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Overexcitability Research: Implications for the Theory of Positive Disintegration and the Field of Gifted Education

Sal Mendaglio

Abstract

Of the many concepts that comprise Dąbrowski's theory of positive disintegration, it is his concept of overexcitability that has gained prominence in the field of gifted education. It is likely that the concept resonates among parents and educators of youth who are gifted because it is perceived as descriptive of gifted children's behaviors. Interest in overexcitability has extended to researchers who became interested in exploring the relationship between overexcitability and giftedness. The steady growth of empirical studies since the 1980s was due to the availability of questionnaires to assess overexcitability. The original open-ended Overexcitability Questionnaire facilitated seminal research conducted largely by the group of scholars who pioneered research on the topic. However, it was the availability of the Likert-type Overexcitability Questionnaire II that led to a significant increase in the number of research publications. This article provides a descriptive review of research literature from the early days of the introduction of Dąbrowski's theory to the field of gifted education to present day. The article concludes with implications of the review for the theory of positive disintegration and the field of gifted education.

Keywords: *theory of positive disintegration • overexcitability • Overexcitability Questionnaire • Overexcitability Questionnaire II • descriptive review*

It is difficult to conceive that anyone—parent, educator, psychologist, or researcher—interested in giftedness/gifted education could not be aware of the word “overexcitability”. What has facilitated the popularity of the word in our field? A major force has been the research conducted investigating this concept's relationship to giftedness. Research on overexcitability was sparked by a small group of a few interconnected American scholars including Michael Piechowski, Linda Silverman, Nancy Miller, and Frank Falk whom I dub the “pioneering group”. Their work (e.g., Lysy & Piechowski, 1983; Miller & Silverman, 1987; Piechowski & Cunningham, 1985; Piechowski et al., 1985) inspired interest in overexcitability in stakeholders in the field of gifted education, including researchers. Though they began their work almost 40 years ago, they continue to contribute to elucidating overexcitability (e.g., Silverman, 1993; Probst & Piechowski, 2012; Piechowski, 2014; Piechowski & Wells, 2021; Wells & Falk, 2021). Their efforts are responsible for the concept of the acceptance of overexcitability and the theory of positive disintegration (Dąbrowski, 1970) in gifted education. Current popularity of the concept and the theory is the result of a transition from brief references to them in gifted education publications (e.g., Van Tassel-Baska, et al., 1988; Clark, 1992) to detailed descriptions (e.g., Colangelo & Davis, 1991; Hébert, 2011; Cross & Cross, 2012), special issues of journals (Ackerman & Moyle, 2009) to book-length treatment of the topics (Daniels & Piechowski, 2009; Mendaglio, 2008;

Tillier, 2018). A notable feature of theoretical literature mentioned above is the growing sophistication of the treatment of overexcitability. In time, authors, not part of the pioneering group, began to discuss overexcitability within its proper context, Dąbrowski's theory, not simply describe overexcitability. I believe that the dissemination of theoretical publications, as their treatment became more comprehensive, piqued interest among researchers who were not members of the initial interest group.

As will be documented later in this article, research on overexcitability that began in the 1980s continues into the early 2020s, attesting to researchers' continuing interest in the concept. Review of early and recent publications suggests that newer research continues in a similar vein as the pioneering works, with occasional signs of pursuing novel questions related to giftedness. In this article, I trace the evolution of research in this area and produce a descriptive, rather than a critical, review. The purpose of the article is to propose potential implications of research in overexcitability for both the theory from which overexcitability is derived and for the field of gifted education.

Why Overexcitability?

Kazimierz Dąbrowski, a Polish psychiatrist and psychologist, proposed a theory of personality, which he termed the theory of positive disintegration (e.g., 1967, 1970), which is unique among such theories due to its revolutionary perspective on psychopathology (Aronson, 1964). In contrast to the view held by his contemporaries (see Jahoda, 1958) as well as the current mental health establishment (see, DSM5, American Psychiatric Associ-

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ation, 2013), experience of what traditionally are labelled "symptoms" (e.g., anxiety, depression) is deemed necessary for personality development (Dąbrowski, 1972). Those familiar with the theory know that personality itself was recast as denoting exemplary human functioning, not simply a psychological construct possessed by all individuals. While the role of psychopathology in Dąbrowskian personality formation is at the heart of the theory of positive disintegration, attention to the theory has been limited almost exclusively to one of its many concepts: overexcitability. To be sure, overexcitability, when present in its full complement of five forms—psychomotor, sensual, intellectual, imaginal, emotional—creates psychological disharmony that lays the foundation for the development of personality. However, when viewed in the context of the full theory of positive disintegration, with its multitude of concepts (see Dąbrowski, 1973), a question arises: Of the numerous concepts that comprise Dąbrowski's theory, why is overexcitability the one concept of choice for practitioners and researchers?

The preponderance of focus on Dąbrowski's overexcitability by stakeholders in gifted education is most likely due to its conceptual accessibility. Of the numerous unique concepts inherent in the theory, such as positive disintegration, dynamisms, and multilevelness, overexcitability is, relatively speaking, readily incorporated into parents' and practitioners' conceptions of giftedness. Overexcitability, as defined by Dąbrowski (1970) in its five forms, contains some descriptors that are commonly attributed to children who are gifted; for example, boundless energy (psychomotor), sensor/physical sensitivity (sensual), asking probing questions (intellectual), imaginary friends (imaginal) and emotional intensity (emotional). Even though representations of overexcitability are not necessarily accurate reflections of Dąbrowski's conception (e.g., see Dąbrowski, 1996), they are attractive because they have been interpreted as explaining social and emotional experiences of gifted youth. For example, otherwise inexplicable intense emotional experiences and outbursts witnessed by parents and teachers could be explained by emotional overexcitability. Emotional overreactions, that affect gifted children's social relations, could be attributed to that overexcitability. Gradually, Dąbrowski's theory became a force in gifted education used to explain social and emotional needs of gifted youth.

Relative ease of understanding might explain parents' and practitioners' attraction to the concept of overexcitability. However, it does not fully explain the growing body of research on overexcitability since the 1980s (Mendaglio, 2022). It seems reasonable to assume that instruments to assess concepts make research possible. To date the only Dąbrowskian concept for which an instrument has been developed is overexcitability. The Overexcitability Questionnaire

(OEQ, Lysy & Piechowski, 1983), was developed soon after Dąbrowski's theory was first introduced to gifted education (Piechowski, 1979). Silverman (2008) describes how the OEQ came to be:

Michael Piechowski began the systematic consideration of expressions of overexcitability by examining 433 instances of OE [overexcitability] found in the autobiographical material of six subjects in Dąbrowski's study of levels of development (Piechowski)...One of the subjects was a historical case study: Antoine de Saint-Exupery. From this material, he developed an open-ended instrument consisting of 46 items that tapped the different OEs. This was the original Overexcitability Questionnaire (OEQ). (Term added, *Italics in original*, p. 161)

The OEQ (for a detailed description see Piechowski & Wells, 2021; Mendaglio & Tillier, 2006) sparked research investigating the relationship between overexcitability and gifted persons. As noted earlier, the earliest studies were conducted by the pioneering group (Piechowski, Silverman, Miller and Falk). With the publications of their work and their presentations at conferences, most notably those organized by the National Association for Gifted Children (NAGC), interest spread among practitioners and researchers in the field of gifted education. Mendaglio and Tillier (2006), in their review of research on overexcitability and giftedness, document the research contributions made by the pioneering group using the OEQ. The initial studies investigated whether the profile of overexcitability among gifted was greater than among nongifted, specifically whether gifted participants manifested all forms compared to nongifted. These early studies administered the OEQ to adult samples. Taken as a group, studies by Silverman and Ellsworth (1981), Piechowski and Cunningham (1985), Lysy and Piechowski (1983) and Miller et al. (1994) found varying levels of support for the hypothesis. The greatest support was found when the participants were practicing artists (Piechowski & Cunningham, 1985).

While the pioneering group focused on adults, other researchers began to focus on gifted youth. Gallagher (1986) and Tucker and Hafenstein (1997) investigated overexcitability with samples of gifted students. Gallagher found that gifted students scored higher than nongifted on intellectual, imaginal, and emotional overexcitability. Tucker and Hafenstein, in their qualitative study, reported that all five gifted children manifested the five forms. Meanwhile, Ackerman (1997) investigated the possible use of the OEQ as a means of identification of giftedness in adolescents, as an alternative to intelligence tests. She reported that psychomotor was the one form that discriminated between gifted and nongifted adolescents.

While the OEQ made empirical research possible, its administration and scoring restricted research productivity and methods. Participants were required to write their

responses to numerous questions. Researchers needed either to have their OEQ data scored by the pioneering group or to attend workshops to learn the procedure. Unlike today where technology can make such situations practical to manage (e.g., through webinars and digital video meetings) the state of communications in the 1980s and 1990s required personal contact to accomplish learning tasks that we now take for granted. The nature of the OEQ and the state of technology affected research by limiting the number of researchers who would embark on overexcitability studies and, for those who did conduct such research, there was a limitation on sample size. Except for the study by Ackerman (1997), which had a sample size of 97, samples during the 1980s and 1990s were quite small. Moreover, the administration and scoring of the OEQ affected research methods. Some of the early studies used the data of a previous study as a control/comparison group rather than including one in their research design (e.g., Silverman & Ellsworth, 1981; Miller et al., 1994).

All of that changed with the construction of a new overexcitability questionnaire by the pioneering group. Bouchet and Falk (2001) describe its development, while noting its advantages:

The current study uses a newly developed self-rating questionnaire, the Overexcitability Questionnaire II (OEQ II; Falk, Lind, Miller, Piechowski, & Silverman, 1999). The self-rating questionnaire allows for larger samples and more rigorous and objective testing of hypotheses. It also provides greater efficiency in coding. In general, subjects find it easier to respond to a self-rating questionnaire than to write responses to open-ended questions.

The development of the self-rating questionnaire began by examining the more than 300 open ended OE questionnaires from several studies. (p. 263)

The OEQ II is a Likert-type questionnaire with items designed to assess the five forms of overexcitability (see Bouchet & Falk for a detailed description). As noted earlier, the original OEQ required participants to provide written responses to numerous questions and trained raters to evaluate them with respect to presence and depth of overexcitability. The new questionnaire requires participants to rate items using a five-point scale. Researchers readily use the instructions provided to score the items and "do the math". Uncertainty regarding the degree to which the questionnaire accurately reflects Dąbrowskian overexcitability notwithstanding, clearly the OEQ II is far more attractive to both participants and researchers. The OEQ II is often touted as a revision of the original. Other than that, the item pool was derived from OEQ data, there is no similarity between the two questionnaires. Revision or novel, the OEQ II changed forever the landscape of research on overexcitability. As a Likert-type questionnaire, with its ease of administration

and scoring, the OEQ II has spawned new waves of research on overexcitability.

Overexcitability Research Using the OEQ II

In this section I describe a sample of quantitative studies investigating overexcitability and giftedness published in academic journals during the past 20 years. The sample represents publications found by searching two databases: Education Research Complete and *APA PsycInfo*. I chose these databases because they span the domains in which articles of interest tend to be archived: education and psychology. The search terms used were: overexcitability/overexcitabilities and gifted; Dąbrowski and gifted.

I present this sample of research studies using the following categories: overexcitability and gifted/talented, other variables, and Five Factor Model of personality.

A note on terms used referring to overexcitability is in order. To this point I have used "overexcitability", singular, and "forms" of it, as Dąbrowski tended to use. In descriptions of the studies below, I use "overexcitabilities" and the abbreviations OE and OEs, which is what researchers typically use.

Overexcitability and Gifted and Talented

Studies in this category report research methods and findings that are like the early studies. Comparative studies reported strong support for the association of overexcitability with giftedness, particularly when the samples were creatively gifted adults. Like Ackerman (1997) one study examined the possibility of using the OEQ II for identification of giftedness. The one qualitative study is unique, not only because of the methodology but because its focus is the experience of gifted adults. While there is similarity of the studies with the original ones, the obvious difference is, of course, sample size.

Not surprisingly, the first researcher to use the OEQ II was Frank Falk. Bouchet and Falk (2001) were interested in whether there would be differences in overexcitability as measured by the new questionnaire among participants depending on the type of previous educational program they attended: gifted education, Advanced Placement, or standard education. The authors also hypothesized that females would score higher on sensual and emotional overexcitabilities; males, higher on psychomotor and intellectual. Their sample consisted of 562 undergraduate students who completed the OEQ II. Participants who had attended gifted education programs scored significantly higher on imaginal and intellectual. Regarding gender differences, females scored higher on emotional and sensual; males scored higher on intellectual, imaginal, and psychomotor.

Piirto et al. (2008) examined potential differences on overexcitability between gifted and talented high school students in America and South Korea. The OEQ II was

used to assess overexcitability. The American sample of 227 that consisted of 88 males and 139 females was recruited in Ohio. The South Korean sample of 341 that consisted of 117 males and 224 females were recruited in Seoul. The authors reported that Korean males and females scored higher in psychomotor OE and that U.S. males and females scored higher in imaginal OE, while no differences were found in intellectual, emotional, or sensual overexcitability.

Wirthwein and Rost (2011) investigated the possibility of using overexcitability to identify gifted and talented individuals. Scores on the OEQ II administered to 96 intellectually gifted and talented adults were compared to a sample of 91 adults of average intelligence and adult high achievers. In addition, the scores of 123 high achievers were compared to those of 97 average achievers. The authors reported that the gifted sample scores were significantly higher on intellectual overexcitability. High achievers scored significantly higher than average achievers on intellectual and sensual overexcitability. However, the authors concluded that group differences were too small to support using only overexcitability for identification of giftedness.

Szymanski and Wrenn (2019) explored the lived experience of successful, intense, gifted adults, to understand how overexcitability influences life experiences. The authors were also interested in what supports helped or could have helped navigate the process of growing up. Using purposive sampling seven gifted adults were invited to share their experiences. A questionnaire adapted from the OEQ II was used as a screening tool. Prospective participants completed the questionnaire and responded to other questions to determine if they would be identified as intellectually gifted. The study sample consisted of five participants who were identified as being gifted and possessing overexcitability. Hyperawareness, isolation and seeking peers were themes extracted by the authors. The authors reported that participants each noted the importance of developing positive stress coping methods such as exercise, meditation, therapy and self-acceptance. However, years of participants' experimenting with illegal drugs and suffering extreme depression and anxiety preceded the development of the positive alternatives to handling their intensity.

Martowska et al. (2020) explored whether there were any differences in overexcitability between artistically talented individuals and a control group. The artistically talented group consisted of 40 professional actors, 20 women and 20 men, ages 22 to 58, recruited from theaters in two cities in Poland. The control group consisted of 30 individuals, 16 women and 14 men, ages 22-52 recruited from a university. Criterion for the control group membership was a lack of involvement in any arts form, as an amateur, professional or student. The authors reported that the actor group scored higher than the control group on sensual, imaginal, emotional, and psychomotor but not intellectual.

Martowska and Romanowicz (2020) explored overexcitability profiles of musically talented university students compared to a control group. Both groups consisted of an equal number of participants: 106 students, 75 females and 26 males, 18-30 years of age. Musically talented participants were enrolled in two music-focused universities in Poland, which specialize in both vocal and instrumental music. The control group attended other Polish universities and were not involved in any musical activities, amateur or professional, nor were they enrolled in courses in those areas. Results indicated that female music students scored significantly higher in sensual, imaginal, and intellectual OEs compared to the female students in the control group. Male music students scored significantly higher in sensual and emotional OEs and lower in psychomotor OE compared to male students in the control group. Regarding group differences, the authors reported the musical talented group had more than twice the number of individuals with elevated emotional and sensual scores than the control group.

OE and Other Variables

Studies in this category investigate a range of variables, which taken as a group, represent social and emotional aspects of giftedness. Using comparative studies, some findings cast light on the darker side of high levels of overexcitability, namely, a threat to subjective well-being.

Harrison and Van Haneghan (2011) examined the contention that the experiences of fear of the unknown, death anxiety, and insomnia are prevalent among some gifted individuals. Their study investigated the relationship of those variables with overexcitability. Participants included 73 gifted and 143 typical middle and high school adolescents who completed a death anxiety questionnaire, a fear of the unknown scale, an insomnia scale, and the OEQ II. Gifted adolescents reported higher levels of fear of the unknown and insomnia than regular students. They also scored higher on intellectual, imaginal, psychomotor, and sensual overexcitability. The high school gifted students scored higher on emotional as well. Higher levels of overexcitability in gifted students were associated with higher anxiety and insomnia.

Mofield and Parker Peters (2015) explored the relationship between healthy and unhealthy perfectionism and overexcitability in gifted adolescents. Participants of the study were 130 identified gifted students in sixth, seventh and eighth grades. Perfectionism was assessed using the Goals and Work Habits Survey; overexcitability by the OEQ II. Findings revealed a significant relationship, especially between emotional overexcitability and dimensions of perfectionism. High emotional, high intellectual overexcitabilities, and low imaginal overexcitability were also predictor variables for dimensions of healthy perfectionism.

Perrone-McGovern et al. (2015) explored interrelationships among emotional overexcitability, perfectionism, emotion regulation, and subjective well-being. Participants were 191 adults who responded to surveys administered via online methodology. The sample consisted of 49 males and 142 females ages 18 to 65. Participants completed the OEQ II, Almost Perfect Scale-Revised, Satisfaction With Life Scale, and the Emotion Regulation Questionnaire. The authors reported participants in the present study with higher emotional overexcitability had lower degrees of emotion regulation overall, whereas individuals reporting higher levels of adaptive perfectionism (perfectionism related to striving toward personal goals and achievement) had higher levels of emotion regulation. Furthermore, strivers and those who used cognitive reappraisal strategies for emotion regulation were linked to higher subjective well-being for participants in this study.

Thomson and Jaque (2016), in a cross-sectional study, investigated the psychological profile of three talented groups using five self-report instruments. Talented participants included 84 dancers, 62 opera singers, and 49 athletes. Self-report instruments included the Beck Anxiety Inventory, Beck Depression Inventory-II, Internalized Shame Scale, Inventory of Childhood Memories and Imaginings, and the OEQ II. Compared to athletes, dancers and opera singers scored significantly higher on all forms of overexcitability, fantasy proneness, shame, and anxiety. There were no group differences for depression. Further, emotional, and imaginal overexcitability significantly predicted shame, anxiety, and depression. The authors concluded that the performing artists' elevated scores for shame and anxiety raises concern about their psychological well-being.

Beduna and Perrone-McGovern (2016) studied the relationship between emotional and intellectual overexcitability, emotional intelligence and subjective well-being. The sample consisted of 144 undergraduate college students, ages 18-25. As expected, the OEQ II was used to assess overexcitability, while the Brief Emotional Intelligence Scale was used to assess emotional intelligence and the Satisfaction With Life Scale was used to assess subjective well-being. The authors hypothesized that greater emotional and intellectual overexcitability relate to higher emotional intelligence, that higher emotional intelligence relates to higher subjective well-being, and that emotional intelligence is a mediator between the overexcitabilities and subjective well-being. Results indicated that greater emotional and intellectual overexcitability were significantly and positively related to higher emotional intelligence and that higher emotional intelligence was significantly positively related to higher subjective well-being. The mediational role of emotional intelligence between emotional and intellectual overexcitability and subjective well-being was also supported.

De Bondt and Van Petegem (2017) explored the potential interrelationships between overexcitability and students' learning patterns from the perspective of Dąbrowski's theory of positive disintegration. This study was part of a large-scale research project that investigated the influence of students' learning patterns on their transition from secondary school to higher education programs in Flanders. Learning patterns were defined in terms of surface-level and deep-level processing of information. The surface pattern of learning, also termed undirected, is characterized by memorization and reproduction of knowledge and motivated by external requirements to meet course criteria. On the other hand, the objective of deep learning, also termed meaning-directed, is to understand, which is characterized by construction of meaning and connecting current information with prior knowledge, critical thinking and formulating conclusions. Participants were 516 students, 318 females and 198 males, in the second year of their higher education program. Overexcitability was assessed by the OEQ II, learning patterns by the Learning and Motivation Questionnaire (LEMO). The LEMO is composed of the Inventory of Learning Styles-Short Version (ILS-SV), and an abbreviated version of the Academic Self-Regulation Questionnaire (SRQ-A) and the Academic Motivation Scale (AMS). The ILS-SV assesses cognitive processing and metacognitive regulating strategies. SRQ-A assesses study motivation by differentiating between being motivated to study because of love of learning and motivated to study because of duty. The AMS measures the extent of experienced motivation. As hypothesized, intellectual overexcitability is a strong indicator of meaning-directed learning. Contrary to what was hypothesized, emotional, imaginal, and psychomotor overexcitability were not indicative of deep learning. Emotional overexcitability is instead related to surface learning, as it is the only explanatory factor for surface learning in both gender groups and even indicative of undirected learning for the male group. According to the results, imaginal overexcitability explains the undirected learning pattern, applicable to both groups. In addition, imaginal overexcitability was negatively related to the meaning-directed pattern for the females. The authors concluded that the five forms of overexcitability affect learning patterns.

He et al. (2017) conducted a study to examine the contribution of overexcitability to creativity. The authors based their study on the Dąbrowskian perspective that the forms of overexcitability are important psychological attributes of creativity. Participants were 1055 students, half females, and half males, in grades 7 to 11 in Hong Kong. The OEQ II was used; creativity was assessed by the Test for Creative Thinking-Drawing Production (TCT-DP). Results indicated that imaginal OE was most significant predictor of creativity, followed by intellectual, emotional, sensual, and psychomotor. Furthermore, the

OEQII manifested significant discriminating power in the identification of highly creative individuals. The authors concluded that the findings provided empirical support to the Dąbrowskian perspective regarding the predictive role of OEs to creativity.

Al-Hroub and Krayem's (2020) study had two purposes: to investigate the relationship between forms of overexcitability and attention deficit hyperactivity disorder (ADHD) subtypes; and, to explore gender differences in the overexcitability profiles among gifted adolescent students. Participants were 265 students composed of 91 girls and 174 boys from grades 9 to 11 attending a gifted education school. They were administered the Jordanian versions of the OEQII and the Conners ADHD/DSM-V Scales—Adolescent scale. Results indicated significant positive correlations between psychomotor OE and hyperactive-impulsive ADHD and between imaginal OE and ADHD subtypes. There was also a small significant negative correlation between intellectual OE and inattentive ADHD scores. Regarding gender, significant differences were found boys scored higher on psychomotor; girls scored higher on emotional, sensual, and imaginal forms. In contrast, there was no significant gender difference found regarding intellectual overexcitability.

Fung and Chung (2021) examined the associations between overexcitabilities and playfulness of Chinese kindergarten children in Hong Kong, considering household play opportunities. Participants were 107 children and their parents. Parents completed the Chinese versions of the OEQ II, Children's Playfulness Scale, and Child's Play questionnaire. The Playfulness Scale assesses child's behaviors during play activity consisting of five subscales: physical activity, cognitive spontaneity, social spontaneity, manifest joy, and sense of humor. The Child's Play items asked parents to assess household play opportunities for child's play, such as availability of toys. Results, controlling for child age, gender, household play choices, and household play opportunities, indicated that children's imaginal overexcitability was significantly predictive of their cognitive spontaneity, manifest joy, and sense of humor. Children's psychomotor overexcitability was associated with their physical spontaneity, social spontaneity, and manifest joy, whereas their intellectual overexcitability was a significant predictor of social spontaneity and cognitive spontaneity. The authors concluded that their findings demonstrated the relationships between overexcitability and playfulness among Chinese children.

Overexcitability and Five Factor Model (FFM) of Personality.

Studies in this category are interesting because they represent an expansion of interest in overexcitability specifically and Dąbrowski's theory, beyond the confines of gifted education. What is particularly interesting is the proposal by some researchers to replace overexcitability

entirely with the openness to experience factor of the FFM, though others reject the idea.

Miller and Speirs Neumeister (2012) investigated whether the variables of intellectual overexcitability, openness to experience, and self-oriented perfectionism work together to predict creativity in a high ability population. Participants were 323 undergraduate students in the honors college of a university composed of 85 males and 230 females ranging in age from 18 to 23 years. Unlike other studies, intellectual overexcitability was assessed by the Ksiazak Adult Giftedness Scale designed to measure that form of overexcitability in adults. The scale is described as follows:

This scale, developed by Ksiazak (2010), measures the presence of intellectual overexcitabilities in adults. This 23-item non-timed scale instructs participants to indicate their level of agreement with statements about typical experiences, attitudes, and behaviors (i.e., "It is important for me to be able to have intellectually stimulating discussions" and "I am a curious person"), using a 7-point Likert scale. An intellectual overexcitability score is provided, with higher scores indicating higher levels of intellectual OE. Scores can range from 23 to 161. In the current study, Cronbach's alpha was .87 for this scale. (p. 89)

Perfectionism was assessed by the Hewitt and Flett Multidimensional Perfectionism Scale. Openness to experience was measured by the Big Five inventory and creativity was assessed using the Scale of Creativity Attributes and Behaviors. Using creativity as the outcome variable, multiple regression analysis indicated that intellectual overexcitability and openness to experience are positive predictors of creativity, while self-oriented perfectionism is a negative predictor. Additional regression analyses incorporating creativity subscales provided further understanding of the relationship between different components of creativity and the predictor variables. The authors concluded that their findings support a multidimensional conceptualization of creativity in high ability young adults.

Limont et al. (2014) examined the relationship between overexcitability, the Five Factor Model (FFM) personality model and giftedness. The sample for the study was 270 secondary school students, ages 14 to 18, consisting of 132 intellectually gifted adolescents and 103 regular students who served as controls. To confirm the gifted-control assignment, Polish versions of the Raven's Progressive Matrices were administered. Participants completed the NEO-FFI and the OEQ II. Regarding overexcitability and FFM, the authors hypothesized that the gifted would score higher on intellectual, imaginal and emotional overexcitability than controls, and that the gifted would score higher than the controls on openness to experience and lower on neuroticism. An additional hypothesis was that giftedness would moderate patterns of correspondence between the

types of over-excitability and personality traits. Results indicated support for the hypothesized difference between groups on overexcitability and openness. Gifted scored higher than controls on intellectual OE, imaginal OE, and openness and lower on neuroticism than the controls, with one exception: no group differences were found on emotional overexcitability. Further, analysis showed that giftedness moderated the relation of OEs with openness and extraversion. The relations between sensual OE and openness as well as between psychomotor OE and extraversion were stronger in the gifted than in controls.

Vuyk et al. (2016) investigated the possibility that openness to experience, a factor in the Five Factor Model (FFM) of personality. The authors hypothesized that the six facets of openness represent constructs that are similar, if not identical, to the five forms of overexcitability. The authors hypothesized that the openness facets and their assumed corresponding OEs represent the same latent constructs. Strong correlations were expected in the following pairings: fantasy and imaginal, aesthetic and sensual, feelings and emotional, actions and psychomotor, ideas and intellectual, with the last facet, values, dealt with separately. There were 461 participants composed of two samples. One sample, 149 creative adolescents and adults. The adolescent sample consisted of high school students attending gifted programs and university students attending creative programs (e.g., fine arts, creative writing). The adult sample consisted of 312 adults drawn from the general population via the internet, with the promise of payment for participation. Participants completed the NEO Personality Inventory-3 and the OEQ II. Results indicated that openness to experience and OEs appear to represent the same construct. Except for values, all other pairings of openness facets and the five forms of overexcitability were supported statistically. The authors concluded that openness to experience should replace overexcitability in gifted education. Vuyk and Krieshok and Kerr provide reasons for this recommendation. Among them is that openness to experience is part of a model, FFM which has significant research support, while overexcitability, part of the theory of positive disintegration (TPD), has insufficient empirical support.

De Bondt et al. (2021) investigated interrelationships between overexcitability and the Big Five personality traits of neuroticism, openness, and conscientiousness. Participants included 516 students consisting of 318 females and 198 males. They completed three measures: the Dutch versions of OEQ II, the NEO-FFI, and a nonverbal test of intelligence. Results indicated that overexcitability is weakly related to the three personality traits examined except for a moderate association with openness for female participants. The authors concluded that there was no clear support for the conceptual equivalence of, or interchangeability between, overexcitability and openness, despite the moderate relationship for females.

Moreover, they stated that the results of their study do not support the assertion made by Vuyk et al. (2016) that openness should replace overexcitability.

Commentary on the Sample of Studies

Recent studies bear similarities to earlier ones in that they provide partial support for the association of overexcitability and giftedness. Like the early studies, the strongest support is found among practicing artists. There is also some support for the association of overexcitability and other variables, for example, perfectionism and ADHD. Support is found relating overexcitability with healthy or adaptive perfectionism, and as expected psychomotor is associated with ADHD hyperactive type. However, what I found most interesting among the sample are the studies investigating gifted and talented individuals' psychological well-being as well as those including the FFM model. Regarding psychological well-being, Szymanski and Wrenn (2019), exploring the experience of gifted adults, reported themes of isolation, extreme depression, and illegal drug use. Thomson and Jaque, (2016) noted that performing artists demonstrated feelings of shame and anxiety compared to controls. Harrison and Van Haneghan's (2011) findings draw attention to the emotional experience of gifted students—higher overexcitability is associated with some negative emotions: greater fear of the unknown and anxiety than controls.

Regarding overexcitability and FFM dimensions, some studies simply include openness to experience as another variable. For example, in Miller et al.'s (2012) study, openness to experience combined with intellectual overexcitability predicted creativity. Other studies explored overexcitability with other FFM factors. In a study by Limont et al (2014) gifted scored higher than controls on intellectual OE, imaginal OE, and openness but lower on neuroticism than the controls. While the above studies are notable by their focus on FFM, it is Vuyk et al.'s (2016) study that is most provocative. Based on their results, they concluded that facets of openness to experience correspond to the five forms of overexcitability. Their recommendation is what makes this study most interesting: openness should replace overexcitability, and that the field of gifted education should abandon it and Dąbrowski's theory.

Commentary on Characteristics of the Publications of the Studies

My comments include treatment of Dąbrowski's theory, location of data collection, and publication type. Recent studies are more likely to provide in-depth treatment of the theory of positive disintegration than earlier ones. De Bondt et al. (2021) is an excellent example of the discussion of overexcitability in the context of Dąbrowski's theory. In their introduction of the study, the authors

describe fundamental concepts of the theory of positive disintegration including personality development, levels of development, and dynamisms. Descriptions of data collection indicate that study locales have moved from the US to various parts of world, including Europe and Asia. Finally, the type of journal in which the publications appear evidence a movement beyond traditional journals in gifted education to mainstream APA journals such as *Intelligence*.

Implications

What can be gleaned from the sample of studies which have used the OEQ II during the past 20 years? I suggest that there are implications for both the theory of positive disintegration and for the field of gifted education.

Theory of positive disintegration

The OEQ II has contributed significantly to the dissemination of the theory, not only to the application of overexcitability. Even though overexcitability is the specific research focus, there are signs that researchers are becoming more knowledgeable about the entire theory as indicated by the introductions to their studies. There is increased discussion of the major components of the theory and explication of how overexcitability

is enmeshed in them. The locations of data collection and the type of journal in which the studies appear are more evidence of the spreading of the theory of positive disintegration. Studies are implemented increasingly in countries other than America. Studies have begun to appear more frequently in psychology journals.

Field of Gifted Education

Stakeholders in the field of gifted education are drawn to Dąbrowski's theory because of its emphasis on emotions (Mendaglio, 2008; Tillier, 2018). Recent articles continue to voice the theory's applicability to gifted children's emotions (e.g., Sisk, 2021). Many articles in the sample address the social and emotional domains of giftedness. In their own way, researchers using the OEQ II are directly maintaining focus on aspects of giftedness beyond academic achievement and productivity. The contribution of the overexcitability research community is appreciated in present day given the trends in gifted education. Among some influential scholars in the field, emphasis has moved dramatically towards achievement and eminence. While these aspirations are important, the current trend privileges prodigious achievement and excellence over the experience of gifted persons. Recent research using the OEQ II makes an important contribution—keeping us focused on the psychology of giftedness.

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