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THE ORIGINS AND CONCEPTUAL EVOLUTION OF OVEREXCITABILITY

Abstract: The construct of overexcitability originated from the condition known as "nervousness." Dąbrowski differentiated it into types many years before publishing the first outline of his theory of positive disintegration. In this paper, we establish the origins of psychic overexcitability (OE), tracing its evolution in Dąbrowski's work prior to developing his theory and later through its placement within the concept of developmental potential. Based on our study of Dąbrowski's early Polish work, we challenge the belief that overexcitability is often misdiagnosed as attention-deficit/hyperactivity disorder (ADHD). Piechowski's elaboration of OE in gifted education is explored, and current misconceptions and misuses of OEs are critiqued. Based on our review, we present possible future applications and elaborations of overexcitability.

Keywords: Kazimierz Dąbrowski, theory of positive disintegration; overexcitability, overexcitabilities; developmental potential

Historical background of overexcitability

The theory of positive disintegration (TPD) is a theory of personality development created by Kazimierz Dąbrowski (1902–1980), a Polish psychiatrist and psychologist. Originally developed in Poland, and fully formed during his years working in Canada, Dąbrowski's theory found a home in the field of gifted education, due in large part to Michael M. Piechowski's (1979, 1986) elaboration of the construct of overexcitability. The theory provides an alternative perspective to pathologizing intense experience.

The overexcitabilities (OEs) emerged from the concept of nervousness, with origins reaching back to the 18th century. As a medical condition, being nervous appeared for the first time in 1733, in George Cheyne's (1733/1991) *The English malady, or a treatise of nervous diseases of all kinds*. The same era saw John Brown's (1780) use of "excitability" in his book, *The elements of medicine*. A century later, William James (1890) mentioned "psychic excitability," "emotional excitability," and "hyperexcitability" in the second volume of *The principles of psychology*. William Tillier (2018) has pointed out the work of Thomas Clouston, a Scottish physician, who described a condition called over-excitability that is strikingly similar to Dąbrowski's (1937, 1938/2019) early work:

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> The first of those morbid states to which I would direct attention is a simple hyperexcitability; an undue brain reactiveness to mental and emotional stimuli. This may come on at any age, from three years to puberty. The child becomes ceaselessly active, but ever changing in its activity. It is restless, and so absolutely under the domination of the idea which has raised the excitement that the power of attending to anything else is for the time being gone. (Clouston, 1899, p. 483)

Unlike his predecessors and contemporaries, who saw nervousness as pathological, Dąbrowski saw positive developmental implications in nervousness, or psychic excitability, and he differentiated it into types. One can observe the progression of his differentiation of the overexcitabilities into discrete types in his earliest work. The first mentions of OE occurred in his dissertation, where he explicitly named only two types: emotional and sensual (Dombrowski, 1929). In the first edition of his book, *Nerwowość dzieci i młodzieży* (*Nervousness of children and youth*), published in 1935, Dąbrowski added the psychomotor and imaginational types, and the first chapter is dedicated to his methods of using purposeful, systematic observation in multiple settings, including closed educational institutions, schools, and clinics.

In his 1937 monograph, *The psychological bases of self-mutilation*, which was first published in Polish in 1934, the OEs were placed within a pathological framework as elements underlying anxiety, depression, and other states of mental distress known as psychoneurosis. Dąbrowski's early works were on the psychological conditions of suicide, self-mutilation, and nervousness. Nervousness and psychoneurosis were terms for what was considered "minor mental disease" (Myerson, 1927, p. 57). In 1938, in *Types of increased psychic excitability*, Dąbrowski (1938/2019) first presented a definition of OE as synonymous with nervousness, describing it as:

> The manifestation of symptoms evoked in some individuals by stimuli that do not evoke them in others; excessive intensity of the responses, their disproportion to the stimuli, and their frequency; responding to different stimuli in a characteristic manner, indicating that the individual has a [triggering] point of "irritation" that appears in reactions without any direct connection to the stimuli evoking them, etc. (p. 3)

Also in the 1938 paper, Dąbrowski described two forms of OE–global and narrow–that have different developmental implications, with the global form favoring the "development of a very rich mental structure with multiple abilities and with high self-awareness (eminent personalities)" (Dąbrowski, 1938/2019, p. 23). In later work, he clarified that the narrow forms of OE were more likely to lead to phobias, tics, and one-sided development, and they lacked the strength to produce lasting inner transformation (Dąbrowski, 1996). One-sided development is the overemphasis or excessive growth of one area, or ability, to the exclusion of other aspects of development, without a broader range of interests (Dąbrowski, 1996). It can also mean that emotional OE is lacking (Dabrowski, 1972). An example of a poor prognosis due to one-sided development is when it leads to psychopathy or paranoia where "mental processes and structures are strongly "integrated" and resistant to environmental influence" (Dąbrowski, 1970, p. 30).

Overexcitability and ADHD

Although Dąbrowski has not been included in historical overviews of the conceptual evolution of ADHD (e.g., Lange et al., 2010; Mayes & Rafalovich, 2007), we assert that he was describing a condition that is part of the international history of this syndrome. In *Nerwowość dzieci i młodzieży* (*Nervousness of children and youth*), he discussed a wide range of developmental issues that were associated with nervousness in his time, from nervous impulses and feelings to problems with attention and memory (Dąbrowski, 1935). However, Dąbrowski's descriptions of OE also diverge from the path that led to our modern-day conception of ADHD.

We are not the first to suggest that there is an overlap between OE and ADHD. Elizabeth Mika (2006)[1] stated, "Dąbrowski's views on etiology and symptomatology of psychomotor OE almost completely overlap with our current understanding of ADHD… The symptoms he saw as characteristic of psychomotor OE were clustered under names of various conditions describing the same clinical phenomenon" (p. 241). In the one paper by Dąbrowski (1938/2019) that focused on the OEs, he described psychomotor OE in words that are very similar to our modern understanding of ADHD: restlessness, pacing, difficulty waiting, vocal utterances, and angry outbursts are examples. The following quote is a compelling example of the similarity between psychomotor OE and the hyperactivity-impulsivity dimension of ADHD:

> Real difficulties begin with the transition to systematic learning. The largest number of children receiving a negative grade for behavior are from this group. These children fidget in their seats, disturb their classmates, shoot scraps of paper and metal nibs, find thousands of reasons to leave the classroom, and display an excessive mobility of attention. After class, and sometimes during class, they initiate fights, and most often take part in them and in other psychomotor excesses. Among boys, excelling in being independent, inclined toward rebellion in school, we are most often dealing with those with psychomotor overexcitability. (Dąbrowski, 1938/2019, p. 7)

Dąbrowski (1938/2019) also described problems related to psychomotor OE that are commonly observed in older adolescents and young adults with an ADHD diagnosis:

> Youth of this type, and to a lesser degree adults, exhibit intermittent engagement in schoolwork and professional occupation: periods of excessive intensity of work followed by periods of shorter or longer duration of weakened capacity for required effort. They lack the ability for rhythmic work but rather are characterized by bursts of activity. Their work usually goes in many directions at once, often jumping from one kind of task to another, from one subject to another. Adolescents have a tendency to change schools, young people to change jobs. (p. 7)

Psychomotor OE, as defined in Dąbrowski's theory, is much broader than hyperactivity or impulsivity, but both of these can be considered expressions that would be included under that term. Dąbrowski mentioned hyperactivity many times in his work as a form of psychomotor OE, beginning with his first textbook in Polish on child psy-

[1] Elizabeth Mika (2002) first presented this connection at the Fifth International Conference on the Theory of Positive Disintegration in Ft. Lauderdale, Florida.

chiatry in 1935 (see also Dąbrowski, 1938/2019, 1996; Dabrowski, 1967, 1970, 1972). Dąbrowski's (1935) term for psychomotor OE, *nadpobudliwość psychoruchowa*, can be found in the Polish term for ADHD: *zespół nadpobudliwość psychoruchowa z deficytem uwagi*. In Table 1, we have compared the diagnostic criteria from the *Diagnostic and statistical manual of mental disorders, fifth edition* (DSM-5) (American Psychiatric Association, 2013), with Dąbrowski's (1938/2019) descriptions of psychomotor OE.

Table 1
ADHD hyperactivity-impulsivity and Dabrowski's psychomotor overexcitability.

Hyperactivity-impulsivity, DSM-5	Psychomotor OE, 1938/2019
Often fidgets with or taps hands or feet, or squirms in seat	Fidgets in seat, impatient
Often leaves seat in situations when remaining seated is expected	Find thousands of reasons to leave the classroom
Often runs about or climbs in situations where it is not appropriate (adolescents or adults may be limited to feeling restless)	Restlessness, outbursts of movement
Is often "on the go" acting as if "driven by a motor"	Hyperkineses, moves too much
Often talks excessively	
Often blurts out an answer before a question has been completed	Vocal utterances
Often has trouble waiting for his/her turn	Anxious waiting
Often interrupts or intrudes on others (e.g., butts into conversations or games)	Disturbs their classmates

Aside from this similarity between ADHD and OE, there is reason to believe that Dąbrowski's early work on OE can be connected with other types of neurodiversity such as autism. There are some authors who have explored the connection between OE and autism including Cash (1999), Chia and Lim (2017), and Karpinski et al. (2018).

The early work on overexcitability was completed prior to the final formulation of the theory of positive disintegration, and was available only in Polish until very recently. Dąbrowski's English books did not make clear the connections between OE and conditions such as ADHD and autism, but they did illuminate its associations with creativity and giftedness. Dąbrowski's work from the 1930s explains overexcitability in-depth while also laying a foundation for the TPD. In *Nerwowość dzieci i młodzieży* (*Nervousness of children and youth*) he included his own "eclectic theory" at the end of the book, in a chapter on theories of nervousness (Dąbrowski, 1935).

Developing a theoretical framework

It was not until after World War II that the first papers appeared with an outline of the theory of positive disintegration, first a brief paper in 1946 titled *O integracji i dezyntegracji psychicznej* (*On mental integration and disintegration*), and, in 1949, a more detailed one with the title, *Dezintegracja jako pozytywny etap w rozwoju jednostki* (*Disintegration as a positive stage in the development of the individual*) (Dąbrowski,

1946, 1949). The sections on OE in the 1946 paper were incorporated into the 1949 paper, which is a longer and richer treatment of his developmental constructs. The link between nervousness (overexcitability) and positive disintegration with giftedness and outstanding abilities is evident in the first outline of the theory:

> Disintegrating processes, loosening the coherence of the individual's structure, and expressed in various forms of nervous and mental overexcitability–cannot usually be regarded as negative phenomena. Numerous signs of nervousness, sometimes with pronounced psychoneurotic or even psychopathic traits, characterize outstanding individuals. American research, research conducted at the Institute of Mental Prevention in Paris (Dr. Serrin) and the author's own research indicate that among highly gifted children, the overwhelming majority are nervous children. (Dąbrowski, 1949, p. 31; translated from the Polish.)

In 1949, Dąbrowski discussed the connection between nervousness, psychoneuroses, and giftedness in the context of personality development through positive disintegration in greater depth. Similar to his earlier work, he drew from the lives of eminent individuals and "very capable children" (Dabrowski, 1937, p. 99).

The first instrument used to measure overexcitability was a 100-item questionnaire, which Dąbrowski (1938/2019) described in *Types of increased psychic excitability*. The questionnaire had 25 items for each of the four types, and these types were outlined in detail. He chose a minimum of 13 affirmative responses as an indication of a given OE. He mentioned problems in obtaining honest answers for sensual OE, and said that in the case of that particular type, it was sometimes necessary to lower the threshold for affirmative answers to fewer than 13/25 answers (Dąbrowski, 1938/2019). The use of a social-psychological interview was described in his work, and also a medical examination by which he explored potential neurological, psychiatric, and internal disorders. The heredity of the patient was considered, the conditions of pregnancy and childbirth, as well as diseases coexisting with the presenting disorder. Social and environmental conditions were also considered, such as housing, neighborhood, attitudes toward parents and siblings, memories from childhood, and history of conflict (Dąbrowski, 1935).

The full complement of five OEs was not present in Dąbrowski's work until 1958, in the second edition of *Nerwowość dzieci i młodzieży* (*Nervousness of children and youth*). In that book, intellectual OE is included along with the emotional, imaginational, sensual, and psychomotor types. In 1959 Dąbrowski published another text on child psychiatry with the title *Społeczno-wychowawcza psychiatria dziecięca* (*Social-educational child psychiatry*) in which he included the whole of the 1938 paper in his description of nervousness. This work was not available in English until 2019 when a translation of the original paper was published (Dąbrowski, 1938/2019).

Dąbrowski was tireless in his work and disseminated the theory of positive disintegration in multiple languages on multiple continents. In the 1960s, his work began to appear in English. Dąbrowski was helped in this process by two well-respected Americans: the psychiatrist and publisher, Jason Aronson, and the psychologist, O. Hobart Mowrer. The first book in English, *Positive disintegration* (1964b), is a slim volume which presents a brief outline of Dąbrowski's theory with an introduction by Aronson, who had worked on the translation of the book with Dąbrowski (Battaglia et al., 2014). The second book, *Personality-shaping through positive disintegration*, was published in 1967 and includes an introduction by Mowrer (Dabrowski, 1967). It appears

to be a close translation from the major portion of Dąbrowski's first Polish book about the theory, titled *O dezintegracji pozytywnej* (*On positive disintegration*) (Dąbrowski, 1964a). These books included all five OEs as disintegrating elements in the process of personality development.

Challenging mainstream psychiatry

Although there is a connection with conditions now categorized in deficit language as disorders in the DSM-5, Dąbrowski's construct of overexcitability is broader than any one set of symptoms. Within the theory of positive disintegration the OEs are not symptoms to be viewed as pathological but components of a rich developmental potential. The term developmental potential initially appeared in Dąbrowski's (1964b) first English book, *Positive disintegration*, in a discussion about the implications of the theory in psychiatry:

> This theory leads to an increased respect for the patient, emphasis on psychic strengths as well as on psychopathological processes, and attention to the creative and developmental potential of the patient. The theory indicates the necessity in diagnosis and treatment to distinguish disintegration as either positive or negative in nature. The theory of positive disintegration represents a change in the traditional psychiatric concepts of health, illness, and normality. (p. 23)

During the 1960s, OEs were described chiefly within Dąbrowski's theory as observable in children as well as in adults experiencing various psychoneurotic conditions. The OEs were established as observable and measurable elements of disintegration in his work long before the theory was fully outlined (Dąbrowski, 1935, 1938/2019). Later, they were placed within his developmental framework, and the overexcitabilities were considered to be, in part, a hereditary endowment, appearing in early childhood and persisting in varying degrees and combinations into adulthood. However, their importance within the theory remained vague and unclear.

After emigrating to Canada, Dąbrowski received help from two fellow Poles, Andrzej Kawczak and Michael M. Piechowski, who had backgrounds in philosophy and science, respectively (Battaglia, 2002; Piechowski, 2008). With their assistance, Dąbrowski (1970) refined his concepts and set forth the conceptual framework of the theory. It is clear when reading *Mental growth through positive disintegration* that Kawczak and Piechowski helped Dąbrowski formalize the theory by establishing a conceptual framework, as well as making a first attempt at delineating the levels of development. In this book, Dąbrowski (1970) set forth 72 hypotheses in eight categories with Kawczak's help.

Evolution of developmental potential

With the publication of *Mental growth*, the construct of developmental potential (DP) began to come into focus as "differentiated potentials of the developmental instinct" (Dąbrowski, 1970, p. 31). The "differentiated potentials" were the five types of OE, and also included in DP were special interests, talents, and abilities, and the capacity for inner psychic transformation. The three factors of development were also

fleshed out for the first time in *Mental growth*. These were not discrete factors, per se, but conglomerations of factors, conditions, and chance that helped to set apart what Dąbrowski called the autonomous forces. The first factor includes the "hereditary, innate constitutional elements," which includes overexcitability and "specific interests or aptitudes," but also encompassed negative potentials such as a genetic propensity toward psychopathy or intellectual disability (Dąbrowski, 1970, p. 33). The second factor includes the influence of the external environment, such as the family and the social milieu. The third factor of development is not automatically derived from these two, and it "represents the autonomous forces of self-directed development. In this sense the term "third factor" is used to denote the totality of the autonomous forces" (pp. 72–73). In *Mental growth* it was made clear that the term third factor was used two ways in the theory, both as a factor of development and as a dynamism of valuation, or "the agent of conscious choice in development" (Dąbrowski, 1970, p. 73).

There is a marked difference between the level of detail and elucidation of overexcitability and its place within developmental potential between 1970 and 1972. Michael Piechowski worked again with Dąbrowski to produce *Psychoneurosis is not an illness* (1972), and it was in this book that the theory took its final form. Not only was DP described in detail, but the five developmental levels of Dąbrowski's theory were outlined. The OEs were described as constituting the "main form of a positive developmental potential," and their absence, or appearance only in weak or narrow forms, was indicative of a limited, or even negative, DP (p. 6). A limited developmental potential can also be identified by what is missing, not only strong OEs but also the absence of dynamisms.

The other major aspect of developmental potential, the dynamisms, were hypothesized to arise from the OEs during the course of development (Dąbrowski, 1996; Piechowski, 1975). Dynamisms are the mental processes that shape and direct development, and like the OEs, their presence or absence in developmental potential means the difference between a strong, limited, or negative potential (Dabrowski, 1972). Everything in TPD is hierarchical, and there are higher and lower levels of dynamisms, as well as different types (e.g., dissolving, developmental). Not all types of developmental potential or disintegration are positive. Certain combinations of OEs are not conducive to multilevel development, and when there is a preponderance of sensual and psychomotor OEs without the transforming presence of strong emotional OE, DP is considered limited or even negative (Dabrowski, 1972; Rankel, 1981).

The inner psychic milieu is made up of the dynamisms. Its presence is the most compelling indicator of a strong developmental potential (Dabrowski, 1970, 1972). But at the lowest level, there are no dynamisms, and consequently, there is no inner psychic milieu. The two types of disintegration, unilevel and multilevel, were first described in Polish by Dąbrowski (1949) as wachlarzowa (fan-shaped) and warstwicowa (multi-layered, or stratified). By fan-like, he meant what we now call unilevel, or that the experience of disintegration occurs on one plane, as if holding a fan horizontally (M. Piechowski, personal communication, March 30, 2017). Multi-layered is what we would now call multilevel, or the higher vs lower distinction found in a hierarchy of values. In unilevel disintegration, there are only the nuclei of an inner psychic milieu, because the majority of dynamisms are found in multilevel development (Dąbrowski, 1970). In TPD, there is a direct connection between having a rich inner life and experiencing in a multilevel way. The relationship between OE and the development of a multilevel perspective can be seen in this quote:

> Each form of overexcitability points to a higher than average sensitivity of its receptors. As a result a person endowed with different forms of overexcitability reacts with surprise, puzzlement to many things, he collides with things, persons and events, which in turn brings him astonishment and disquietude. One could say that one who manifests a given form of overexcitability, and especially one who manifests several forms of overexcitability, sees reality in a different, stronger and more multisided manner. Reality for such an individual ceases to be indifferent but affects him deeply and leaves long-lasting impressions. Enhanced excitability is thus a means for more frequent interactions and a wider range of experiencing. (Dabrowski, 1972, p. 7)

Dąbrowski's discussions of developmental dynamisms through these early works were based on his clinical research. The next step for the growth of theory was to study how these constructs worked in action, and that required research with human subjects.

Establishing an empirical foundation

Dąbrowski was aware that some of his constructs were difficult to test and support using objective instruments. This quote from *Existential thoughts and aphorisms*, under the pen name Paul Cienin, illustrates the situation well:

> What a great mystery in creating an inner autonomy! They ask me its origin because it is different and even opposed to hereditary tendencies and influences of the environment. I answer I don't know. I am wickedly delighted that I can't give a scientific answer, only an intuitive one. It is simply a problem so deeply human that science cannot give an answer. (Cienin, 1972, p. 21)

The situation in post-war Poland never provided Dąbrowski with conditions where he could test his theory in an environment of academic freedom. Few empirical tests of his constructs were reported in his work, outside of his study in Warsaw on gifted and talented children (Dabrowski, 1967, 1972). Once he was working as a visiting professor in Canada, at the University of Alberta, Dąbrowski finally had the chance to collect data and provide an empirical basis for his theory. He was supported by a research team that included Michael Piechowski, as well as Marlene (King) Rankel and Dexter Amend, who helped him with recruitment as well as collecting and analyzing the data. Sponsored by the Canada Council, Dąbrowski launched a three-year research project to present his theory through a multifaceted analysis of case examples (Dąbrowski & Piechowski, 1977, 1996).

The multilevelness research project included a search for participants and data to illustrate the levels of development that Dąbrowski had outlined in the theory, and it included a number of instruments used to screen for and assess developmental level (Dąbrowski & Piechowski, 1977, 1996). Out of over 1500 subjects screened for inclusion, 81 wrote an autobiography and responses to emotional stimuli (for example, great joy, great sadness, internal conflict, nervousness). Table 2 includes the names of the tests and the corresponding number of participants who completed each test. The Verbal Items and Personal Inventory were screening tools, and the majority of participants in the sample were graduate and undergraduate students who were given the screener as part of a class (Dąbrowski & Piechowski, 1977, 1996). Recruitment

was also extended to individuals who found out about the project outside of the classroom but expressed an interest in participating. In addition to the screeners, Neurological Examination, Verbal Stimuli (not the same as the Verbal Items), and Autobiography, the Wechsler Adult Intelligence Scale [2] was also administered.

Table 2
Multilevelness Research Project: Instruments and Participants.

Instrument	Number of participants
Personal Inventory	1590
Verbal Items	1258
Verbal Stimuli	950
Neurological Examination	127
Autobiography	81

Note. The source for this information is Dąbrowski and Piechowski (1996).

Ultimately, six cases were strategically selected from the pool of participants to illustrate the types and levels of development. However, despite the large numbers of participants in the sample, none reflected development that strictly exemplified the theory's higher levels (IV & V). Subject 6 was a woman whose results were described as accelerated multilevel disintegration, and included 16 ratings at levels IV and IV–V (Dąbrowski & Piechowski, 1996). Therefore, the biographical case of Antoine de Saint-Exupéry was included for level IV. The study supported Dąbrowski's belief that higher level development is not normally distributed, and requires more targeted sampling procedures.

The results were written up as a report to the Canada Council (Dabrowski, 1974; Dabrowski & Piechowski, 1972)[3]. Piechowski's (2008) task was to analyze the autobiographical material in each of the cases. He noticed that the design of the project called for finding expressions of the characteristics–the dynamisms–of each developmental level, but it did not include identifying overexcitabilities. He then developed his own method of atomistic content analysis and coded the material twice–once for expressions of dynamisms and a second time for expressions of overexcitability. He found 443 instances of overexcitability that later would be the basis for creating an open-ended Overexcitability Questionnaire. Table 3 includes the frequency of OEs by subject.

In the first volume of *Multilevelness of emotional and instinctive functions*, Dąbrowski (1996) gave examples of different levels of OE based on the hierarchical levels of development in the theory. Multilevelness is one of the core concepts of TPD, along with developmental potential (Piechowski, 1974), and the OEs were no exception to his view that constructs can and should be viewed through a prism of levels. At lower levels of development the expressions of OEs would be considered confined or narrow and indicating a limited DP. At higher levels of development, the OEs would be regarded as broad, or global, and as mentioned, they are the raw material from

[2] The number of participants given the Wechsler Adult Intelligence Scale is unavailable.
[3] The 1996 edition of Part 1 is a reproduction of the 1974 volume 1. This was revised and updated for the 1977 printing. Part 2 is a reproduction of the 1972 volume 2.

Table 3
Overexcitabilities by Subject

Subject	Psychomotor	Sensual	Intellectual	Imaginational	Emotional
1	3	1	0	1	0
2	12	1	0	0	5
3	3	1	2	20	20
4	10	6	26	21	47
5	16	1	6	7	59
6	15	3	12	20	53
Saint-Exupéry	13	6	15	15	23
Total	72	19	61	84	207

Note. The source for these data is Dąbrowski and Piechowski (1996).

which dynamisms emerge (Dąbrowski, 1996; Piechowski, 1975). The expressions of OE at a lower level are very different from the expressions of OE at a higher level (e.g., Dąbrowski, 1977, 1996)[4] and they are not necessarily considered developmental at those lower levels. Dąbrowski (1996) pointed out the importance of the OEs within his theoretical framework by stating, "The five forms of overexcitability are the constitutional traits which *make it possible to assess the strength of the developmental potential independently of the context of development*" (p. 16, emphasis added).

Piechowski's elaboration of overexcitability in the gifted

In 1970, Piechowski gave up his faculty position at the University of Alberta and became a student again, this time for a doctorate in counseling and guidance. As a research assistant in the Research and Guidance Laboratory for Superior Students at the University of Wisconsin-Madison he had an opportunity to collect data on overexcitability. He reviewed the 443 instances of overexcitability from Dąbrowski's multilevelness project and created the open-ended *Overexcitability Questionnaire* (OEQ) (Piechowski, 1979, 2008, 2014a). While Dąbrowski's work was not exclusively focused on the gifted, he frequently used the word gifted in descriptions of patients, and intellectual functioning was a part of his assessment with clients.

The first incarnation of the OEQ consisted of 46 open-ended questions, and it is the first known instrument to be used to measure OE other than the 100-item questionnaire, now lost, that was described by Dąbrowski (1938/2019) in 1938. The first sample to receive the OEQ were 31 adolescents who had been identified as intellectually gifted. Each one wrote responses to 46 questions. This yielded about 1,400 responses in which to find expressions of OE.

Piechowski continued working with Dąbrowski throughout his second doctoral program, from 1970–1975. Piechowski (2008) has written about their collaborative work via correspondence, and he also made trips to work with Dąbrowski in Ed-

[4] Ackerman (2009) and Tillier (2018) have both reproduced the original expressions of OE at different levels from *Multilevelness* in their work.

monton (M. Piechowski, personal communication, August 25, 2017). During this time, Piechowski (1975) wrote and published a monograph called "A Theoretical and Empirical Approach to the Study of Development," which includes a foreword by Dąbrowski, as well as a complete outline of the theory. In this monograph, Piechowski's (1975) elaboration of the construct of overexcitability first comes into view, and it is important to remember that the material used to develop his updated definition of OE came from Dąbrowski's research at the University of Alberta.

After collecting data from gifted students in Wisconsin, and finishing his degree, Piechowski (1979) contributed a chapter called "Developmental Potential," which appeared in *New voices in counseling the gifted*. This textbook, edited by Nick Colangelo and Ron Zaffrann, introduced the theory to the field of gifted education, and included a clinical example of multilevel potential by Kay Ogburn-Colangelo (1979). In his chapter on developmental potential, Piechowski (1979) provided an updated definition of overexcitability that was informed by Dąbrowski's research and his own:

> Each form of overexcitability can be viewed as a mode of being in the world, or as a dimension of mental functioning. Thus, the psychomotor mode is one of movement, restlessness, action, excess of energy; sensual mode–of surface contact, sensory delectation, comfort and sensuality; the intellectual mode–of analysis, logic, questioning, the search for truth; the imaginational mode–of vivid dreams, fantasies, images, personifications, strong visualization of experience; the emotional mode–of attachments and affectional bonds with others, empathy, the despair of loneliness, the joy of love, the enigma of existence and human responsibility. These are modes of personal experience and personal action. Each mode can be viewed as a channel through which flows information in the form of sensations, feeling, experience, images, expectations, etc. These five dimensions can be thought of as the main channels of perception–apprehension of the patterns of experience, and of conception–the formation of images of experience. They may be likened to color filters through which the various external impingements, and internal stirrings reach the individual. They determine to what occurrences and in what way one is capable of responding (pp. 28–29).

The full exploration of the accumulated material was presented in the book *"Mellow out," They say. If I only could: Intensities and sensitivities of the young and bright* (Piechowski, 2006)[5].

In our work studying the evolution of OE, we used computer-assisted qualitative data analysis software to examine the data from Dąbrowski's multilevelness project as well as the data Piechowski collected in 1973. First, we used QDA Miner to code all of the instances of overexcitability in *Multilevelness Part 2*. Later we acquired copies of the original OEQ data, and we were able to review those data as well. There is a marked difference between the two datasets because Dąbrowski's data were coded from autobiographies and open-ended responses to Verbal Stimuli prompts, and Piechowski's data were from questions designed to elicit responses that indicate the presence of overexcitability. The word count for the Dąbrowski dataset was 26,251 and for the Piechowski dataset it was 68,868. Piechowski drew from both of these

[5] Piechowski (2006, 2014) included the original 46-item OEQ in the appendix of both editions of *Mellow out*, and the book includes 434 excerpts from his original data.

datasets in developing the table of "Forms and Expressions of Psychic Overexcitability" which was first included in the chapter in *New voices* and later revised and shared in *Mellow out* (Piechowski, 2006, 2014a).

Overexcitability as a multilevel construct

In the data collected with the OEQ, it is clear that there are levels of overexcitability, and that sometimes a response is rich with more than one type. Piechowski found that responses were based on the individual's dominant type of OE, which is consistent with the theory (Dąbrowski, 1996; Piechowski, 1975). This means that a person whose emotional OE is strongest would answer with more emotionally charged responses than intellectual, psychomotoric, imaginational, or sensual ones. While all of the participants in the original study were identified as gifted, they did not all show evidence of OE in their written expressions.

As Dabrowski's (1972) work on developmental potential progressed, it became clear that a strong DP meant an increase in complexity because possessing multiple types of OE is the foundation for a multilevel perception of reality. These individuals are bound to collide with their social environment because they have difficulty adapting to everyday reality. In individuals with limited DP, there is more stereotyped thinking, conformity, and reduced creativity "for the sake of adjustment" (p. 9). The ability to conform and adjust to one's environment is often viewed as being synonymous with mental health, but Dąbrowski felt that the opposite was true. Because Piechowski's (2014a) data were collected with adolescents of varying ages, there is an interesting range of developmental potential, and, in some cases, the capacity for inner transformation was abundantly clear.

The open-ended OEQ allows for creative responses to questions designed to elicit OE in respondents, but not all individuals with strong OE also possess the verbal ability to express themselves well on paper. Attempts were made instead to use interviews with younger children who were less able to express themselves well with a pen and paper instrument (Piechowski & Miller, 1995). Individuals with dyslexia or dysgraphia naturally have a more difficult time expressing themselves using an open-ended instrument.

Dąbrowski (1996) did not view the OEs as being equal, and set them in a hierarchy with the emotional, imaginational, and intellectual types being most important, and emotional as the most critical for development:

> Developmental potential is strongest if all, or almost all forms of overexcitability are present. The three forms, intellectual, imaginational, and emotional, are essential if a high level of development is to be reached. The highest level of development is possible only if the emotional form is the strongest, or at least no less strong than the other forms. Great strength of the psychomotor and the sensual forms limits development to the lowest levels only. (p. 16)

One of Piechowski's graduate students conducted research with the original OEQ and later published a paper with him which contests the idea that it is the strength of the psychomotor and sensual forms that limits development. Lysy and Piechowski (1983) suggested that developmental potential is limited when the emotional and intellectual OEs are not strong.

The lower levels of overexcitability in Dąbrowski's descriptions in *Multilevelness* are not actually expressions of *over*excitability. Piechowski (1979) affirmed this distinction in his work:

> Only when the expressions of "excitability" are beyond and above what can be considered common or average do they make a significant contribution to development. And it is this criterion–contribution to a higher level of development–that guides the selection of expressions of *over*excitability apart from expressions that are not developmentally significant. Thus, for instance, one may readily consider violent and explosive temper as a sign of emotional overexcitability. But this is insufficient. Violent emotions which are uncontrolled, not reflected upon, and which do not occur in the context of a true and deeply felt personal relationship, do not count as emotional overexcitability in the sense of the term as used here. (p. 28)

The developmental significance of overexcitability has sometimes been lost in discussions about OE since Piechowski's work first appeared. For instance, two papers by Vuyk et al. (2016a, 2016b) attempted to displace the OEs with the claim that they are better understood as openness to experience, and such a view completely ignores the reality of levels of overexcitability and its place within a broader developmental framework. The theory of positive disintegration cannot be replaced by the five factor model of personality because Dąbrowski's theory is an alternative framework to the biomedical model in psychiatry, and his essential thesis that psychoneurosis is not an illness is not even remotely addressed by the research on openness to experience. Grant (2021) and Gallagher (in-press) have illustrated that while there are similarities between OE and openness to experience, Vuyk et al. did not make the case for conceptual equivalence.

Dąbrowski did not view the OEs as characteristics of giftedness, and it was not his intention to use them to identify gifted students. The terms overexcitability and nervousness were used interchangeably within his theory, and nervousness is not the same thing as intellectual giftedness. That being said, many individuals who are intellectually gifted also experience overexcitability. Within their place in the theory, as a multilevel construct, the OEs are complex and multidimensional, and complexity is a hallmark of giftedness, no matter what form it takes.

Asynchronous development and heightened intensity

Piechowski's (1979) chapter in *New voices* called for a different conception of giftedness, a move away from "intellective skills, and skills in general" and more of an emphasis on imagination and feeling (p. 25). This view was very attractive to many educators who valued the experience of giftedness over an achievement orientation. When we consider the elaboration of overexcitability in the gifted we must remember that it was perceived as more than simply a characteristic of giftedness to be used in the process of identification. The Columbus Group definition of giftedness as asynchronous development was informed by the work of Dąbrowski and Piechowski, and includes the OEs as *heightened intensity*:

> Giftedness is asynchronous development in which advanced cognitive abilities and *heightened intensity* combine to create inner experiences and awareness that

> are qualitatively different from the norm. This asynchrony increases with higher intellectual capacity. The uniqueness of the gifted renders them particularly vulnerable and requires modifications in parenting, teaching and counseling in order for them to develop optimally. (Silverman, 2013, p. 21, emphasis added)

The combination of advanced cognitive abilities and heightened intensity provide a phenomenological basis for giftedness that has become a well-accepted framework in gifted education. Research on the lived experience of parenting gifted and twice-exceptional (2e) children has found that parents appreciate asynchrony as a way of understanding the disparities in their children's development (e.g., Daniels, 2009; Kane, 2013; Wells, 2018). Dąbrowski (1935, n.d.) referred to multiple aspects of development occurring at uneven rates in nervous children, as well as gifted children, in his Polish and unpublished works:

> The school should have on its staff persons qualified to give advice in difficult individual cases. Such "advisors" should know, for example, that the uneven progress of a gifted child is often a positive phenomenon and one which indicates that the child is sensitive, and creative, but easily exhausted, and thus should be not only understood, but treated in a special way. Such "advisors" or counselors should also realize that an oversensitive child or a fearful child can be highly gifted, that the fear of examination or of answering questions in front of the class inhibits the child, sometimes immobilizes him. Although highly gifted, such a child is very often considered inferior to "normal" children. (Dabrowski, n.d., p. 281)

Silverman (2013) has described the most asynchronous children as those who are gifted with a second exceptionality, such as ADHD, autism, dyslexia, dysgraphia, or another difference that impacts functioning. The term twice-exceptional did not exist during Dąbrowski's lifetime, but this is a population where the OEs are found. Similar to highly gifted individuals, who often feel like aliens, those who identify as 2e report a profound feeling of otherness that is well-captured by TPD (Piechowski, 2014a; Wells, 2017).

Marlene Rankel, who assisted Dąbrowski, once wrote, "The higher the level, the more subtle the reality. Lower level realities are apparent to higher level realities, but not vice versa" (Rankel, 1981, p. 378). This difference is reflected in levels of asynchrony, overexcitability, and intelligence just as much as in the levels of emotional development. An extremely asynchronous child with strong emotional and imaginational OEs, coexisting with high intelligence, can appear incomprehensible to teachers and even parents who are not similarly endowed. TPD is the theory that can help such children understand the challenges they face and it can also provide insight into how to work with, and live with, strong developmental potential.

In his early work, Piechowski (1979, 1986) described DP as constituting the overexcitabilities and special talents and abilities. The dynamisms were not an explicit part of the conversation about DP until later, although anyone familiar with the theory would be able to detect them implicitly in his discussions of introspective emotional growth (1989) or emotional giftedness (1991, 1997). Years later, Piechowski (2003) returned the dynamisms to his definition of DP: "Originally, the defining characteristics of DP were five kinds of overexcitability plus special talents and abilities. Later, it became clear that the capacity for inner transformation had to be included" (p. 298). The capacity for inner transformation is another way of saying that the elements of the third factor of development can be detected. Piechowski's case study work on exemplars has illuminated

the expression of dynamisms at different levels of development, including Etty Hillesum (1992), Eleanor Roosevelt (1990), and Peace Pilgrim (2009). Piechowski (2020) has continued studying these exemplars using the lens of Dąbrowski's theory and its foundations of multilevelness and developmental potential.

Misunderstandings about misdiagnosis

Earlier in this paper we cited Mika (2006) in our discussion of the similarities between OE and ADHD. Her article was a response to a study that attempted to position OE in terms of misdiagnosis. The OEs are frequently brought into the conversation of misdiagnosis of the gifted, and we hope to discourage the view that there is a physiological difference between psychomotor OE and the hyperactivity displayed in children diagnosed with ADHD.

Not all of the nuances about OE that Dąbrowski described in his work have been captured in the OE research. For instance, Rinn and Reynolds (2012) described the hyperactive behaviors sometimes observed in ADHD as hard to distinguish from psychomotor OE (P OE), and they are not alone in their claim that there is a meaningful difference (e.g., Piechowski, 2013; Webb et al., 2016). It is our assertion that Dąbrowski's construct of P OE encompasses the very same behaviors that make up the hyperactivity-impulsivity dimension of ADHD, and that the presence of OE should not be perceived as a different type of motor excitability than hyperactivity. In fact, imaginational OE closely corresponds with some of the symptoms seen in the inattentive dimension of ADHD as well. Within the theory of positive disintegration, overexcitability makes it possible to understand issues of attention as disintegrative factors in development.

A problem with separating hyperactivity and P OE as discrete and different is that a child with P OE who should be served in school with accommodations might be denied services if they do not receive the label of ADHD. Labels are not necessarily limiting, but can open up services for the gifted child who also has a developmental disorder (Kaufman, 2018). Vuyk et al. (2016b) expressed a concern that "symptoms of psychological disorders might be assumed to be a manifestation of OEs and thus the individual might not receive adequate and validated treatment" (p. 62). We agree that this is a concern, and it must be understood that OEs *can* be symptoms of what would now be identified as disorders or as mentioned earlier, indicators of neurodiversity.

It is important to remember that much has changed since Dąbrowski's theory was first introduced to the field in 1979, including the creation in the DSM of diagnoses such as ADHD and autism. These conditions have always existed, but they have not always been named and supported the way they are now, in the 21st century. Similarly, the term twice-exceptional was not a part of the fabric of gifted education in 1979, and we must adjust our understanding of what it means to be gifted with other exceptionalities.

The future of overexcitability

The benefit of the theory of positive disintegration is that it provides a perspective that helps understand the aspects of a positive developmental potential that cannot be measured by an IQ or achievement test. When Dąbrowski was developing his theory, he was not attempting to explain giftedness as it is currently defined, in external terms

of what one can do or produce. Instead, this is a theory that celebrates a multilevel perception of reality and creative inner transformation.

Gifted individuals are not a homogenous group, but much of the research on OE has been based on the hypothesis that OEs are a personality characteristic of giftedness. We suggest that an appropriate shift would be to acknowledge that while not all gifted individuals experience OE, many do, and those who do can benefit from the decades of work on Dąbrowski's theory. There are many aspects of TPD that remain to be explored, such as Piechowski's (1989, 2014a) work distinguishing types of emotional growth based on his OEQ data. The characteristics of introspective emotional growth in particular deserve further examination. Processes of appraisal appear to be behind the dynamisms, and this is an area worth studying further (Falk & Miller, 1998). We can speculate about the theory and its concepts forever, but until further research is conducted on these constructs, we will not be able to resolve the mysteries that still persist so many decades later.

A recent article by De Bondt et al. (2019) made the case for TPD as a theory with continuing application in gifted education, and we strongly agree with their conclusions, including the need for revising the instruments used to measure OE. Although beyond the scope of this paper, there is a long history of research on OE in the gifted (Falk & Miller, 2009; Mendaglio & Tillier, 2006). Aside from the OEQ, which is an open-ended instrument, there are also objective instruments available such as the Overexcitability Questionnaire-Two (OEQ-II) (Falk et al., 2016). De Bondt et al. (2019) found that it is possible to use the OEQ-II to study emotional OE from a multilevel perspective, and we feel that their constructive criticisms can help inform development of future instruments to measure and study overexcitability:

> A hierarchical organization of human development is the hallmark of the TPD and, according to Dąbrowski, each form of overexcitability has a different expression, depending on the level of personality development (Dąbrowski, 1970c; Tillier, 2018). Although the OEQ-II does not define the five overexcitability factors according to a set of hierarchically structured facets, a multiple-level perspective can clearly be distinguished with regard to emotional overexcitability. For example, the item "I am deeply concerned about others" is situated on a higher, more humane and abstract level in the process of personal development in comparison with the item "I can feel a mixture of different emotions all at once." Therefore, we hypothesize that a two-factor exploratory structure will fit the data better than a one-factor structure. A two-factor structure that reflects the multidimensional and multi-stage process of disintegration would diverge from the FFM model, which does not include distinct levels of personality growth. (De Bondt et al., 2019, pp. 8–9)

Research based on a more complete history of overexcitability should examine its prevalence and impact in populations such as individuals considered twice-exceptional, and also individuals who have not been identified as gifted.

Conclusion

In the more than 200 years of medical recognition of nervousness and over-excitability, the term was used in the sense of pathology. In Dąbrowski's (1938/2019) first paper on overexcitability, he recognized its value as the intensification of perception, aware-

ness, and experience and, consequently, as a positive element in creativity and development. The construct of overexcitability preceded the development of Dąbrowski's theory by decades, but in developmental potential, it became part of one of the theory's foundations.

Dąbrowski believed that his concepts should live and evolve, and we can see from this excerpt in *Mental growth* that he never meant for his theory to be viewed as immutable and carved in stone:

> There is no intention here to establish "the Laws" of mental development. The theory of positive disintegration is to be considered mainly as a series of inductive empirical generalizations. Some of them have been confirmed in experimental studies. Others are mere working hypotheses which require a great deal of further research and possibly a modification or reformulation. In some cases it was not possible to go beyond statistical generalizations. The highly complex and evasive nature of the processes analyzed in the theory of positive disintegration, the insufficiency and notorious questionableness of knowledge we have accumulated up to now in this domain, and the novelty of the approach made it hardly possible to reach in every respect the degree of precision and empiricalness which would satisfy a methodologically sensitive and critical reader. However, it is the conviction of the author of the theory that they include theoretically important and practically useful insights and truths about the human form of mental life and development. They may deserve attention, at least as a starting point for further analysis and experimental study. (Dąbrowski, 1970, pp. 130–131)

Yet, little critical examination of Dąbrowski's constructs has occurred outside of Piechowski's work (Piechowski, 2014b, 2017). Tillier (2018) has provided in his book a secondary source and reference of TPD that includes updated reviews of the literature related to both overexcitability and the broader theory, such as neuropsychological research and resources on posttraumatic growth.

We hope that our work in this paper, tracing the origins and evolution of OE, will lead to fresh research on OE within gifted education and also outside of the field. Since the introduction of OEs in 1979, there have not been any peer-reviewed papers examining its history in nervousness, or its evolution from Dąbrowski's early works into gifted education, until now. Part of the problem was simply that the early work is in Polish, and it required translation into English. One important area of study to better understand OEs would be an examination of the experience of twice-exceptional students who are both gifted and identified with ADHD, autism, or sensory processing disorder. There is a significant overlap between the characteristics of these conditions and the overexcitabilities as described by Dąbrowski.

With this paper, we are challenging the readers to remember that the earliest work on overexcitability by Dąbrowski was connected to conditions that were viewed as pathological. In modern times, this construct applies not only to the gifted, but also individuals who may meet the criteria for ADHD, autism, and other "disorders" from a biomedical perspective. Dąbrowski believed that the different forms of overexcitability constitute the basis of a rich, multidimensional, and multilevel grasp of reality.

The theory of positive disintegration has a long and important history in the field of gifted education, thanks to Piechowski's application of overexcitability to the gifted more than 40 years ago. We hope our work challenges readers to con-

sider where else we might find positive disintegration in action. Twice-exceptional individuals who have been identified with not only giftedness but also ADHD and autism are prime targets for further research, as well as gifted adults who have struggled with various types of mental illness. The medicalization of psychological suffering has continued well into the 21st century, and Dąbrowski's theory remains open to us as a strengths-based alternative to mainstream deficit models that pathologize intense experience.

Additional information

Conflicts of interest

There are no conflicts of interest for the authors with this article.

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POCZĄTKI I EWOLUCJA KONCEPTUALNA WZMOŻONEJ POBUDLIWOŚCI PSYCHICZNEJ

Streszczenie: Konstrukt wzmożonej pobudliwości psychicznej ma swoje początki w zaburzeniu „nerwowości". Dąbrowski zróżnicował je w różne podtypy wiele lat przed publikacją pierwszej wersji swojej teorii dezintegracji pozytywnej. W tym artykule opisujemy początki wzmożonej pobudliwości psychicznej, zaczynając od prac Dąbrowskiego sprzed jego teorii, poprzez umiejscowienie zjawiska w koncepcji potencjału rozwojowego. Bazując na naszych badaniach wczesnych polskojęzycznych prac Dąbrowskiego, podajemy w wątpliwość sugestię, iż wzmożona pobudliwość psychiczna jest często mylnie diagnozowana jako zespół nadpobudliwości psychoruchowej (ADHD). Opisane są także prace Piechowskiego nad wzmożoną pobudliwością psychiczną w nauczaniu dla dzieci uzdolnionych, podobnie jak niezrozumienia i nadużycia związane z tym zjawiskiem. Bazując na naszym przeglądzie literatury, prezentujemy potencjalne przyszłe zastosowania oraz możliwości rozwoju badań nad wzmożoną pobudliwością psychiczną.

Słowa kluczowe: Kazimierz Dąbrowski, teoria dezintegracji pozytywnej, wzmożona pobudliwość psychiczna, potencjał rozwojowy