete about their child. As such, no validity measures have been reported. The questionnaire aimed to consider developmental traits, including sensitivities, intensities, and awareness exhibited by the child, at different stages of the child's development, beginning at birth. Parents responded to questions about their child such as, my child slept. . ., my child interacted with others. . ., my child is sensory sensitive, intense, and/or aware.

Parents responded on a six-point Likert scale ranging from not at all to much more than their same-aged peers or not sure. Open-ended questions also allowed study participants to provide additional information, including the child's family history. The onset of devel-

opmental milestones, such as, my child crawled, my child walked, my child recognized numbers, my child began reading, was collected in months.

2.2.3. Interview Protocol

Semi-structured interviews were conducted with parents. The original Overexcitability Questionnaire I open-response questions [39] and Laycraft's [40] interview questions were considered in the development of the interview questions. The participants received the interview questions prior to the interview. The interview was guided by questions that aimed to elicit perspectives on the child's social, emotional, physical, cognitive, and altruistic development and life experiences. The developmental potential of the child was also explored, including the physiology and genetic make-up, social–environmental influences, autonomous forces, overexcitabilities, and special abilities and talents. Narrative and thematic analysis was employed to consider the prevalence of overexcitabilities according to the parents' descriptions and stories of their children's behaviors, development, and life experiences.

2.3. Data Collection

The study went through Institutional Review Board (IRB) approval in the United States and Ethical Committee approval in Belgium. Upon seeing a flyer, participants emailed the research team. They were then given a consent form to review and sign. Subsequently, the parents completed a 60–90 min semi-structured interview via Zoom. The questionnaire was then emailed to the participating parent, who was instructed to complete the questionnaire and return it via email within two weeks of the interview.

2.4. Analysis

Descriptive statistics including means and standard deviations were gathered for the five forms of overexcitability from the OEQ II, Adapted (emotional OE, imaginational OE, intellectual OE, psychomotor OE, sensual OE). Overexcitability scores were calculated as the mean scores for each form. Mean scores were then compared by gender, country, and age. T-tests were used to determine any significant differences. Descriptive statistics of the scales are presented.

OE profiles were determined based on each child's OE score. Only "high" OE scores (3.5 or greater) were included in the profile. A crosstabulation was used to indicate the high OE profiles by gender. A chi-square test of independence was performed to examine the relationship between gender and the "high" OE scores. Mean scores were gathered for the onset of developmental milestones from the Development and Family History Questionnaire.

The interviews were audio recorded and transcribed. The transcripts were individually reviewed for accuracy, and identifying information was retracted. The data were coded using thematic analysis via NVivo and Microsoft EXCEL [40]. The thematic analysis was grounded by Dabrowski's [2,3] descriptions of the five forms of overexcitability from his human development theory, the theory of positive disintegration. Specific codes included each of the five overexcitabilities.

Because the thematic analysis was grounded in Dabrowski's human development theory, a second round of thematic analysis, focused on the five forms of overexcitability in the developmental potential of the children and adolescents. The researchers re-examined the coded overexcitabilities and categorized the overexcitabilities within the narrative data specific to the child's family history and genetics; social and environmental influences; autonomous forces; special abilities and talents. The intercoder reliability included two coders, previous coding experience, weekly dialogues, and a consensus [41,42].

3. Results

3.1. Quantitative

3.1.1. Descriptive and Inferential Statistics

The most prevalent OEQ II, Adapted, OE profile was a high occurrence of all five forms of overexcitability. A total of 24 children (9 girls, 36%, 15 boys, 24%) exhibited a high occurrence of all five overexcitabilities. A total of 22 children (25%) exhibited a high occurrence of four overexcitabilities. A total of 21 children (24%) exhibited a high occurrence of three overexcitabilities. Overall, 76% of the highly-profoundly gifted children studied exhibited a high occurrence of three or more overexcitabilities according to the OEQ II, Adapted.

A chi-square test of independence found no significant differences in high overexcitability scores between the boys and the girls. All *p*-values for all five forms of overexcitability were greater than 0.05. The most prevalent, universal "high" overexcitabilities among the highly-profoundly gifted children and adolescents were intellectual (86%) and emotional (82%) overexcitabilities (Table 3).

Table 3. Chi-square results for overexcitability scores equal to or above threshold (3.5) by gender.

	n (%)	Boys	Girls	X^2	df	*p*
INT OE	76 (86.4%)	54	22	0.079	1	>0.05
MOT OE	57 (64.8%)	40	17	0.778	1	>0.05
SEN OE	61 (69.3%)	41	20	0.690	1	>0.05
EMO OE	72 (81.8%)	51	21	0.171	1	>0.05
IMA OE	37 (42%)	25	12	0.079	1	>0.05

The mean overexcitability scores, ranging from 3.84–4.22, demonstrated a high prevalence of emotional, intellectual, psychomotor, and sensual overexcitabilities. Imaginational overexcitability (3.21) was the only overexcitability that fell below the 3.5 threshold for "high" (Table 4). Parents reported higher mean scores for emotional OE and imaginational OE amongst girls. The mean score for emotional OE was 4.0 (SD = 0.63) among girls and 4.02 (SD = 0.70) among boys ($t(86) = -2.311$, $p < 0.05$, d = 0.68), with a medium effect size. The mean score for imaginational OE was 3.47 (SD = 0.97) among girls and 3.10 (SD = 1.01) among boys ($t(86) = -1.554$, $p = 0.062$, d = 0.99), with a large effect size. There was no significant difference in intellectual, sensual, and psychomotor overexcitability between the girls and the boys. The children from Belgium had a significantly higher emotional overexcitability score (4.38, SD = 0.68) than children in the U.S. (4.02, SD = 0.68,) ($t(86) = -2.288$, $p < 0.05$, d = 0.68), with a medium effect size (Table 5). All ages (4–13 years) scored high on three or more overexcitabilities.

Table 4. Descriptive statistics—OEQ II, Adapted, overexcitability mean score and standard deviation.

	N	Mean	Std. Deviation
Intellectual OE	88	4.22	0.67
Psychomotor OE	86	3.84	0.85
Sensual OE	85	3.90	0.73
Emotional OE	88	4.13	0.70
Imaginational OE	88	3.21	1.01
Total	88	3.87	0.53

Table 5. Descriptive Statistics—OEQ II, Adapted, overexcitability mean score, standard deviation, and *p*-value *t*-test by gender and by country.

Overexcitability	Boys	Girls		Belgium	US	
	M (SD)	M (SD)	*p*-Value	M (SD)	M (SD)	*p*-Value
Intellectual	4.27 (0.69)	4.11 (0.60)	0.158	4.09 (0.57)	4.28 (0.70)	0.122
Psychomotor	3.82 (0.86)	3.87 (0.84)	0.415	3.89 (0.89)	3.82 (0.84)	0.354
Sensual	3.84 (0.76)	4.04 (0.64)	0.130	3.97 (0.86)	3.87 (0.67)	0.273
Emotional	4.02 (0.70)	4.39 (0.63)	0.012 *	4.38 (0.68)	4.02 (0.68)	0.012 *
Imaginational	3.10 (1.01)	3.47 (0.97)	0.062	3.04 (0.92)	3.28 (1.04)	0.157

Note: * stands for $p < 0.05$.

3.1.2. Development and Family History Questionnaire—Milestones

Among the group of highly-profoundly gifted children, on average, the children crawled at 5.2 months and walked at 11.9 months. The children spoke words at 8.2 months, recognized numbers at 12.2 months, and recognized letters at 19.4 months. The children began speaking in sentences at 26.5 months (2 years, 2.5 months), began reading at 42.5 months (3 years, 6.5 months), and began reading books at 45.6 months (3 years, 9.6 months) (Table 6).

Table 6. Development and Family History Questionnaire—Milestones.

	Number of Responses	Mean (Months)
Crawled	77	5.2
Walked	84	11.9
Recognized letters	55	19.4
Recognized numbers	49	12.2
Spoke words	73	8.2
Spoke in sentences	65	26.5
Began reading	72	42.5
Began reading books	64	45.6

3.2. Qualitative

The qualitative results include the following: (1) the thematic analysis of the five forms of overexcitability in the children's holistic development and life experiences; (2) the thematic analysis of overexcitabilities in the children's developmental potential; and (3) the thematic synthesis of overexcitabilities in the holistic development and developmental potential of one highly-profoundly gifted child from infancy.

3.2.1. Thematic Analysis of Overexcitabilities in Holistic Development and Life Experiences

Higher-Level Emotional OE, Higher-Level Intellectual OE, and Higher-Level Imaginational OE

The thematic analysis coding of emotional, intellectual, imaginational, psychomotor, and sensual overexcitabilities found that 99% (87 out of 88) of the interviews were coded for three or more overexcitabilities, including emotional, intellectual, and imaginational overexcitabilities. Moreover, these combinations of overexcitabilities were coded as occurring together. Examples from the interviews of higher-level emotional OE, higher-level intellectual OE, and higher-level imaginational OE occurring together can be found in Tables 7–9. For instance,

Table 7. Higher-level emotional overexcitability (3+ overexcitabilities occurring together)—examples from interviews.

Emotional OE
When my child was four, they were sobbing when I was putting them in bed, and I was like, why are you crying? And they're like, because there are people in our city who don't have beds, and why would anybody walk by a person who doesn't have a bed and not ask him to come stay at their house and sleep in a bed. We have beds, why don't we let them, can we go get some of these people who are homeless so they can sleep in our beds? I'll sleep with you. And they can sleep in my bed.
Natural science has been an interest since my child was really tiny. They are really connected with nature and in a pretty intense way. We started clearing some of these invasive bushes and they just cried for hours. It just felt like you'd ripped an arm off of them. And, I don't know, they just really love them. I don't know if it's they're sensing an energy from them, or they think of them as exceptionally beautiful. By the time they were four, they knew every species of tree in the world, every kind of Hosta that they'd ever seen. They knew how to identify nearly every plant in the world, that was in a book that they had or that they'd seen. We took them to a botanical garden. . .they almost hyperventilated, they were so excited.
We can't go to the movies with my child. When they were three and a half, we went to the movie for the first time, it was Finding Dory. They were crying the whole time because Dori lost her parents. And they were really, one and a half hours crying because they felt what the fish on the screen felt. Then after two months, we went again to see the same movie, we thought maybe they know the story. They know it's a happy ending. But again, it happened.
It'll start with something, like chess, or a silly little comedy thing that my child wants to do. And then it always, comes back to this overarching thing of, this is what we need to do, as a planet. This is what we need to do to connect with each other. And this is how we can be the best version of us. Just really, really funny little monologues or tangents that they go off on, related to just this larger concept of altruism essentially or just doing good. Their voice will change, and he will get very serious, and their mannerisms change. And they're like, talking, talking with heart. Their voice gets a little bit lower. And they're very impassioned with how they move their hands and their gestures. They're very much trying to impart the significance of it. They go from flailing around, just being a goofy six-year-old, to I have this really important message for you.
My child is always very, very, motion, very lively, very emotional. What they like is to tell stories in a fantasy world. They like to play out all the stories in their mind. Mostly also by running around the house. They need to move. They can't sit quiet. They cannot sit still. They have one fantasy story; they were three years old when they started the story. And they needed that story to go to school. Because they were not happy at that school. So that's how it started and now the story has evolved. They try to basically deal with the actualities, the current events in life; to deal with them through those stories.

Table 8. Higher-level intellectual overexcitability (3+ overexcitabilities occurring together)—examples from interviews.

Intellectual OE
They taught themself to read when they were three. They would literally sit for hours doing workbooks and reading books. They're sitting immersed, or they are constantly talking and moving, and there's nothing in between.
The child never stops moving. They actually solve more problems pacing around the house and focused in their head.
They're always talking. When you don't stop them, they're always telling some theories and everything they like.
More than one coach has said, they have a really high basketball IQ. They know where they should and should not be on the court in relationship to their teammates and other players. And that's what also helps them be successful.
When I mentioned, football, my child's love of it, is not just watching it, it is keeping track of the latest, trades, or historical records, the historical information, historical games, and all that. So, they get very, energized, and obsessed. A lot of their focus and time can be allocated towards that. They sometimes get distracted, and then gets frustrated if we redirect them because they're focusing on football. Their voice gets very loud when they talk. They definitely get much more energized by it. When they're physically playing it, they get lots of adrenaline. And this is just throwing it back and forth with other children. They'll take their hand flat, put it up against their chest and slap their own chest for this barbaric way of energizing themself. And they're very rule and fair driven. So, they often can get frustrated when in their world, the other children don't follow the parameters or the rules.
I will sit in the kitchen while my child is working on stuff, they don't physically like to be alone. In fact, they really hate it. When they're engaged, they are into it. They're excited. They'll get to talking fast. They tend to start and get excited about one aspect of whatever the thing is they're doing, and then they might go down a rabbit hole with that thing.
My child has composed music and written it down. Their teacher encouraged them to write music for their last assignment and they went all out. Their teacher just asked for a melody, and they wrote the whole thing with an accompaniment, that they wanted me to play with it, and they wrote lyrics to it, and it was in Spanish. They performed it at recital.
My child might not be saying much, but I can tell through their eyes that they're thinking deeply. And if it's bedtime, then they'll be up a while after not sleeping, just thinking more about it just kind of lying in bed. But if their active, during the daytime, they'll be very much scribbling furiously like writing something out or creating some sort of spreadsheet table or drawing pictures, whether it's on a whiteboard or on paper. And the sheets start adding up, and they'll staple it into a book. They have a happy effect when that's going on and they're probably singing along. Their voice is excited. Very focused on what they're working, extremely focused, like everything else around them is kind of closed off. They have a very single-minded focus to it.

Table 9. Higher-level imaginational overexcitability (3+ overexcitabilities occurring together)—examples from interviews.

Imaginational OE
My child's imagination is on 24/7. They don't stop talking. From the moment they wake up to the moment they go to sleep something is going on in their brain. It's almost like a light switch.
With the war in Ukraine, my child was saying, "we should have people who are looking over the world, but the world is a globe and that's very difficult. But maybe if we transfer it to a cube, then you can have six different sides (sides of the cube). And, if you would have one guard on each side, and then transfer it back to the globe, then you have the whole world guarded and the whole world is safe." They are thinking in their head all of these constructions.
My child has their own way of figuring out how numbers add up. Like, if it was 14 times 12, they are immediately thinking 12 times 12 plus two times 12. And two times 12 is the same as two times 10 plus two, plus two. They do it all in their head very quickly.
My child is making an RPG (role-playing game) which is sort of inspired by a bunch of different games that they like to play. They created the board with rooms, and they made dice out of clay. They made monsters that go in each room and characters that you move around the board. They made little cards with the stats for each monster that you have to fight, and stats for their health and their different kinds of weapons, and abilities that these characters have based on their cards, and the very detailed rules for what you have to do. They were extremely excited about it.
My child has always been very tactile and visual. They have to touch things and they like to break apart toys and put them back together. We have several engineering sets, because they love to put the things together and take them apart and put them together again. And they do the same thing with games. So, they'll play an educational game, and (the teachers) want them to go through a certain process. So, they'll go through that process the first time, the way that (the teachers) want them to and then they go through that same game, and they do it "wrong" on purpose; all the different "wrong" ways , to see what happens to that game. Like, what happens when I do it this way, or if I do it that way. And they find these back loops into these games. And they're like, I don't want to do it the way (the teachers) are trying to force me to do it.
My child really feels so at home, running through the woods, imagining whatever they're imagining. They like to think there's fairies in the trees, even though they know they are made up. They'll look for fairy houses, they'll have an imagination about a fox that maybe lives here, or maybe even a bear might be nearby. It opens a whole imagination that they don't usually have at home, about those scenarios. And so, I think it's almost like, for them, stepping into another reality. And it's very, relaxing. We don't have a specific, we wander, we don't necessarily always do a hike of a certain distance or a certain trail. I think, they feel really free and safe. And so, they look forward to that.

> "They feel the weight of the world and they do say that like that. Their emotions are very, very deep for them. It can be very big and heavy. They can get very emotional into being treated incorrectly. Sometimes there is a task they have to do for school, some homework, and in their observation, the question is open for more than one possible answer. But the way the teacher looks at this, and most of the other children, there is just one right answer. But for my kids, they do sometimes see more possible answers. And when the teacher marks them wrong and it is not the right answer, they both can get very, very into it. They can both feel very punished, criticized. I feel then that they are wrong, but most times they are not wrong. The possibilities they see are just as correct as the possibility that the teacher is seeing."

Psychomotor and Sensual OE

In addition to the strong presence of the higher-level emotional, intellectual, and imaginational overexcitabilities coded in the interviews, psychomotor and sensual overexcitabilities were also coded and highly present (see Tables 10 and 11). Psychomotor and sensual overexcitabilities were found in combination with higher-level emotional OEs, intellectual OEs, and/or imaginational OEs. Descriptions verbatim from the parents are being included to provide contextual examples of what psychomotor and/or sensual overexcitabilities look like in highly-profoundly gifted children when they are found in combination with higher-level emotional, intellectual, and imaginational overexcitabilities. For example,

> "If we go for a walk, and they are telling you what they are doing, they jump, and kind of spin in a circle when they get excited. And we often have to pull them out of the way of telephone poles or things like that because they're so into telling you what they're telling you. They like to come up with character backstories and stuff, and they'll be like, and then, and we can do this, and then they can do this, and then we could do this. It gets higher and higher and faster and faster. And then they'll spin at the end of it. Then they are usually jumping and spinning

because they're thinking. If they are not telling you it, they start thinking about it. You can tell when they're still thinking because they'll just spin, spin, spin, and then they'll stop, and they'll jump as they talk to you. . . And they would be like, did you know that five times 1,284 is whatever that number is? They would be able to tell you the answer to that. . . and then they would spin again. And then they would stop. And they'd be like, and if you doubled it. . . It is completely connected to their thinking."

"When cubing, they are so zeroed in that it's like the whole world doesn't exist anymore. They have a goal, and they will not stop until they reach that goal. . . I've literally watched them cube for four to five hours straight with no breaks. And I have to tell them to take a break. They've sprained their hands cubing. The entire world disappears, they can't hear anything. You could be standing two inches away from their ears, and you just don't exist. They are completely focused on what they are doing and studying how to improve and learning new algorithms. . . Every day, they're learning new algorithms to see if this other algorithm is better than the previous one, they're using. It's all math. So, when they are engrossed in this, the world doesn't exist. They don't need to sleep. They don't like to sleep. They don't want to eat. It's almost like I have to wake them up in a sense. You have to go to the bathroom, you need to eat, and we always eat as a family and for dinner, that's non-negotiable. And they're cubing underneath the dining room table. They have gotten in trouble at school many times because the cubes make a sound. So, they bought a special lubricant so that they can cube in their classroom and not make a sound. It's like full engrossment. It's like they're in their own little world. And as long as they are together. . .it seems to be not as intense. But if they are not together. . .it seems harder to really get their attention if we need to talk to them. They are very happy."

"They really wanted to be in the (toy) car. They had this whole world where we would all have our own cars to shrink down into. And then we had to watch out for the cats. And there are certain obstacles that we would have to overcome being in this small world with these cars. There was this whole scenario. And then it was like, every 15 min, "I wish, why can't I just be small?" It was just this, longing. It was torture for them. And then they were imagining; they were running around the house, going vrrrr (sound) and then like shrinking down. I could almost see what they were doing. They were pretending that it was happening."

"They have an extreme sense of justice. And when that's being threatened, they can get really, extremely angry. You see, like fire coming from their eyes. It's really a very strong emotion. For example, in their music lessons, with another child, the teacher was always angry at the other child in the lesson because the other child didn't practice. And my child didn't feel well about it because they felt it was unfair that the teacher was always angry at the other child. The teacher wasn't angry at my child, but they really didn't like the atmosphere and didn't like that it was unfair. So even though my child was not affected (the teacher was not angry at my child), they still took it home."

"When they were two years old was the first time, they saw a piano. They had never seen one before. . . We were visiting someone, and they sat down to it and started playing music. . . They were starting to try to play by ear (a well-known theme song)."

"Like, my other child wiring up a device, they take the more interesting route, physically. So, if they are just going from my porch to the sidewalk, they are trying to do something called a box jump over the steps. How many steps can I get, and then I'm going to scramble over the rock, and then I'm going to turn around and do this other thing. It's like, there is this similarity, but it comes across

through their movement activity, rather than in a more traditionally intellectual pursuit. They do a 'sensory diet,' like Parkour, for themselves 24/7. . . They made up this game where they're running and then jumping. . . in a certain way. . . And then I give them a score. . .based on how well they jump in their lane. They're constantly bringing in scoring metrics to all these little physical activities."

"It may sound strange, but playing music also has a physical part. And they are a really fast learner. They got very fast how to move their hands and fingers, and the position of their arm. From the moment they see it, and learn it, they don't forget it. It's just there. They won't forget it. It is as if they don't make any effort to recall and reproduce what is just learned physically. It's there. When they play music, they also invent new exercises. When they feel something is difficult, they are very aware which part of the exercise is difficult, and then they just invent. It's a kind of consciousness that typically a musician develops at the end of their learning journey, in the last years, but they just do it."

Table 10. Psychomotor OE (secondary overexcitability) combined with primary OEs—examples from interviews.

Psychomotor OE
When my child was four months, they would lay on their back, push their head up towards the ceiling and scoot themselves backwards all around the house. They were rolling over at three months. They could roll to whatever they wanted. If they wanted a toy, they would scoot or roll to it.
My child doesn't really need to sleep. They can, wake up and just do stuff unless they're sick. My child said, their body constantly needs to be in motion. And they said, they love their tics, because they make them feel good. They change all the time. It was eye blinking. Sometimes my child pounds their chest or jerks their head around. They hop around. The whole body. The tics change constantly. And verbal tics too like, noise.
We have a rocker board. They pull that out, and they'll get on it and want to converse with you about their questions, while they're rocking back and forth on the rocker board.
When we go walking in the forest, my child is always, behind on their own holding a stick or something. And then you can see them becoming like really Zen. They are getting into their fantasy, but a really Zen fantasy. And when they were younger, they would also make a noise and they were meditating. They were doing their tongue from the left side of their mouth to the right side of their mouth (meditation sound). And they were walking like that the whole time in the forest behind us. They were having their own nature experience. I do feel that it's a good environment for them to relax. Very obvious.

Table 11. Sensual OE (secondary overexcitability) combined with primary OEs—examples from interviews.

Sensual OE
My child would cry at music class because the song was in a minor key. They just didn't like those songs. I think the emotions are so strong, that they need to grow into them a little bit. But they're too strong for them right now.
After my child's (medical procedure) I asked, "What do you want now? You can choose whatever you want. And they said, "I just want to go to a flower shop and buy a flower because I love the smell and I know I will be happy again when I smell this." They were four years old.
There's not a single day that goes by without music. It's always music. And my child is very sensitive to music as well. They could get really upset quickly from listening to certain music. So, they have certain songs. And if the song starts, five seconds into the song, they recognize the song and they go, "Dad, put it off, I'm going to cry, put it off." They had that more often when they were not feeling that, well, but they still have specific songs that we cannot turn on. Otherwise, my child says that they are going to cry. And they have that with movies as well, with certain scenes. My child would cry their heart out, like a real person died or something.
My child covers their ears when they hear too much noise. When they were younger, we had a little parade here in the streets. And they were very afraid, but the moment I gave them the headphones, I had a different child. They were clapping and dancing along with the music. An entirely different child. Before that was plain panic. And if my child could, they would probably have crawled back inside me. They clung to me and buried their face in my stomach and cried as well. But when you give them the headphones, they watch, they dance along with the music, they clap their hands, they laugh. They are completely different. It's like two persons.
Anytime something's too much for my child or they're trying to process something, they put their fingers in their ears. So, if they're really trying to think through something or if all of a sudden, they're doing something and (someone) runs into the room, but they want to stay focused, they stick their fingers in their ears. My child is so sensitive to sound. They'll do that if some place is really noisy, or if it's just loud, or there's a sudden sound. But I also notice, they also do it when they want to prompt themselves to stay on focus, of whatever it is they were doing, and not come off of it yet. Their cue is their fingers up to their ear even if it's not necessarily loud, or noisy, or a sudden sound.

Table 11. *Cont.*

Sensual OE
My child has nightmares, that have a sensory component. . .
My child started sailing because it's quite relaxing without a lot of external sensations. It's sitting alone on the boat, enjoying the wind, understanding how it works, and making the wind work for you. When my child is on the water, and they're only, with two boats, and the wind, they're at ease. They are relaxed and they are so happy then. And that's something that they really described as being so so so much fun. Because it was calming for them. Those were their words.

3.2.2. Thematic Analysis of Overexcitabilities in Developmental Potential

The second round of thematic analysis found the prevalence of overexcitabilities in the children's family history, social and environmental influences, autonomous forces, and special abilities and talents. The researchers found the narratives specific to the social–environmental influences of the child to be the greatest source of data from the interviews. The overarching findings specific to overexcitabilities and the developmental potential of the children are summarized; however, additional analysis could uncover additional findings.

A family history of giftedness was indicated by 73/82 respondents (89%), when considering siblings, parents, and grandparents. Nine (11%) of the study respondents remarked "unknown," "suspected," or "not identified/tested." In the current study, 11 parents participated on behalf of more than one of their children.

In the semi-structured interviews, overexcitabilities, with respect to the social–environmental influences, were the most prevalent when coding the developmental potential of the child. Two narrative examples from the interviews can be found below. The first example describes the presence of overexcitabilities in the child and the differences observed by the parent when the child was surrounded by like-minded peers and mentors. The second example describes the differences the parent observed in the presentation of overexcitabilities in their child before entering kindergarten and while attending kindergarten. The first example is as follows:

> "It's like 100 ideas a minute that they are expressing to each other. And their head is full of this game. In those moments, they will not be a sloth which they usually are. They will not be so zoned out and zombie like. But it's not like they're actually jumping around, in their head they are, but not physically. They have so many ideas in a minute. When they're playing this special Lego game, they're in the habit of changing subjects all the time. Then, expressing all the time what these figures are and what they are supposed to do. And it's kind of a ping pong game. It feels like there's some kind of a neural storm going on at that moment. And it's connecting with the same type of neural storm from their sibling. And then their ideas are connecting. They seem to be fully switched 'on.' And then you see the power of what's in that little brain because the creativity that comes out is enormous. It's really staggering to witness this, to see where they're going and how strange that game becomes. But it's rare that we see it. In other situations, the spark goes 'on,' the spark is there, and it happens at times, but it has become more rare. For example, when my child is talking to their (passion mentor), there's not an ounce of slowness or sloth in that body. My child is fully engaged. My child is active. My child is 'on.' Usually, they are on snooze. It's pretty rare because day-to-day, which is just going to school, it doesn't happen there. It doesn't happen at school, but it doesn't happen at home either."

The second example is as follows:

> "When my child was in their kindergarten class, and their teacher would check, not what was the extent of their abilities and their knowledge, but can you identify what I want you to identify right now. Do you know the letter A? Do you know the letter B? And of course, they would get that correct. But really, they wanted to be reading second and third-grade books or give me a chapter book. And the teacher really had no idea. And we kept challenging the teacher

> to challenge them. And that really wasn't happening. And we began to see this child who we always noted, just had this sense of awe and wonder of everything about them. They would see flowers on the neighbor's front porch and would stop and just sigh and say, aah, 'look at how beautiful that is.' And they would just take it in. And that same little child began to show signs of depression while in kindergarten, and they didn't want to get out of bed. And they said, 'I don't want to go to school.' And they would stay in their bed. And it was the saddest situation. And they once said to me, 'Mom, I feel like life is brown like a bowling ball.' And, they chose that description on their own of like weightiness and the kind of murkiness they felt inside. And as we began having them tested for giftedness, not his classroom teacher, but the district's gifted coordinator, said, let's check. And as soon as we went down this pathway of having them take the tests, the tests themselves created for them, such a satisfying experience, mentally, that they came out of these long, difficult tests of their IQ and said, 'Oh, mommy that felt white like water.' And they immediately felt a difference in their spirit. And it was the most profound moment, for me as a parent, knowing there's something inside of my child, that because my child is of such a calm demeanor, we didn't notice before."

Autonomous forces, including the third factor, and higher-level overexcitabilities leading to the formation of developmental dynamisms were evident and coded in the interviews. Examples of autonomous forces, the third factor, and dynamisms are discussed further in the discussion section. A representation of the developmental influence of autonomous forces can be seen in the thematic synthesis below.

Overexcitabilities in the special abilities and talents of the children were acknowledged and coded in the narratives of the interviews. The special abilities and talents in relationship to overexcitabilities can be seen in the context of the interview narratives, which are included. Special abilities and talents ranged from the early awareness of pattern recognition and self-education to self-driven compassion and empathy that motivated a response.

3.2.3. Thematic Synthesis: Prevalence of Overexcitabilities in the Development and Developmental Potential of One Highly-Profoundly Gifted Child

Development

Early milestones: crawled at 5 months; walked at 11 months; recognized letters and numbers at 18 months; spoke words at 8 months; sang in sentences and spoke in three-word sentences at 24 months; began reading at age 2 years, 6 months.
Combinations of EMO OE, INT OE, IMA OE, MOT OE, SEN OE.
Other observations: emotionally sensitive to sound (EMO OE, SEN OE); sensitive to smell, sound, texture, and textile (SEN OE); often figured out things without instructions (EMO OE, INT OE, IMA OE); would read for hours (EMO OE, INT OE, IMA OE); could do math for three hours straight (EMO OE, INT OE, IMA OE); all self-engaged (Third Factor).

> "When they are doing math problems, they are very focused, and they don't like sound or people interrupting. I think, by far the activity they enjoy the most would be math. So, when they are really focused, it's like, anything that surrounds them kind of just disappears"(EMO OE, INT OE, IMA OE, MOT OE? SEN OE).

Developmental Potential

Family history: sibling identified as gifted; similar early developmental milestones; immediate and extended family history of giftedness.
Combinations of EMO OE, INT OE, IMA OE, MOT OE, SEN OE.
Social–environmental influences: homeschool, homeschool group, family (like-minded peers and mentors; family history of giftedness).

Autonomous forces: natural problem solver, self-starter, self-engaged, self-educated, taught themselves math, taught themself how to read (EMO OE, INT OE, IMA OE, Third Factor).
Higher-level overexcitabilities: Combinations of higher-level emotional, intellectual, imaginational, psychomotor, sensual overexcitabilities evident. The formation of developmental dynamisms included the following:
The third factor—naturally following (whatever activity engaged in); one thing that really stands out, very goal oriented; will set a goal and will work on it; plans everything out and does not like plan to be interrupted.
Disquietude with oneself; dissatisfaction with oneself; feelings of inferiority; feelings of embarrassment, shame, guilt; self-education.
Special abilities and talents: Math and music.

> "When the teacher was trying to teach music theory, (the teacher) asked me, did they learn music theory before? I said, no. The teacher was like, oh so maybe, it was pre-downloaded to their brain or something because they already knew it; it's very easy for them to just look at the notes and the music and to know how to play it without learning really" (EMO OE, INT OE, IMA OE, MOT OE).

4. Discussion

This study found a distinctly high, universal prevalence of all five forms of overexcitability—emotional, imaginational, intellectual, psychomotor, and sensual—in the group of highly-profoundly gifted children ages 4–13 years. The distinct overexcitability findings among the highly-profoundly gifted children included the following:

1. A universal high prevalence of all five forms of overexcitability—the most prevalent high OE profile;
2. No significant differences by gender—when considering high OEs;
3. Higher-level overexcitabilities—three or more overexcitabilities acting together, including emotional, imaginational, and intellectual, and the formation of developmental dynamisms.

It is important to realize the role the interviews played in the authentic collection of data. In the interviews, study participants described multiple overexcitabilities together, allowing the prevalence of higher-level overexcitabilities and the beginning of the formation of developmental dynamisms to be realized. The presence of higher-level overexcitabilities would not have been captured without the interview method. This is because the OEQ II questionnaires were constructed to measure the five forms of overexcitability as individually expressed forms. The semi-structured interviews allowed for organic descriptions and life examples of the children's development from their parents. This semi-structured narrative approach gave the study participant the flexibility to *describe* their child rather than to *interpret* their child. Furthermore, parents may not realize the expressions of overexcitabilities in their children. Overexcitabilities may be occurring internally within the child and, therefore, be hard to discern. For example, one parent stated the following in the interview:

> "When they play with Legos, eyes are twinkling, nose is curling, they get totally into flow, becomes very creative, and thinks very out-of-the-box. I thought they didn't have that much of an imagination, but they said, 'yes, I do when I am reading and when I am playing with Legos'. They said themself, that they can really go into the story and into the new worlds."

The complexity of imaginational overexcitability was an unexpected finding. This study uncovered the need for more in-depth knowledge and training on the traits, behaviors, and development of imaginational overexcitabilities. Higher-level imaginational overexcitabilities include abstract, intuitive, and empathic behaviors and development [3]. Nearly all of the study participants described abstract, intuitive, and/or empathic behaviors in the development of their children; however, not all of the children's imaginational overexcitability score met the threshold for high imaginational overexcitability on the

questionnaire. Again, this could be due to the limitation of the instrument. The nature and behaviors of imaginational overexcitability may be difficult to represent as an individually expressed form.

4.1. Developmental Theoretical Framework

Dabrowski realized that higher-level imaginational overexcitability was complex and relied on higher-level emotional and intellectual overexcitabilities to develop [3,5]. Higher-level imaginational overexcitability includes the ability to acutely see and/or create the abstract; to connect and/or intuit; to visualize and/or create the future; to mentally picture and/or tangibly demonstrate how something *could be* [1,4–6,43]. Higher-level overexcitabilities include both internal and external responses and may be exhibited in the holistic development or developmental potential of the individual. Through the attuned ability to anticipate, higher-level imaginational overexcitability also plays a role in the ability to empathize [3]. Higher-level imaginational overexcitability allows the individual to feel what another person is feeling in multiple realms emotionally, intellectually, and physically. Laycraft [44] identified this ability as Mental Time Travel (MTT). Through episodic autobiographical memory (a neurological imprint of the individual's experience in a specific place and time), higher-level emotional and intellectual overexcitabilities combine with higher-level imaginational overexcitability and allow the individual to use their affective memory and perception to understand, anticipate, and experience an event [44].

4.1.1. Multi-Level Development

Dabrowski found this significantly greater-than-typical sensitivity, intensity, and awareness prevalent at higher-levels of development [2,3]. In his human development theory, the theory of positive disintegration, Dabrowski eliminated the focus on chronological age and the expectation of linear sequential development. Instead, Dabrowski viewed the individual as a unique being with unique social, emotional, physical, cognitive, and altruistic development and developmental potential. Through his observations and studies, he distinguished five levels of development. He referred to primary development as primary integration (Level I), followed by unilevel disintegration (Level II) [2,3,5].

4.1.2. Level III—Higher-Level Overexcitabilities

It was at Level III of development (spontaneous multi-level disintegration) where Dabrowski observed that behaviors and development became distinctly different [2,3]. In Level III, there is a transition from unilevel to multi-level development. Significantly greater-than-typical sensitivity, intensity, and awareness are evident. Multiple higher-level overexcitabilities interact together and further develop.

Dabrowski recognized that higher-level emotional overexcitability strongly influenced the other forms of higher-level overexcitabilities; and through continued development, higher-level overexcitabilities formed developmental dynamisms. Every dynamism includes higher-level emotional overexcitability [2,3]. The development of higher-level emotional, intellectual, and imaginational overexcitabilities (the primary overexcitabilities) gives rise to the formation of the third factor. The third factor of an individual's developmental potential is the first and most influential developmental dynamism to form. During development, an individual's attention turns inward, and the development of autonomy and self-awareness is ignited [2,3]. A distinctly high prevalence of all five forms of overexcitability and combinations of three or more overexcitabilities, including higher-level emotional, intellectual, and imaginational overexcitabilities, were found in the highly-profoundly gifted children studied.

Dabrowski distinguished between independent, lower-level overexcitabilities, and higher-level overexcitabilities. The greater complexity of higher-level imaginational overexcitability, the greater depth and persistence of higher-level intellectual overexcitability, and the greater passion and motivation of emotional overexcitability are the result of higher levels of development [2,3]. According to Dabrowski, lower-level overexcitabilities (one

or two overexcitabilities) may occur at Levels I and II of development. However, it is important to note that the display of one or two overexcitabilities is developmentally different from the interaction of three or more developing overexcitabilities. The distinctly different combination of three or more overexcitabilities (including emotional, intellectual, and imaginational) interacting together occur at higher levels of development, beginning at Level III [2,3]. Narrative examples of higher-level overexcitabilities from the interviews can be found in Tables 7–9.

Dabrowski's theoretical framework is important for understanding authentic human development and developmental potential. It is important for parents, teachers, school administrators, psychologists, and pediatricians working with or assessing the well-being of gifted children to know, understand, and be able to differentiate between independent overexcitabilities and the combinations of higher-level overexcitabilities. Higher-level overexcitabilities are an indicator of development in motion. They are holistic in nature. Higher-level overexcitabilities are combinations of multiple overexcitabilities interacting together to further the development of the individual. An independent overexcitability acting alone, such as psychomotor overexcitability, is a greater-than-typical response of the neuromuscular system alone.

4.1.3. Developmental Dynamisms

In Level III (spontaneous multi-level disintegration), higher-level forms of emotional, intellectual, and imaginational overexcitabilities, enhanced by psychomotor and/or sensual overexcitabilities, combine to begin to form developmental dynamisms [5]. Developmental dynamisms continue to develop in Level IV (organized multi-level integration). Dynamisms do not exist within developmental Levels I and II.

The formation of developmental dynamisms cannot be captured using the OEQ II. However, in the semi-structured interviews, examples of the beginning of the formation of developmental dynamisms were described in the narratives of the children's lived experiences. Developing dynamisms from the interviews included the following:

- The third factor—autonomous forces (self-development; an internal compass; a sense of direction or responsibility);
  Example: "They feel the weight of the world" (p. 10).
- Disquietude with oneself (self-criticism);
  Example: "Would listen to comparable pieces played by well-known pianists; they would compare the pieces to what they think they should be good at, which is the original recording. And get frustrated when they couldn't perform the way it is."
- Dissatisfaction with oneself (self-judgment, high expectations, frustration, perfectionism);
  Example: "Very, perfectionist; will practice a particular phrase many times; if they couldn't do it, right, the way they wanted it, they get frustrated; sometimes affects mood."
- Feelings of inferiority (self-awareness in relation to self-potential);
  Examples of thoughts of self-harm were evident in some of the interviews.
- Feelings of embarrassment, shame, guilt (self-conscious);
  Example: "If they did something wrong, they said, they would think, I'm stupid. They would feel upset and cry and just kept saying, I'm stupid."
- Self-education;
  Example: "Basically self-taught all the way; never been to school or had math instruction; have done really well on own; solves problems very original... Always does math own way. I don't know how they do it, they skip steps... I don't know how they put it together."
- Positive maladjustment (the connection to one's true values);
  Example: "They can get very emotional (when) being treated incorrectly..." (p. 10).
- Creativity (the propensity to see beyond, the desire for novelty, enhancements);
  Example: "They said that the ones you could buy at the store weren't good enough for

them. And so they started making their own with Lego pieces. Theirs did much better. And actually, they drew schematics and wanted me to send it to (the company) . . ."

- Subject-object in oneself (self-observation, self-evaluation);
  Example: "Oh, mommy that felt white like water" (p. 14).
- Education of oneself (self-directed development through one's own hierarchy of values);
  Example: . . . "they needed that story to go to school because they were not happy at that school. So that's how it started and now the story has evolved. They try to basically deal with the actualities, the current events in life; to deal with them through those stories almost" (p. 9).
- Empathy (deep sense of connection, care, compassion, and altruism) [5,43,44];
  Example: . . . "the teacher wasn't angry at my child, but they really didn't like the atmosphere and they didn't like that it was unfair. So even though my child was not affected (the teacher was not angry at my child), they still took it home" (p. 11).

Dynamisms are intuitive forces. They reorganize human development into instinctual, emotional, and cognitive forces [3,45,46]. Throughout this higher-level developmental process, dynamisms (combinations of higher-level overexcitabilities) interact with the other factors and influences of developmental potential, including the biological make-up of the individual, social–environmental influences, autonomous forces, and special abilities and talents. Dynamisms can interact synergistically or antagonistically depending on the individual's development and developmental potential [3,45,46]. Those dynamisms that are marked by organized multi-level disintegration have reached Level IV [3].

The continued development of dynamisms is a growth-oriented developmental process; however, it is not linear sequential, and it is not simple. It is turbulent and often described as "chaotic" [2,3,45]. Dabrowski stated that few individuals will reach the fourth and final level of development (Level V, secondary integration). It is a complex, multi-level within a level, up and down, developmental process. Dabrowski named this human development experience the theory of positive disintegration, to denote the extraordinary development that occurs when the individual's unique developmental and developmental potential are supported through the naturally turbulent process of human development [2,3,45]. Overexcitabilities and developmental dynamisms are the extraordinary forces and energy, the physics, behind higher levels of human development [5].

4.1.4. Developmental Potential

Family History and Genetics

A family history of giftedness was found in 89% of the highly-profoundly gifted children and adolescents. These findings aligned with Silverman's [47] findings that siblings were usually within 10 IQ points of each other; 33% of the siblings studied were within five IQ points. Silverman also found a familial history of giftedness among parents and grandparents.

Social–Environmental Influences

Dabrowski viewed social–environmental influences as one of the most fluid components of developmental potential. An individual's developmental potential is supported when there is space and opportunity for growth [3]. Overexcitabilities and the formation of developmental dynamisms were evident in the children's social–environmental influences. For instance, in the first example (p. 13), it is important to realize that multiple overexcitabilities were being expressed by the child at the same time. Furthermore, it is important to realize that these expressions of growth-oriented, higher-level overexcitabilities occurred while interacting with a sibling and a "passion mentor". "When my child is talking to their 'passion mentor', there is not an ounce of slowness or sloth in that body. My child is fully engaged. My child is active. My child is 'on'."

In the second example (p. 13), it is important to note the child's calm demeanor and expression of overexcitabilities as well as *the change* in the child's demeanor and expression. Upon entering kindergarten, the child went from "this sense of awe and

wonder of everything about them to, 'I don't want to go to school.'" It is important to realize that overexcitabilities can be expressed *introspectively*. Expressions are not always overt as the term suggests. It is also important to realize the connection between higher-level overexcitabilities and cognitive ability as reconciled by the child's parent. "They came out of these long, difficult tests of their IQ and said, 'oh, mommy that felt white like water.' It was the most profound moment, for me as a parent, knowing there's something inside of my child, that because my child is of such a calm demeanor, we didn't notice before."

Social–environmental influences aid the development of dynamisms synergistically or antagonistically. To support an individual's positive development and developmental potential, stakeholders need to pay close attention to the social–environmental influences and the individual's responses to those influences. Stakeholders also need to understand that overexcitabilities can be expressed internally and that the development of dynamisms involves an introspective nature.

Autonomous Forces

Dabrowski believed that an individual's developmental potential was driven by autonomous forces and the unique journey through the how and why, the ebb and flow, the disintegration, and rise to the most authentic self [2,3,45–51]. Autonomous forces combined with the other unique factors and influences, including overexcitabilities and developmental dynamisms, lead the individual through periods of growth, contemplation, and disintegration, in a unique pattern and length of time, organic to the developmental potential of the individual [2,3,45,46].

Special Abilities and Talents

The highly-profoundly gifted children and adolescents in the study sample are considered a special population with an IQ of 140 or greater. The narratives shared from the interviews touched on their array of special abilities and talents. Their developmental milestones were remarkable. For instance, the onset of crawling for the highly-profoundly gifted children studied was 5.2 months on average. In the World Health Organization Study [48] of 816 children, only 1% of the children crawled at 5.2 months. Dabrowski [49] found that the combinations of higher-level emotional, intellectual, and imaginational overexcitabilities and developmental dynamisms from childhood were associated with greater-than-typical abilities and "accelerated, universal development."

> "We observe above average abilities in many areas, emotional richness, and depth, and multiple and strong manifestations of psychic overexcitability. . . One may observe from childhood difficulties of adjustment, serious developmental crises, psychoneurotic processes, and a tendency toward disintegration of lower levels of functioning and reaching toward higher levels of functioning. This, however, does not occur without disturbances and disharmony with their external environment and within their internal environment. Feelings of 'otherness' and strangeness are not uncommon. We find this in gifted children, creative and prominent personalities, men of genius, i.e., those who contribute new discoveries and new values [49] (p. 30, from [3])."

5. Conclusions

A distinctly high, universal prevalence of all five forms of overexcitability, emotional, imaginational, intellectual, psychomotor, and sensual, was found in the international study of highly-profoundly gifted children aged 4–13 years. Higher-level overexcitabilities—as described by Dabrowski—were found in the combinations of three or more overexcitabilities occurring together, including emotional, intellectual, and imaginational. Developmental manifestations were described in the children's purposeful movement, expressive emotions, relentless desire for truth and understanding, and intuitive outcomes. A family history of profound giftedness was documented. The effect of social–environmental influences was profound. Autonomous forces, including distinct independence, self-initiation, and

self-education, were part of the children's everyday lived experiences. The beginning of the formation of developmental dynamisms, including the third factor, was described. Special abilities and talents were evident, and early developmental milestones were remarkable.

These findings warrant the assessment of overexcitabilities in the identification process of giftedness, especially highly-profoundly gifted children and adolescents. Gallagher's [12] study also concluded that multiple overexcitabilities were prevalent in the highly gifted students studied. These new findings specific to the distinct developmental differences of the highly-profoundly gifted population need to be incorporated into the identification process. An identification process based solely on quantitative cognitive abilities alone does not capture all of the distinct developmental differences related to cognitive ability in the highly-profoundly gifted population. The historical misunderstanding, misidentification, and misdiagnosis of highly-profoundly gifted individuals can be curbed through the identification and developmental support of overexcitabilities. Professional development and training for parents, educators, and practitioners are warranted.

Overexcitabilities, with respect to the social–environmental component of developmental potential, were especially impactful and appeared to have the greatest impact on the developing child. The examples emphasized the importance of identifying and supporting the needs of the child, such as the need for like-minded peers and mentors. The significant differences in the child's behaviors and interactions (demonstrated in the examples), with and without like-minded peers and mentors, should be used as an exemplar when assessing appropriate environments. Overall, the children's experiences were more positive when they felt emotionally and physically safe; when they felt understood and respected; and when they were given the space and latitude to authentically develop.

The identification of multiple higher-level overexcitabilities reminds us that the child experiences significantly greater-than-typical emotional, intellectual, imaginational, psychomotor, and sensual sensitivity, intensity, and awareness as part of their development. Overexcitabilities in relation to the social environment can be experienced internally or externally and can lead toward positive or disintegrating development depending on the make-up of all the factors and influences. Parents, teachers, school administrators, psychologists, and pediatricians need to fulfill these basic needs through this greater-than-typical developmental lens.

Stakeholders responsible for the developmental and educational needs of highly-profoundly gifted children need to consider the following questions: What are the long-term impacts of positive and/or negative influences? What internal impacts are going unnoticed? How much development and potential are being sacrificed? And at what social, emotional, physical, cognitive, and altruistic cost to the child? Overexcitabilities have roots in the individual's biological make-up, autonomous forces, social–environmental influences, and development of special abilities and talents. Future in-depth analysis, with respect to the physiology and genetic make-up of the children, was tabled for future papers. Further analysis of the data with respect to each influence of developmental potential could reveal additional findings and understandings.

5.1. Benefits of a Mixed-Methods Study

The value of a mixed-methods study was evident. Additional and more thorough understandings were gained by collecting both quantitative and qualitative data. Through the interviews, distinct combinations of higher-level overexcitabilities were found in addition to the high prevalence of all five forms of overexcitability. The research team noted valuable considerations for including the interview method in the study of overexcitabilities, development, and developmental potential. It was acknowledged that the parents were very good at describing their child's behaviors in the interviews. It was also realized that it may be harder for the parent to interpret their child's behaviors, based on the items on the OEQ II questionnaire, compared to describing their child's behaviors in an interview. The parents may not realize the expressions of overexcitabilities in their child; overexcitabilities may occur internally within the child. It was learned that parents may find it difficult

to discern greater-than-typical sensitivity, intensity, awareness, or unique developmental milestones. It was noted through the interviews that if greater-than-typical development was typical for a family, it may go unnoticed.

5.2. Limitations

The number of study participants (88) could be considered a limitation. Individuals with an IQ score of 145+ are estimated to be 0.13% of the population or 13 out of 10,000 individuals [50]. Therefore, the research team expected the number of study participants to be significantly less than a study of the typical population. Gross' study [9] consisted of 60 children. To the best of our knowledge, the present study is the largest mixed-methods, international study of highly-profoundly gifted children and overexcitabilities. The number of girls (N = 25) and the number of children within the age range were limitations. However, the mean OE scores were similar throughout the age range (4–13) and there was no significant difference between the boys and the girls when considering the most prevalent "high" OE profile. Additional awareness and studies of highly-profoundly gifted girls specific to overexcitabilities, higher-level overexcitabilities, development, and developmental potential are warranted.

The quantitative and qualitative results were both homogeneous. Little scatter existed. The greatest scatter was found in the imaginational overexcitability scores on the OEQ II, Adapted. Scatter may be expected in a general population; however, it is essential to consider the study through the lens of the population being studied. In a study of a specific population, highly-profoundly gifted children and early adolescents with a documented WISC IQ score of 140+, accepting a limited (n) was *necessary* to uncover and understand what is *typical* for a statistically rare population.

5.3. Recommendations

The Overexcitability Questionnaire (OEQ II), Adapted, results showed a statistically valid and reliable high prevalence of overexcitabilities in highly-profoundly gifted children and adolescents. Therefore, an overexcitabilities assessment should be part of the gifted identification process. In practice, it is recommended that the OEQ II, Adapted, be used as the start of universal screening to consider the development and developmental potential of giftedness.

It is recommended that K-8 superintendents, school administrators, and gifted coordinators implement a school-wide assessment of overexcitabilities as part of a holistic screening process for giftedness beginning in kindergarten. The earlier the identification of giftedness, the better the prognosis for the highly-profoundly gifted individual [1,7–9,51]. It is suggested that the OEQ II, Adapted, be filled out by a caretaker of incoming kindergarten students and at grade-level assessment checkpoints. Children who score some of the time, a lot of the time, or most of the time on three or more overexcitabilities including emotional and intellectual should be further assessed. Quantitative (IQ and/or achievement assessment) and qualitative (social, emotional, physical, cognitive, and altruistic developmental and developmental potential) measures should be followed to properly assess and identify the continuum of giftedness.

For parents and teachers, it is recommended to seek an assessment of overexcitabilities and giftedness for those children and adolescents with behaviors and development similar to the highly-profoundly gifted children examined in this study. To start, complete the OEQ II, Adapted, on behalf of the child. Next, inquire with your school or a trained professional. Seek advice from a professional who is experienced in the assessment of the continuum of gifted behaviors and development. A comprehensive assessment of development and developmental potential may be warranted to determine giftedness. Without a thorough assessment of an individual's development and developmental potential, including higher-level overexcitabilities and developmental dynamisms, some highly-profoundly gifted individuals will continue to go unidentified, misidentified, or tragically, misdiagnosed.

For psychologists and psychiatrists, a comprehensive assessment model is recommended. The Wood assessment model outlines an ideal holistic approach using Dabrowski's human development theory (Wood, n.d.). The assessment of social, emotional, physical, cognitive, and altruistic development and developmental potential (family history, autonomous forces, social–environmental influences, higher-level overexcitabilities, developmental dynamisms, and special abilities and talents) is essential for an appropriate assessment. For quantitative assessment, the current gold standard is the individual administration of the WISC-V by a qualified administrator trained in the typical behaviors and development of giftedness and highly-profoundly gifted children [51]. A professional with training in profound giftedness will have the most thorough understanding of the continuum of giftedness.

For pediatricians, it is recommended that the OEQ II, Adapted, be incorporated into yearly visits with every child beginning in infancy. Inquiring about and discussing the child's developmental milestones, including social, emotional, physical, cognitive, and altruistic development and developmental potential, and educating the parents on the early signs of gifted development can position the child for appropriate educational placement beginning in kindergarten. Assessment referrals should be trained and experienced in the development of profound giftedness as indicated above. The history of the child's developmental milestones is an important assessment of the child's overall growth, development, and well-being. It can play an important role in the assessment of giftedness and profound giftedness. See Table 6 to reference the onset of developmental milestones in this study.

For researchers, the assessment of higher-level overexcitabilities and developmental dynamisms needs to be incorporated into the identification process because higher-level overexcitabilities and developmental dynamisms constitute the development and developmental potential of highly-profoundly gifted individuals. Future versions of the OEQ II might consider how to capture the combination of multiple higher-level overexcitabilities and developmental dynamisms. This may require the thoughtful construction of a new instrument. Additional research is warranted to continue to build on this body of research data specific to the highly-profoundly gifted population. Studies in the neurological functioning, physiology, and genetic make-up of the highly-profoundly gifted population are warranted and potentially essential to the well-being of this population throughout the lifespan.

Supplementary Materials: The following supporting information can be downloaded at: https://www.mdpi.com/article/10.3390/educsci14080817/s1, S1: The OEQ II, Adapted.

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