A THEORETICAL AND EMPIRICAL APPROACH TO
THE STUDY OF DEVELOPMENT

University of Wisconsin Madison

MICHAEL M. PIECHOWSKI
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* Received in the Editorial Office, Provincetown, Massachusetts, on October 25, 1974. Copyright, 1975, by The Journal Press.
FOREWORD

I am grateful to the Editor for giving me the opportunity to express my thoughts on the origins and subsequent formation of the theory of positive disintegration from a perspective of 40 years.

It is perhaps true that new highly dynamic theories arise not only from observation and analysis but also from a highly charged experiential process leading to the birth and development of new conceptions. This is certainly true of the theory of positive disintegration.

As a rule I am reluctant to indulge in personal disclosures, but I feel I must make an exception here. To a large extent the conceptions of the theory grew out of events experienced in my adolescence and youth. Already then I had a distinct need to see values in a hierarchical order. In my psychological makeup I had heightened emotional, imaginative, and intellectual excitability. The specific developmental dynamics was based primarily on these three forms of psychic overexcitability, as they were called later, rather than on the psychomotor form which, nevertheless, was also present in my constitution. These overexcitabilities had the effect of making concrete stimuli more complex, enhancing their emotional content and amplifying every experience.

This was especially true in regard to the question of death, suffering, the meaning of human existence, and the destiny of man. Experiences related to these perpetual questions went along two lines. The first was in regard to the suffering, death, and injustice inflicted upon persons very close to me; the second was in regard to the suffering, imprisonment and death of great numbers of people. I remember a battle during the First World War. When the exchange of artillery fire ended, fighting went on with cold steel. When the battle was over, I saw several hundred young soldiers lying dead, their lives cut in a cruel and senseless manner. I witnessed masses of Jewish people being herded toward ghettos. On the way the weak, the invalid, the sick were killed ruthlessly. And then, many times, I myself and my close family and friends have been in the immediate danger of death. The juxtaposition of inhuman forces and inhuman humans with those who were sensitive, capable of sacrifice, courageous, gave a vivid panorama of a scale of values from the lowest to the highest.

I learned about death very early in my life. Death appeared to me not just as something threatening and incomprehensible, but also as something that one must experience emotionally and cognitively at a close range. When I was six my little three-year-old sister died of meningitis. When I was young I witnessed death again during the First World War, and as a
mature man during the Second World War. These events brought a great number of experiences which demanded an answer, but the answer had to be complex and multidimensional in view of the forms of overexcitability mentioned earlier, since it was due to them, to my enhanced imagination, activity of thought, and emotional involvement that the content of my observations and experiences was greatly amplified. From the events of those times came an unappeased need to deepen the attitude toward the death of others and toward my own, toward injustice and social catastrophes, toward the discrimination between truth and falsehood in human attitudes and behavior.

In face of these questions I often felt broken and afflicted by their number and overwhelming complexity. I felt that these questions demanded answers that would be universal and that would penetrate deep. This need to penetrate deep became more and more associated with an intuitive understanding of the multilevel nature of phenomena. Superficiency, vulgarity, absence of inner conflict, quick forgetting of grave experiences, became something repugnant to me. I searched for people and attitudes of a different kind, those that were authentically ideal, saturated with immutable values, those who represented "what ought to be" against "what is." And it often turned out that among such persons the "what ought to be" was already there and at times in its noblest manifestations.

Experiencing the contradictions of values in everyday observations had its counterpart in extensive study and examination of conceptions and theories offered by Jackson, Janet, Freud, and others. In the development of my attitude toward these ideas, the discriminating criterion was the presence or absence of multilevel conceptions or at least some approximation to that. The presence of multilevel approaches in their theories made me receptive toward Jackson, Sherrington, Jung, and Rorschach, while the absence of multilevel components made incomprehensible to me psychoanalytic theories, Pavlov's theory, behaviorism, or even some of Adler's, ideas such as the assumption that there is no inheritance of psychological traits, or that there is only feeling of inferiority toward others but none toward oneself.

I could not agree with the idea of early childhood frustrations as an explanation for the origin and development of psychoneuroses when everyday observation and my clinical practice were demonstrating the link between psychoneurotic and creative processes. I could not accept the one-sided and unilevel transposition of experimental results with animals carried out by Pavlovians or behaviorists onto the complex, subtle and multilevel human mechanisms. I could not accept certain theories (Janet, Adler, and others) which associated human development with external conditions only and did not take into account the developmental potential of the inner psychic milieu.

In these searches I tried to base myself on broad comprehensive experiments and studies. On the basis of these studies and conceptions in which I perceived outlines of a hierarchy of values, I felt the need to create such a hierarchy of values which would be described with precision, empirically developed, and objectively testable.

One more remark. The recognition of the importance of multilevelness required that one looked for its elements and manifestations in all areas of human process and experimentation: that is, in neurophysiology, psychiatry, psychology, sociology, and education. The complexity of the phenomena of human life, as well as their multilevelness, could not be understood without the investigation of links, aggregations, and interactions of factors operating in the external environment, as well as, and foremost, of those operating in the inner psychic milieu.

Psychological and educational experiments enabled me to see the multilevelness of phenomena also in the area of education. A sensitive, capable, introverted child is often given negative evaluation because of his shyness and lack of self-confidence. How often does one see how psychoneurotics are pushed out to the margin, while society yields to the influence of psychopaths—individuals who act without inhibition, without scruples, without emotional responsiveness: that is, individuals who are deficient in the constituting elements of the inner psychic milieu.

The world of external and internal phenomena began to form itself in my experience as a world of values arranged in a hierarchy of levels. Values appeared to represent different levels. The span between the levels of a given phenomenon became by far more significant than the content of the term defining the phenomenon. Each level covered a distinctly different range of a given phenomenon. Thus empathy appeared as something different from primitive sympathy, primitive immobilizing fear as something totally different from and unrelated to existential fear, brutal and wild laughter as something different from and unrelated to a subtle smile manifesting depth of inner experience in respect to others and to oneself. It was striking that these disparate manifestations of behavior never coexisted in the same individual. Existential fears, obsessions, and depressions turned out to be unrelated to egocentric fears, obsessions, and depressions. The first were the result of excessive sensitivity, disappointments, sadness, and suffering;
the second were most often the result of lack of success in life, thwarted ambition, material losses—in short, of primitive egocentrism shaped by external stimuli.

In numerous mental disorders, and especially in psychoneuroses, I found again and again great creative and developmental richness. Such patients, not reconciled to their concrete reality but rather opposed to it, were undergoing psychoneurotic processes generated by the multidimensionality of their experiencing. They manifested trends and efforts in search of a reality of higher level. And often they were able to find it unaided.

The label “dégénéré supérieur,” applied to such individuals, became for me the very representation of an artificial solution to the truth that many mental disorders do not manifest degeneration but, on the contrary, a high level of overall mental development. On the basis of detailed biographical studies I saw that geniuses of mankind and saints manifested psychoneurotic processes, even borderline of psychosis, combined with the highest level of experience, as well as of understanding and attaining the highest levels of reality.

In relation to social structures these experiences led me to distinguish three groups composed of (a) primitive and brutal elements, acting toward their own advantage and often determining the course of events, (b) so-called normal individuals subordinated to the primitive ones, and (c) nervous individuals and psychoneurotics characterized by enhanced psychic excitability, mainly emotional, imaginative, and intellectual, who are pushed out to the margin and yet who create the highest and the most lasting values. These three groups formed themselves in my mind in a “natural” manner, with the first having the greatest developmental advantage, showing the greatest aggressiveness but no scruples, the second at a developmental disadvantage, and the third—developmentally the richest—being forced out. The third group is the most vulnerable in terms of individual and social development.

These three types of groups can be observed with some variation almost anywhere in social structures: in the family, school, administration, industry, higher education, international relations. Here again appeared the problem of multilevelness of social groups and of multilevelness of social values. The distinction of levels, their organization and development became for me the key to the answers I sought.

The definition of five levels of development of emotional and instinctive functions, their detailed description and elaboration of methods of their diagnosis, brought the concept of multilevelness to the realm of objective operations, similar to those employed in the study of human intelligence. This, in turn, allowed me gradually to elaborate philosophical ideas in regard to the problem of values. The distinction of levels of values is more meaningful and more crucial than the distinction of kinds of values. This introduces into axiology in place of relativism of values their hierarchization.

In conclusion I would like to say that perhaps it was a certain amount of cognitive, as well as experiential, potential that enabled me to reach to a multidimensional and multilevel reality and establish some of its dimensions. The consequences of such an approach are rather obvious for philosophy of education and for creating educational models, for diagnosis and therapy of mental disorders, especially of psychoneuroses, for comprehensive multilevel and multidimensional psychology, and for philosophy which in my approach represents an objective protest against the hegemony of positivism.

Finally, I would like to express my profound appreciation and affection for my young friend Dr. M. M. Piechowski, for his original and creative approach to the theory of positive disintegration, for his numerous conceptions enriching the fundamental structure of the theory and also those going beyond the present scope of problems encompassed by the theory.

Université Laval, Quebec City
Kazimierz Dabrowski
April 1974
ACKNOWLEDGMENTS

This monograph was produced in two phases. The empirical studies were completed first and presented for publication (parts III-VI). However, the Editor recommended a more thorough presentation of the theory and this was subsequently included (parts I and II).

In the first phase, Drs. John Hartz, Philip A. Morse, Leendert P. Mos, and Millard Susman were generous with penetrating criticisms and much needed encouragement. Drs. P. A. Perrone and J. L. Lee provided suggestions for the description and computation of results. Dexter R. Amend and Marlene King have been faithful companions in the struggle. Dr. Sylvia Sheridan—a nurturing associate, and Dr. K. Dabrowski—the protagonist, taskmaster, antagonist, creator of the impossible, and an unfailling source of strength, inspiration, and existential meaning.

In the second phase, the unflagging interest and stimulation generated by Dr. Philip A. Morse propelled the author toward unsuspected breakthroughs, while Dr. K. Dabrowski must be credited with bringing this part of the monograph into existence, the fruit of collaboration on the revision of the first volume of his book Multilevelness of Emotional and Instinctive Functions.

The author also wishes to thank Rosemary Hopkins for her grace and help in the technical production of the manuscript.

The major part of the research was carried out at the Department of Psychology, University of Alberta, Edmonton, Alberta, under Canada Council grants nos. 55-03099, 55-56099, and 55-56156 to Dr. K. Dabrowski, and with support received from the Department of Psychology of the University of Alberta.

MICHAEL M. PIECHOWSKI

SUMMARY

Developmental psychology, in spite of its dynamic growth, has not, thus far, generated a general theory of human development. Present developmental theories are either cognitive or ontogenetic, or both. All are descriptive. Their powers of explanation are limited. None of them include emotional development.

It is argued that a theory of development in order to claim generality must (a) include emotional development, and (b) offer means of explaining, rather than only describing, developmental transformations. A nonontogenetic theory of development, called theory of positive disintegration, appears to fulfill these conditions. It is built on Jacksonian principles of evolution of levels of functioning.

The central concept of the theory is that of multilevelness of developmental phenomena. Development is seen to be a function of the level of behavioral organization. The theory defines five levels. Each level constitutes a distinct structure. The dynamic elements of the structure of each level are identified. Positive disintegration is the name for the process by which the structure of a higher level replaces the structure of a lower one.

The theory explains different developmental patterns by introducing the concept of developmental potential (DP). Although DP is a purely logical notion, it is given observable dimensions designated as dimensions of mental functioning. There are five of these and they correspond to psychomotor, sensual, imaginative, intellectual, and emotional modes of functioning.

The first half of the monograph is devoted to the conceptual structure of the theory. The second half to empirical tests of the theory. Three such tests were made on data generated from an atomistic analysis of autobiographies.

The first test consisted of the comparison of developmental cross-sections obtained from different sources of data (subjects) with the overall pattern of five levels of development. The different cross-sections overlap with each other and with different segments of the total theoretical pattern. Superimposed on each other they reconstitute the total pattern.

The second test consisted of a comparison between computed and clinically derived values for DP for each subject in the study.

The third test was a comparison of DP values obtained from early and late parts of an autobiography.

An empirical equation for DP was used in the second and the third test. Parameters represented in the equation appear sufficient to account for individual differences in patterns and levels of development.
I. INTRODUCTION

A. The Need for a Developmental Paradigm in Psychology

In the last two decades developmental psychology has undergone an "explosion of knowledge" (42, p. vii). This dynamic output reflects the increasing significance of a developmental approach to the study of human behavior. Curiously, however, the concept of development does not appear on the official map of psychological systems (39) nor do the names of Gesell, Piaget, or Werner appear on the pages of a recent textbook devoted to the history of modern psychology (51).

The fact that the developmental approach is not recognized as a system of thought, or paradigm, is intriguing. For a long time development was treated as a function of age (31). Age, or time, was, therefore, just another parameter in the study of human behavior (58). Within such an approach development did not present anything distinctive.

The situation is different in biology. Here, since the time of Ernst von Baer in the beginning of the 19th century, development was observed as a complex process of differentiation: a sequence of transformations in the structural and functional organization of living organisms. The development of an embryo from a single cell into a complex multicellular organism proceeds through many stages each characterized by different morphology and different biochemistry. In consequence, the structure and functions of an organism at different stages of development can be so dissimilar as to be unrecognizable. Compare, for example, the tadpole and the frog, the larva and the butterfly, the human embryo in its first few weeks and the newborn infant. Such dissimilarities can also be found in the complex life cycles of fungi, ferns, or higher plants. Or take the extreme example of a virus which, after infecting a cell, vanishes so completely as an entity that this stage of his development has been called the "eclipse" (53). In some instances the different stages of ontogenesis of a single organism were described at first as different species.

The point of the above biological invocation is (a), if the phenomena of life, including human behavior, are to be understood, it is necessary to follow the sequence of developmental transformations; (b) the different stages of development can be so dissimilar that without knowing their succession they could appear unrelated; (c) there must be an underlying structure securing the continuity and regularity of development.

At the biological level this structure is the genetic material, and its function is storage of information. What would correspond to that structure at the psychological level we do not know. We do know, however, that the awareness of one's identity persists through wakefulness and sleep, through grave emotional crises, or through periods of amnesia.

It might be worthwhile to point out that in psychology the notion of structure is different than in biology. Biological structures are arrangements of molecules. They can be seen directly or indirectly. Psychological structures cannot be seen, and we know no molecular arrangements that correspond to them. This, however, does not limit our possibilities of analysis. Taking the lead from mathematics we can deal with psychological structures as purely logical notions (4). One can be encouraged by the fact that this is how genetics has developed. The physical nature of the gene was not known for at least 80 years—the gene as a unit of heredity was a purely logical notion. This particular ignorance in no way limited the development of genetic analysis.

The application of the knowledge of biological development to human psychological development was attempted by Gesell (20), Piaget (44, 45) and Werner (56, 57). Their attempts focused on identifying those general principles of biological development that could also apply to psychological development. Thus we have become familiar with directionality, individuating maturation, assimilation, accommodation, sequentiality, discontinuity, differentiation, and several others. Closely examined, these principles are essentially descriptive. They point to different aspects of the developmental process which cannot be distinguished from development itself. Thus they do not explain development because they do not identify specific processes or properties of the organism, independent of development, which could account for developmental transformations.

This, perhaps, is the reason why the developmental orientation in psychology, despite its vast membership and explosive output, has not risen to the rank of a system of thought. Developmental psychology has not yet produced a general theory of development.

The task of the present monograph is to present a theory of human development which constitutes a distinct conceptual system. The theory has sufficient generality to offer concepts and observable dimensions applicable to many areas of development, such as emotional, social, cognitive, moral, creative, sexual, abnormal. The theory is different from other developmental theories in an important way: besides general descriptive principles, it defines measurable developmental parameters, separate from the process of development. Another important aspect of the theory is that it emphasizes the significance of emotional development. The theory iden-
B. THE NEED TO REDISCOVER EMOTIONAL DEVELOPMENT

One of the forgotten areas of psychology is emotional development. Research and theories of development have focused on problems of cognitive development, while those of emotional development have been ignored. The situation was somewhat different in the past as witnessed by Jersild’s extensive review of emotional development research in the 1946 edition of Carmichael’s Manual of Child Development (30). However, this subject disappeared from subsequent editions of the Manual and became one of the white areas on the map of development psychology. Why this change?

For several decades one of the central issues in American psychology has been learning. Consequently the study of cognitive development found, in a way, a prepared ground. On the contrary, a systematic psychology of the emotions is a recent occurrence (e.g., 2, 6, 19, 28, 37, 54), too young and too limited theoretically and methodologically to have prepared the ground for a systematic study of emotional development.

Our understanding of human behavior and human development cannot be complete if emotional development is left out of the picture. Approaches to human relations that included affect did not consider its developmental role (e.g., 24, 43). The age-old problem of the universality and objectivity of human values and value judgments cannot be solved without reference to emotional development (16); similarly, the mystery of creativity and religious experience, often accompanied by rich affectivity, cannot be unraveled without reference to emotional development.

The need to bring emotional factors into the forefront of developmental dynamics is not arbitrary (although it may appear emotional), but stems from a comprehensive analysis of human development. Even more than the acquisition of symbolic language (48), emotional factors are significant in man’s becoming human. A general theory of human development is not possible if the emotional dimension is excluded.

The thesis presented here is the following. The key to the understanding of complex phenomena of human behavior lies in the developmental approach as a system of thought. Just as the theory of evolution reoriented biologists from describing isolated phenomena as finished unchangeable forms to viewing them as a progression of evolving patterns, so a general theory of human development may reorient psychologists toward viewing human behavior as a progression of evolving behavioral patterns. Such patterns are an interplay of hereditary, environmental, and conscious self-determining factors. The primary shapers of change in these patterns, however, are emotional processes.

In summary, in spite of the wide front of developmental research, a general theory of development, ranking in psychology as a conceptually distinct system of thought, has not yet emerged. The closest to such a general system are the theories of cognitive development. In our view a general theory of human development must also include emotional development because emotional processes are crucial in shaping the transition from human animal to human being. Analogous to the theory of evolution, a general theory could become an integrating paradigm for the numerous but disparate and seemingly unrelated fields of psychology.

With the exception of Werner’s theory, available theories of development appear bound to an ontogenetic approach. The theory of development to be presented here rests on an evolutionary rather than an ontogenetic conception of human development. Its central concept is that of multilevelness.
II. THE CONCEPTUAL STRUCTURE OF THE THEORY OF POSITIVE DISINTEGRATION

A. Multilevelness

In 1884 John Hughlings Jackson delivered three lectures on the *Evolution and Dissolution of the Nervous System* (29). In these lectures he presented the idea that progressive impairment of neurological activity, such as observed in epileptic seizures, descends step by step the evolutionary strata of the nervous system.

The nervous system retains in its hierarchical organization levels of different evolutionary age. The highest levels are the youngest; they are also the most complex. Higher levels control lower levels through inhibition (section II, B 2). Thus, when alcohol, extreme fatigue, or epileptic seizures dim consciousness and voluntary activity, the highest level of neurological functioning is impaired, or “dissolved.” The next lower level is now functionally the highest and the controlling one. But it is more automatic. If, in turn, this level is “dissolved,” the organism’s functioning descends again to the next lower and even more automatic level.

Jackson said that automatic actions are automatic because they are independent of other actions. An automatic action has to run its course; it can be stopped, but it cannot change its pattern or sequence. Functional complexity, on the other hand, requires intricate and mutually responsive mechanisms. With this in mind Jackson formulated three laws of evolution of the nervous system, two of which are relevant here: (a) Evolution is a passage from the most simple to the most complex. (b) Evolution is a passage from the most automatic to the most voluntary.

The essence of Jacksonian thought is that the highest—i.e., the most evolved—levels of nervous activity are the most complex and the least automatic. The significance of Jackson’s theoretical contribution lies in associating a hierarchy of levels of functioning with evolution. Jackson’s approach is multilevel and evolutionary.

Such a concept of multilevelness differs from that of Piaget. For Piaget conceptualizes development in terms of stages. Each stage represents a more complex and more efficient level of organization produced in the course of ontogenesis. It is the process of development which produces the different levels stagewise in orderly succession. Piaget’s approach is multilevel and ontogenetic.

The ontogenetic and the evolutionary aspects of the development of behavior appear together in the developmental sequences of reflex patterns observed in the fetus and in the newborn infant (25, 26, 27, 40). In early ontogeny the reflex pattern is widespread and undifferentiated; a localized stimulus elicits movements of large areas of the body. This is followed by the appearance of a wide range of discrete local reflexes with separate response areas. Finally, specific, purposeful, well-controlled sequences of movements become possible. Thus the early phases of movement control are automatic, the later ones deliberate and voluntary; the early phases are controlled by the evolutionary older brain stem and midbrain, the later phases by the evolutionary younger cortex (27). The transition from the early ones to the late ones requires inhibition of the early ones, analogous to Jacksonian inhibition of lower, more automatic levels by higher, more voluntary levels. For example, the infant is born with a grasping reflex which allows him to support his weight. This ability reaches its peak at the age of 40 days, then is gradually lost, and is not regained at the same level of proficiency until the age of 5. By then it is voluntary and deliberate, while the early automatic reflex is inhibited (40). This demonstrates how in the course of ontogenesis is acquired a level higher in the evolution of functions. The study of early development of behavior combines the ontogenetic, evolutionary, and multilevel approaches.

In the theory of positive disintegration (9, 11), *development is a function of the level of organization*. Emotional and cognitive development is viewed as a nonontogenetic evolutionary pattern of individual growth. What evolves is the structure of behavior. By “structure” is meant its logical conception (4). [See also section I, A and II, C 4.] The structure and its components are defined. The structure determines the particular level of development. The level of functioning is not produced automatically in the course of ontogenesis but evolves as a function of other conditions, which we shall examine later.

Emotional development lacks a distinctly ontogenetic pattern, even though Gesell (21) showed that there exist repeating cycles made of successions of emotional equilibrium followed by disequilibrium, inward and outward thrusts, and a synthesis of opposing feeling tendencies. This sequence is repeated spirally in three successive cycles between the ages of 2 and 16. However, the underlying structure of these eludes us. Knowing the components of the structure of emotional functioning is necessary if we are to explain the transformations occurring in its development. A multilevel approach allows us to distinguish the structure of different developmental levels, cognitive and emotional.

Making multilevelness the central concept in the approach to develop-
ment means that we now have a new key, or paradigm, with which to approach human behavior and its development. It becomes less meaningful to consider, for instance, aggression, inferiority, empathy, or sexual behavior as unitary phenomena, but it becomes more meaningful to examine their different levels. Love and aggression at the lowest level of development differ less than the lowest and the highest level of love, or the lowest and the highest level of aggression; at the highest level aggression is replaced by empathy (15).

At the lowest level of development different behaviors have a fairly simple underlying structure. With the progress of development toward higher levels the process of differentiation becomes so extensive that the differences between levels are by far greater and far more significant than differences between particular behaviors.

The concept of multilevelness is thus the starting point for the analysis of all forms of behavior and their development. It represents a “new system of thought,” suited to represent developmental approach on the official map of psychology.

B. POSITIVE DISINTEGRATION AS A GENERAL DEVELOPMENTAL PRINCIPLE

1. The Significance of Inhibition

In the process of individual evolution conflict with one’s milieu and with oneself plays a decisive role in inhibiting primitive impulses. Internal conflict appears as a factor of control. The conflict is more complex than the impulse it inhibits. The impulse represents a lower level of functioning, while the internal conflict, by virtue of its complexity and controlling effect, represents a higher level of functioning.

Inhibition is a fundamental feature of hierarchical control in biological systems. It comes in many different and quite complex patterns. It appears, for example, in the control of movements in early development, where the level of control migrates by progressive inhibition of the brain stem and the midbrain to the cortex (27). Pribram (49, p. 338) points out that “true neuronal inhibition is an organizing property of neuronal function, not just a depressant,” and quotes Sherrington, “Between the reflex and mind there seems to be actual opposition. Reflex action and mind seem almost mutually exclusive—the more reflex the reflex, the less does mind accompany it” (49, p. 104), which is another statement of Jackson’s principle that the more automatic an action the less deliberate or conscious it is.

Reflection, hesitation, and inhibition are less automatic than an immediate response to stimuli. They cannot be derived from the stimulus the way a tropism response may be derived; for instance, in positive phototropism, movement toward light appears automatically with the shining of light.

The less automatic but more voluntary responses which appear later in development are in conflict with the earlier more automatic modes of functioning. The less automatic processes disorganize and inhibit the more automatic ones. A disequilibrium results which precedes the emergence and organization of new and higher levels of control. Thus instability, and partial, or even complete, disorganization of behavior is necessary in the process of development from a lower to a higher level of functioning. In this process lower levels become more and more inhibited: i.e., more and more controlled by higher levels.

2. Positive Disintegration

Jackson did not specify the processes of evolution and the mechanisms by which a transformation takes place from a lower to a higher level, from simple to complex, from automatic and unconscious to voluntary and conscious. Many mechanisms viewed by him as “dissolution” are, in fact, mechanisms of developmental evolution. Dabrowski labeled them “positive disintegration” (9, 11).

The example of grasping reflex (Section II, A) is a good illustration of this process. Voluntary and deliberate control of grasping develops to replace an early automatic reflex. While the early grasping reflex is being “dissolved,” a new mode of operation slowly develops: a higher level of functioning replaces a lower one. But in the intervening period, which may be quite extended, performance drops, or may disappear entirely. It is a disintegration.

Positive disintegration means restructuring of the organization of affective and cognitive functions. It is called disintegration because the lower level of functioning must break down before it is replaced by a new organization of a higher level. The term positive is used in the same sense as when we speak of evolution from lower to higher forms of life. Rather than in terms of age or learning, development is measured in terms of structural and functional reorganizations. By this definition, if there is no restructuring, there is no development.

Individual development may follow the maturational stages of the life cycle without any profound psychological transformation (i.e., without
change in the emotional-cognitive structure). In such case there is no development in the sense of reorganization, and this developmental structure has been called primary, or primitive, integration. In such a life history an individual follows the path of environmental adaptation. He learns, works, and fits in, but he does not suffer mental breakdown or experience ecstasy. In contrast, when in a life history mental breakdown or true ecstasy does take place we have a disintegration (11).

Disintegration may be positive or negative. Development is associated with positive disintegration, dissolution of mental functions with negative disintegration, absence of development with primary integration. Levels of integration and disintegration constitute a hierarchy. Primary integration is at the bottom, then three levels of disintegration (one unilevel, two of multilevel) and at the top secondary integration. These levels are described in section II, E, and are listed in Table 1 under “Structure.”

The concept of development through positive disintegration means that development occurs when there is movement (i.e., restructuring) at least from one level to another. The least development occurs from primary integration to the first level of disintegration. Development is more extensive when it proceeds through several levels of positive disintegration. Development is most extensive when it reaches secondary integration.

Dabrowski (7, 11, 12) described and analyzed a wide range of phenomena of disintegration in relation to periods of life: e.g., adolescence or climacteric, particularly stressful experiences such as the loss of property, position, youth or beauty, spouse or child, or the event of a serious illness, and in relation to psyche-neurotic, gifted, creative and eminent personalities. External events triggering periods of disintegration cannot account for the great individual differences in how these events and their consequences are experienced and handled. Even less can they be invoked to account for those instances where a person deliberately seeks frustration and stressful conditions so that he would not stagnate in his development. Such development, propelled, as it were, from within, is a function of a strong developmental potential, and is not bound or determined by advancing age or environmental pressures. Such development, called accelerated, is particularly rich in positive disintegrations.

While Jackson looking at impaired functions of injured, intoxicated, or epileptic individuals considered only the negative aspect of functional disintegration, Dabrowski introduces the positive aspect of disintegration as a general developmental principle.

3. Limitations of General Principles

General principles are not very useful if they do not spell out specific factors with which to measure their operation. Thus, for instance, we find in Piaget a mention of lack of equilibrium as a necessary aspect of development (44). According to Piaget development proceeds through the inclusion of newly encountered aspects of reality (assimilation) and adjustment of available modes of functioning to concrete situations (accommodation). The interplay of these two processes, more and more active as development goes on, is called equilibration. Disequilibrium arises when these two processes are not balanced. Equilibration assists the organism in becoming integrated and adapted to objective reality. Nothing more is given to make possible an empirical grasp of this general principle. In Piaget’s opinion the interplay of assimilation and accommodation explains development, while in fact it is only a descriptive and uncomfortably general principle.

One could review and compare the contrasting features of equilibration and of positive disintegration. But then, we would be arguing the merits and uses of different descriptive principles, similar to Werner’s discontinuity, sequentiality, and differentiation, or Gesell’s reciprocal interweaving, developmental direction, and individuating maturation.

It is not enough, therefore, to say that equilibration, differentiation, or positive disintegration is the process by which individual development may proceed from one level of functioning to the next. One must identify the factors involved, so that one can measure their operation quantitatively; one cannot measure general principles. For example, we measure temperature, number of cell divisions, frequency of mutation, but we do not measure the laws of thermodynamics, the power of life, or the laws of chance. The factors must be separable from the process of development, if they are to serve in building explanatory schemata. One must, further, be able to show logical connections between different sets of measurable factors. When these conditions are satisfied, a general theory can begin to emerge.

We mentioned in the beginning that development is not a function of age (31, 58). Gesell argued that “psychological growth, like somatic growth, is a morphogenetic process. It produces progressive organization of behavior forms” (20, p. 298). This, however, still leaves open the question of what accounts for the endowment for development and what accounts for developmental continuity. At the biological level this endowment rests in the
genome. The expression of the genome, which results in the continuity of individual development, is governed by intricate regulation mechanisms of cellular differentiation. At the psychological level we need a corresponding concept simply because we are too far removed from the genetic basis of behavior to identify its true genetic mechanisms. Such a psychological concept is our next major subject.

C. Developmental Potential (DP)

1. Definition of DP

In order to account for the differences in the extent of development we introduce the concept of the developmental potential (13, p. 31; 47). Developmental potential is the original endowment which determines what level of development a person may reach if the physical and environmental conditions are optimal. Developmental potential has certain defining characteristics which allow us to detect its presence and measure its strength.

The defining characteristics of DP are forms of overexcitability and developmental dynamisms. Dynamisms are intrapsychic processes of positive disintegration which shape development and the expression of behavior. Each level of development has a different set of dynamisms. This is discussed in section IV and shown in Table 1 and in Figure 1. Forms of overexcitability are modes, or dimensions, of mental functioning. They are described in section II. D. In the simplest operational sense DP is the sum of the strength of dynamisms and forms of overexcitability detectable in a given individual.

Table 1 is an attempt to show how these concepts are related. The upper part is labeled “Development” to refer to all those characteristics which are observed or inferred in the process of development. The lower part is labeled DP to refer to the components of the developmental potential: namely, dynamisms and forms of overexcitability.

The forms of overexcitability can be observed and measured independently of the context of development. In this lies their value and significance as measurable developmental properties which do not enter into the description of development (the dynamisms do). When a given phenomenon can be accounted for in terms of factors which are not part of its description but whose operation can be measured quantitatively, then we are on the way to explaining the phenomenon. Thus, for example, we explain eye color in terms of pigments and genes necessary to make the
organism capable of producing those pigments. Neither the genes nor the pigments enter into the description of eye color.

In the next two sections we shall discuss developmental potential in relation to three groups of factors influencing development. This will allow us to examine parallels and differences with Piaget's notion of factors in development. Such generalized factors, however, are subject to the same limitations as general principles (section II, B 3). Then, the next step will be a discussion of DP as a structure. At that point we shall see that we can dispense with the three "factors" and proceed toward an analysis of development in terms of overexcitabilities and dynamisms.

2. Three Groups of Factors Influencing Development

Both Piaget (44) and Dabrowski (13) suggest certain conditions to be necessary for development, such as heredity and the physical and social environment. They call these conglomerates of conditions "factors." Piaget adds to this equilibration, while Dabrowski adds an autonomous factor.

The first group of factors embodies the genes and the permanent physical changes in the organism's constitution such as may occur during pregnancy, birth, or soon after. For the sake of simplicity we consider only the changes in the physical makeup of the organism ("Heredity" in Table 1). The first factor thus represents innate constitutional characteristics and potentialities of the organism.

The second group of factors represents all the environmental influences and pressures which come from other persons individually or as social groups ("Environment" in Table 1). One could venture to say, for example, that the theories of H. S. Sullivan are to a large extent an elaboration of the role of the second factor in individual development.

The third group of factors represents those autonomous processes which a person brings into his development, such as inner conflict, self-awareness, choice and decision in relation to personal growth, conscious inner psychic transformation, subject-object in oneself. When the autonomous processes appear, self-determination becomes possible, but not before. This means that an individual can transcend, at least to some degree, the sets imposed on him by his constitution and by the maturational stages of the life cycle. Even more, he can transcend the limitations of his social environment.

Piaget (44, p. 103) also mentions three factors in development—heredity, physical environment, social environment—and adds a fourth, equilibration. The first two of Piaget's factors correspond to Dabrowski's first factor. However, equilibration cannot legitimately be considered a factor in development because it cannot be separated from the process of development itself. One would be making the same logical error were one to consider positive disintegration a developmental factor. Positive disintegration is the process of development. Thus the difference between Piaget's theory and the theory of positive disintegration lies, at the descriptive level, in the inclusion of an autonomous factor in development.

3. Development as a Function of Developmental Potential

The developmental potential does not necessarily equip the organism to embody in its development all three groups of factors (see Table 1). Developmental processes can be limited to the first group of factors alone, or the first and second (47).

When developmental potential produces development controlled by factors of the first group, we are dealing with a psychopathic or sociopathic individual, indifferent to social opinion and social influence, pursuing only his own totally egocentric goals. Such individual is incapable of reflection on his actions; his life is a function of externals; he uses others as objects. This would correspond to Kohlberg's (32) stages 1 and 2. For instance, when Jimmy Hoffa described to an audience the depersonalization he suffered in prison, he described it only in terms of being deprived of the choice of haircut, clothing, and unrestricted use of his money.

Developmental potential can produce development which is controlled only by factors of the first and second group. We observe it in individuals who remain in the grip of social opinion and their own psychological makeup (e.g., social climbers, fame seekers, those who say "I was born that way" or "I am the product of my past") and do not conceive of changing. External influences from groups or individuals shape their behavior; changing influences shift its patterns or altogether deprive it of any pattern. Autonomous developmental processes do not appear, and if they do for a brief while, they do not take hold.

Developmental potential may produce development in which all three groups of factors come into play. The individual, by virtue of the autonomous component, struggles to overcome his social conditioning and constitutional typology (e.g., by countering extreme introversion through development of relationships with others, or countering extreme extraversion through development of taste for solitude and meditation). Such a person becomes aware of his development and his autonomous hierarchy of values.
There is thus an important difference between the factors of the first two groups and those of the third. The first two allow only for external motivation, while the third provides for internal motivation in behavior and development, and between the first two and the third there is conflict and opposition. This is another example where a question of determinants of behavior cannot be properly settled outside the context of development (see section II, A). Aggressiveness, enterprise, and leadership of "self-made" men may often appear to spring from an internal locus of control, but more closely examined often show no evidence of autonomous developmental dynamisms. Such individuals may be driven by a great deal of energy, but their motives and goals are geared to external norms of reward and success.

Developmental potential may be particularly strong when in addition to the autonomous factor, there are special talents, creative abilities, and particular strength of self-awareness and self-determination, such as manifested in great saints and leaders of mankind. Here development is characterized by great intensity and often by severe crises. It is accelerated and universal, meaning that it encompasses the whole personality structure and goes in the direction of high human values and ideals which hold across time and across cultures.

4. Developmental Potential as a Structure

Brainerd (4) defined structure as a purely logical notion that describes relations between elements constituting the structure. The previous two sections described developmental potential as composed of three groups of factors, each corresponding to one of the three sets of conditions influencing development (see Table 1). This, of necessity, encompasses such a wide array of conditions that it escapes empirical analysis and the possibility of defining the structural elements of DP. We noticed, however, that when DP is limited, development is also limited, and no amount of environmental enrichment can transcend this limit. When DP is present in its full complement, multilevel development becomes possible: i.e., a development in which autonomous inner processes become activated. What we call the "complement" of DP depends on which of the two definitions of DP we are applying: operational or structural.

The operational definition describes DP as a sum of dynamisms and overexcitabilities. In consequence, in the course of development the balance of expression between dynamisms and overexcitabilities may change. However, the potential, by definition, cannot change.

The structural definition describes DP as the original developmental equipment analogous to the biological genome. The elements of its structure must, therefore, be constant. Since dynamisms change and replace each other in the course of development, we have to find elements which are primary to the appearance of dynamisms.

Autonomous and accelerated development is always associated with multiple forms of overexcitability (11, 13, 14). They can be detected in children aged 2-3 (10, 14). It is thus logical to assume that they constitute a major portion of the original endowment. The dynamisms should then be the derivatives of overexcitability (section V, D). If this is assumed to be true, then the forms of overexcitability become the elements of the original structure of DP. Thus at the start of development DP can be equated with the complement of five forms of overexcitability.

Defining DP as a structure implies that its elements are recognizable and measurable, and that in turn the structure of each element can be analyzed. A first attempt in that direction has been made in an analysis of 433 instances of overexcitability identified in autobiographical material (46). Each form of overexcitability appears to have a number of distinct forms of expression. The following section describes them in summary form.

D. Five Dimensions of Mental Functioning

The five forms of psychic overexcitability were discovered by Dabrowski prior to the formulation of his theory. In his 1938 paper are described "types of increased psychic overexcitability" (8). Dabrowski noticed that many children, adolescents, and also adults, consistently overreact to external and internal (i.e., intrapsychic) stimuli. The important aspect of his observation was that while the stimuli were different, the overreacting appeared limited to certain dimensions. Dabrowski called this consistent tendency to overreact overexcitability; distinguishing five different forms: psychomotor, sensual, intellectual, imaginalonal, and emotional.

The characteristic of overexcitability is that a wide range of stimuli is converted to the dimension in which the individual is most reactive. For example, an individual with highly excitable imagination responds to emotional or intellectual stimuli at first with images, fantasies, or dreams. This imaginal process may be converted into an emotional or intellectual response. An individual with high psychomotor overexcitability will respond to the same stimuli by acting out his emotional tension, or by immediately setting out to solve an intellectual problem by trial and error.

In the extreme case of hypothetical individuals endowed with only one
form of overexcitability their only mode of experiencing would be limited to this one form. A psychomotor individual would only know how to be active, a sensual one only how to seek sensory pleasure, an imaginative one only how to live in a world of dreams, an intellectual one only how to apply logic, and an emotional one only how to love and worry. This illustration serves to show that the forms of overexcitability correspond to certain modes, or dimensions, of mental functioning.

The forms of overexcitability may be likened to channels through which information is flowing. The five forms function as selective channels, or color filters, through which the various external and internal stimuli reach the individual. Such channels determine to what stimuli and in what way he is capable of responding.

As modes of functioning, or experiencing, the five forms of overexcitability are present in rudimentary form in every individual. If they are regarded as channels conducting information, obviously the amount of information depends on the aperture of the channel. If more than one, or all five channels have fairly wide apertures, then the abundance and diversity of information (i.e., simultaneous experiencing in different modes) will inevitably lead to dissonance, conflict, and tension. Dissonance, conflict, and tension are the substrates of the developmental process of positive disintegration (14). In short, experiencing can be regarded as a kind of information processing.

The development of an individual advances and accelerates toward extensive psychological transformation as a function of the strength of these five modes of experiencing. This is why they are represented in the structure of the developmental potential. In this sense, and within this framework, overexcitability is developmentally significant, while plain excitability (i.e., a simple stimulus-response reaction) is not.

The particular interpretation given to these five dimensions requires a closer definition. The following vignettes of the five forms are based on the original description by Dabrowski (10) and on the autobiographical material analyzed by Piechowski (46).

1. Psychomotor

Psychomotor overexcitability appears to be a function of an organic excess of energy, or simply of an excessive excitability of the neuromuscular system. It manifests itself, for example, in rapid talk, violent games, intense athletic activities, pressure for action (typical, for instance, of delinquent behavior). Enhanced neuromuscular excitability facilitates transfer of emotional tension to psychomotor forms of expression. Emotional excitement or distress is converted into gesticulation, pacing, throwing objects, wanderlust, rapid talk, chain smoking.

2. Sensual

Sensual overexcitability appears to be a function of heightened experiencing of sensory pleasure, which may be manifested as a need for comfort, luxury, stereotyped or refined beauty, fashions, variety of sexual experiences, numerous but superficial relationships with others. Overeating or excessive sexual stimulation are the most common examples of transfer of emotional tension to sensual forms of expression.

3. Imaginational

Imaginational overexcitability in its "pure" form manifests itself through rich association of images and impressions, inventiveness, use of image and metaphor in verbal expression, strong and sharp visualization. In its less pure form, emotional tension is transferred to dreams, nightmares, mixing of truth and fiction, fears of the unknown, or vividly visualized emissaries of fear.

4. Intellectual

Intellectual overexcitability is manifested in the persistence to ask probing questions, avidity for knowledge, analysis, theoretical thinking, reverence for logic, preoccupation with theoretical problems. Intellectual overexcitability, in contrast to the first three forms, does not manifest the transfer of emotional tension to intellectual activity under distinct forms. When intellectual and emotional process of high intensity occur together, it always seems possible to separate the intellectual from the emotional component.

5. Emotional

Emotional overexcitability is a function of experiencing emotional relationships. The relationships can manifest as strong attachment to persons, living things, or places. From the point of view presented here intensity of feelings and display of emotions alone are not developmentally significant unless the experiential aspect of relationship is present. This distinction is very important. For example, when a child is refused candy he may throw a temper tantrum to show his anger. Or, he may go away sad thinking he is not loved. In the first case we have only a display of
emotion, in the second a relationship. The manifestations of emotional overexcitability include inhibition (timidity and shyness), excitement (enthusiasm), strong affective memory, concern with death, fears, anxieties, depressions, feelings of loneliness, need for security, concern for others, exclusive relationships, difficulties of adjustment to new environments. Relationships of friendship and love are developed usually with very few persons, and in extreme cases with only one. For an “emotional” person, as defined here, such exclusive relationships may be the only source of meaning in life.

Developmental potential is strongest if all, or almost all, forms of overexcitability are present. The three forms, intellectual, imaginative, and emotional, are essential if a high level of development is to result (14). 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 (see Table 1).

Differences in the strength, quality, and balance of different assortments of overexcitabilities account for forms of development which appear flambouyant and abundantly creative (e.g., some painters, actors, film makers), but which sometimes do not extend beyond level II. In such cases overexcitability may appear abundant and rich, yet it may lack the particular emotional and cognitive components which are necessary for the profound transformation that opens toward a multilevel phase of development. Here, a closer analysis should eventually reveal those expressions which are crucial for development to proceed beyond unilevel disintegration.

The five forms of overexcitability undergo extensive differentiation in the course of development. As shown in Table 1 the three forms, imaginative, intellectual, and emotional are essential for the formation of autonomous developmental processes. The autonomous processes are represented by multilevel dynamisms. These are the processes in which the individual begins consciously to participate and direct his own development. These processes depend on the presence, early in development, of the three essential forms of overexcitability. Thus we achieve a resolution for at least one of the three generalized groups of factors in development. The third group of factors can now be equated with multilevel dynamisms and the three forms of overexcitability.

The forms of overexcitability and the dynamisms are regarded as the moving forces of development: overexcitability being the original equip-

ment, and dynamisms the propellant derivatives. If the forms of overexcitability and the dynamisms actually are the only significant forces of development, then the assessment of their strength should yield an assessment of the strength of the developmental potential (section V).

E. LEVELS OF DEVELOPMENT

Even though the appearance of new structures and constellations of functions gives it a discontinuous pattern (57), development is a continuous process. The levels of development through positive disintegration are structural conceptualizations serving to identify the types of processes involved: integration and unilevel or multilevel disintegration. The concept of level means here a characteristic constellation of intrapsychic dynamisms already mentioned in section II, C 1 and described in detail elsewhere (15, 17).

A level is a distinct identifiable developmental structure, unlike a stage which may be merely a segment in a temporal sequence. Thus when we use the expression, “a level is attained,” it means that the structure of a lower level is replaced by the structure of a higher one.

Here again, the use of the expression, “transition from one level to another,” is colloquially convenient but inaccurate. In the process of development the structures of two or even three contiguous levels may exist side by side, although it must be understood that they exist in conflict. The conflict is resolved and the “transition” accomplished when one of the structures is either eliminated, or comes under complete control of the structure of another level.

Development does not occur at an even pace. There are periods of great intensity and disequilibrium (psychoneuroses, depression, creative process), and there are periods of equilibrium. Development achieves a plateau, and this may occur at any level or “between” levels, when the dynamisms are active in controlling behavior but do not carry on a further transformation and restructuring. This may denote partial integration. But the more development is advanced (i.e., the higher the level it reaches), the less possible it is for it to slacken off and cease to carry on the process of intrapsychic transformation. This is one reason why such advanced development was called accelerated (13). Here acceleration does not denote a rate of change toward completion but rather the greatest extent and depth of the transformation of personality structure.

The theory of positive disintegration defines five levels of development which we shall describe in turn. The levels and their defining characteristics
(i.e., dynamisms) are shown in Figure 1. The dynamisms are listed in groups specific for a given level. The group labeled "C" includes those dynamisms whose activity develops and extends over several levels.

1. **Level I: Primary Integration**

   Primary integration is the least differentiated level of development. This is depicted in the first vertical column of Figure 1. We note the absence of developmental dynamisms. In the broadest sense primary integration is an organization existing prior to development (i.e., prior to a restructuring of the emotional and cognitive organization). It is characterized by externality, rigidity, lack of emotional relationships with others (others are treated as things), instrumentality of intelligence (absence of reflection), absence of internal conflicts but occurrence of external conflicts. Behavior is oriented toward the satisfaction of basic needs and is in all its aspects egocentric, such as striving for positions of recognition and power.

2. **Level II: Unilevel Disintegration**

   Unilevel disintegration denotes a radical departure from the cohesive undifferentiated structure of primary integration (second vertical column of Figure 1). Externality is still very strong but there are deviations from it; rigidity is replaced by hesitation, doubt, wavering attitudes, and changing likes and dislikes. Emotional relationships with others exist but may have emotional components to excess (e.g., overdependence on others, jealousy). Patterns of thought are often circular, although they may appear sophisticated. Internal conflicts appear but are often more readily resolved by chance or superficial considerations than by internal struggle. When internal conflicts are severe, they lack the crucial possibility of developmental resolution. Behavior is essentially disoriented and conforming to external standards. It follows changing fads, ideologies, and leaders with little evaluation. When behavior is nonconforming, even rebellious, it is still without direction here—it is not based on autonomously developed principles. Because of the general looseness and lack of hierarchical structure at this level of development, it can result in the most severe mental disorders: psychosis, schizophrenia, phobias, psychosomatic disorders, alcoholism, or drug addiction.

3. **Level III: Spontaneous Multilevel Disintegration**

   Spontaneous multilevel disintegration is characterized by an extensive differentiation of psychological structures and functions (third vertical column of Figure 1). Internal experiential processes begin to influence be-

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**Figure 1**

A Theoretical Pattern of the Constellations of Dynamisms at Each Level of Development Through Positive Disintegration

Roman numerals designate levels of development.
cognitive and emotional life: "what is" against "what ought to be." Behavior is guided by an emerging autonomous, emotionally discovered hierarchy of values and aims. Self-evaluation, reflection, intense moral conflicts, perception of the uniqueness of others, and existential anxiety are among the characteristic phenomena at this level of development. Outside of a developmental framework such reactions are considered psychoneurotic. To uncover the developmental multilevel nature of most psychoneurotic processes constitutes the major thrust of the clinical part of Dabrowski's work, as well as of his efforts to show that processes of the same nature operate in the development of creative personalities (11, 14).

4. Level IV: Organized Multilevel Disintegration

Since level IV is also a hierarchical structure, and a further elaboration of that of level III, this accounts for overlaps between the two levels (Figure 1). But the distinguishing feature of level IV is conscious formation and synthesis—a directed and self-determined organization of development. In contrast to the spontaneity of level III, the establishment of an internal hierarchy occurs at level IV consciously. While tensions and conflicts are not as strong as at level III, autonomy and the internal hierarchy of values and aims are much stronger and much more clearly developed. Behavior tends toward self-perfection and service to others.

5. Level V: Secondary Integration

Secondary integration represents the highest level of development. At this level the process of developmental synthesis leads to a harmonious unity as a function of the "fullest dynamization of the ideal" (15). Those who achieve it epitomize universal compassion and self-sacrifice. There are no internal conflicts at this level, in the sense of opposition between "what is" and "what ought to be." Developmental differentiation reaches here its full fruition. The lower "what is" is replaced by the "ought" of the highest level, which thus becomes the new and ultimate "what is." The internal split disappears, but without it the ultimate synthesis should not have been possible.

There is something of a paradox here. In evolutionary development we observe increasing differentiation from the simple to the complex. But the harmony and the unity of cognitive and emotional functioning postulated for this level and resulting in a synthesis of most, if not all, previously differentiated developmental processes into one—personality ideal—is, perhaps, a novel phenomenon in psychobiological evolution. It presents a kind of dedifferentiation which, nevertheless, does not descend toward more automatic functioning, rather, it insures a more deliberate one, endowed with greater freedom and flexibility.

F. ON THE NONEQUIVALENCE OF SAME LEVEL STRUCTURES

The developmental sequences of positive disintegration are nonontogenetic. They are measured in terms of levels produced in the course of development with no distinct time schedule just as the process of evolution has none. The levels of development are, therefore, a nonontogenetic evolutionary scale. An individual developmental sequence may cover part of this scale, but none can cover its full extent. The hierarchy of levels of integration and disintegration serves as a chart on which individual developmental sequences can be mapped.

Since the extent of developmental progressions is a function of DP, one may ask whether a developmental sequence limited to level I, and a sequence extending to level II, and one covering I, II and III, all produce comparable level I structures. The answer is no. Reference to Table 1 and Figure 1 shows that the composition of DP necessary to produce level II or III is strikingly different from that which limits development to level I only. The difference in DP for development not reaching beyond level II and for development extending as far as level III and beyond lies in the difference in strength of three forms of overexcitability: namely,imaginational, intellectual, and emotional. These three forms, and especially the emotional one, are necessary for the appearance of multilevel processes. Whether these three forms suffice to give rise to multilevel processes is a different question, and one to which we do not know the answer.

A strong developmental potential will manifest multilevel components already in childhood (14). In consequence, the developmental path of a person so endowed from the start cannot at any time be totally limited to primary integration. One could say, of course, that the period of infancy is one of primary integration (11, p. 97). However, we cannot at that time identify all the components of the DP, which we can do more easily when the child begins to speak in sentences. By that time we can attempt to establish whether the developmental trend is integrative or disintegrative. Perhaps it would be worthwhile to indicate that a neurological examination developed by Dabrowski (18) does offer some suggestions for possible avenues of exploration of indicators of developmental potential in infancy.

A weak developmental potential will limit development to primary integration and unilevel disintegration. However, if the potential for exten-
sive unilevel disintegration is present, it will manifest early—for instance, in forms of psychosomatic lability (14). This means that if the potential to proceed beyond primary integration is present, the development can never be limited totally to primary integration. The nuclei of disintegration must be present from the start. What is more, they will differ in the balance of unilevel and multilevel potentialities.

G. THE ROLE AND THE NATURE OF CONFLICT IN DEVELOPMENT

The richer the developmental potential, the greater number and variety of conflicting and mutually opposing elements are brought into play, and the more disequilibrium is produced. That disequilibrium may be a necessary dynamic of development begins to be gradually recognized (44, chapter 4; 34), but there is still a long way to recognizing the conflict's developmental power. The nature and the extent of conflict as a developmental process has not been specified except for some aspects of cognitive development (55).

In the theory of positive disintegration a multilevel emotional conflict or a multilevel emotional-cognitive conflict is the sine qua non of dynamic of development. Earlier (section II, B) it was said that internal conflict becomes a controlling factor in the opposition between lower automatic (impulsive) levels of functioning and higher deliberate (reflective) ones. If we examine the forms of overexcitability, we can see that they are a conflict-generating substrate. Strong emotional and strong intellectual overexcitability lead to a powerful conflict between a personal, feeling, and relationship-oriented intuitive approach to life and an approach which is probing, analytical, and logical. Inevitably the two will clash many times in the course of development before a resolution of the basic conflict is achieved. If strong imaginational overexcitability comes into play, the conflict spreads even further. When sensual overexcitability enters the picture, conflicts arise between pleasure-orientation, which even in its refined aesthetic form touches only the surface of experience, and the more rigorous and profound demands of empathy, self-denial, moral principle, and need for self-perfection. There may be violent and enduring conflict between lower needs of comfort and sensual satisfaction and the higher needs of reflection, solitude, and attenuation of sensual desires, now regarded as interference.

Other constellations of traits, such as mixture of extraversion and introversion, or the opposition of impulsive and careless vs. deliberate and thoughtful behavior, are the seeds of many conflicts. Together with different forms of overexcitability, the conflicts sooner or later become multilevel (i.e., between "what is" against "what ought to be"). The dynamisms of level III, listed in Figure 1, receive their names from different types of cognitive (astonishment, positive maladjustment) and emotional conflicts (shame, guilt, disquietude, inferiority, dissatisfaction). The dynamisms of level II are formed for conflicting fluctuations of feelings (ambivalences) and actions (ambitendencies). The intensity of conflicts reflects the strength of these dynamisms, but the strength of development depends on the greater strength of the multilevel ones.

H. ON THE NONDERIVABILITY OF MULTILEVEL FROM UNILEVEL STRUCTURE

The structure of unilevel disintegration and the structure of multilevel disintegration are entirely different. In unilevel disintegration conflicts are horizontal, the opposing tendencies of equal value; everything is relative, arbitrary, governed by moment and circumstance. In multilevel disintegration the conflicts are vertical, the opposing tendencies of lower and higher value ("what is" and "what ought to be"): relativism and chance yield to a developmental hierarchy of autonomous direction and autonomous choice.

The two structures appear to have nothing in common. Consequently, there is no way in which to produce a multilevel structure out of all possible unilevel ones. Unilevel times unilevel times unilevel remains unilevel just as unilevel superimposed on unilevel remains unilevel. On the other hand, once a multilevel structure appears in the form of a strong multilevel conflict, which means that the activity of multilevel dynamisms as determinants of behavior is strongly registered, it cannot be collapsed back to a unilevel structure. The transition from a unilevel to a multilevel phase of development is both the most crucial and the most unexpected developmental event. It can be observed in status nascendi (section III, C., response unit no. 80), yet it cannot be readily explained.

One can think of integration and disintegration as opposite poles of a continuum between maximum of structure and total lack of structure. This gets us only as far as unilevel disintegration, which, in fact, may be temporary and may revert back to primary integration. However, unilevel and multilevel disintegration cannot be thought of as opposite poles of a continuum. The unrelatedness of these two types of structure contradicts the expectations of some theoreticians that lower levels of organization logically imply the higher ones (35, p. 168; 45) or that to study development one has to have a conception of its end state (36, p. 735). Indeed, one might well ask how
is a butterfly logically implied in the larva, or a complete virus in the unassembled mixture of proteins and nucleic acids. Similarly, nothing in the unilevel structure can imply a level hierarchy because multilevelness, by definition, is already hierarchical and multilevel. Therefore, it follows logically that the potential for multilevel development must exist already in the original endowment: i.e. in the developmental potential (Section II, F).

I. APERÇU

The significance and the originality of the theory of positive disintegration does not lie, as it is often believed (1, p. 103; 3; 23; 41; 52) in introducing the idea of disintegration as a positive developmental process. Understandably, this aspect of the theory is most important for clinical psychology, psychiatry, and education. Nevertheless, the significance and originality of Dabrowski's theory lie in its concepts of developmental structures, developmental potential, and the characteristics by which they can be detected and measured.

The concepts of unilevel and multilevel structures of behavior and development are entirely novel. These structures are recognized by the presence or absence of characteristic processes or operations called dynamisms. Integration is interpreted in a new way. Primary integration is equated with the absence of developmental dynamisms, hence with absence of development. Secondary integration is the culmination of development but not its cessation. Rather, it is the synthesis and unification of all developmental processes. And it does have a prominent dynamism by which it is unfailingly recognized—personality ideal. With a characteristic constellation of dynamisms being specified for each level of development one has a well defined basis for differential interlevel diagnosis (15).

The concept of developmental potential is introduced out of logical necessity to account for individual differences in the extent of development. This concept is not offered as an abstraction, however elegant, but is associated with observable traits—the five forms of overexcitability and their derivatives—the dynamisms—which allow one to assess its composition and strength. These traits are the key to and explanation of development through positive disintegration.

We shall now turn to the research and procedures which furnished the means of testing some of the features of the theory, in this case, (a) the constellations of dynamisms at each level of development, (b) the operational definition for the developmental potential \( DP = d + oe \), and (c) the constancy of \( DP \).

III. METHODS AND SOURCES OF DATA

A. HISTORICAL BACKGROUND

Dabrowski developed his theory over a period of many years beginning in the late thirties (7, 8). The concept of "Positive Disintegration as a Stage in the Development of the Individual" was published in 1949. The theory was fully formulated in the early fifties, but the book entitled "Positive Disintegration" had to wait a number of years before its publication was permitted in 1964. The same year a short introductory outline appeared in English.

The invasion of Poland in 1939 eliminated the possibility of any research or publication during the war. The postwar conditions, initially very difficult because of the devastation of the country and irreparable losses in highly educated and trained cadre, improved briefly only to deteriorate again because of political changes and pressures. In consequence, systematic research to test the developmental paradigm of the theory was not possible until 1969 when Canada Council awarded a three-year grant to Dr. Dabrowski, who at the time was a member of the Department of Psychology at the University of Alberta, Edmonton, Alberta. The empirical studies described here relate a portion of the results of that three-year research period.

In 1969 the constructs of developmental dynamisms and levels existed only in Dabrowski's description. One of the goals of the research was to relate the conceptual categories of the theory to verbally expressed behavior. To do this self-reports of subjects were submitted to complete analysis rather than being scrutinized only for typical expressions corresponding to the theoretical categories. Only in this way could one hope to demonstrate how to recognize a given dynamism or level of functioning in a variety of behavioral expressions.

The primary thrust of the research was to develop several separate methods of developmental analysis. The following methods were included: neurological examination, clinical interview, Wechsler Adult Intelligence Scale, and the autobiographical essays. The empirical tests of the theory to be described in the following sections are a byproduct of this methodological effort. In other words, the research was not originally designed to produce them. Rather, the attempt to carry out a complete developmental analysis generated data from which three tests of the theory were derived later.
B. Sources of Data

Volunteer subjects were asked (a) to write an autobiography (at least 8-10 pages long) relating their personal history from childhood to present in terms of their most important emotional experiences, dreams, crucial personal events, and (b) to respond in writing to a set of Verbal Stimuli describing their emotional associations and experiences. These stimuli were originally designed by Dr. Dabrowski to elicit material relevant to the developmentally most significant emotional experiences. The Verbal Stimuli are as follows: Great Sadness, Great Joy, Death, Uncertainty, Solitude and Loneliness, Suicide, Nervousness, Inhibition, Inner Conflict, Ideal, Success, Immortality.

In addition to the written essay material the subjects were interviewed, examined neurologically, administered an intelligence test (WAIS), and given a clinical diagnosis. The complete material used in the study is presented elsewhere (18). Here we shall focus only on the essay material of the autobiographies and the responses to the Verbal Stimuli.

From over 1500 subjects screened in preliminary testing a total of 81 autobiographies and 950 sets of responses to Verbal Stimuli were received. Autobiographies and Verbal Stimuli responses of six subjects were selected for their wide differences on the developmental scale of positive disintegration. Age, sex, and intelligence of the subjects are given in Table 2. Of the six subjects one was a high school student, the others were university students. Save one, they were not majoring in psychology.

A seventh example is Saint-Exupéry, the author of "The Little Prince." Among the 81 obtained autobiographies not one appeared to represent a full level IV which created the necessity of exploring other sources, especially writers, to insure availability of material containing direct verbal expressions of a person's mode of mental functioning. Dr. Dabrowski had chosen Saint-Exupéry. A limitation of this choice is the lack of an autobiography or a diary, but Saint-Exupéry's notebooks, letters to his mother, and his writings contain ample autobiographical material.

The selection of material was not random because persons at higher levels of development are less frequent in the population than persons at lower levels, a fact well established by other researchers using other multilevel approaches (33, 38). The aim was, therefore, to have each level of development represented at least approximately. In addition, the length and the richness of reported life history were also an important criterion in the selection. The selection was made by Dr. Dabrowski and his collaborators in Edmonton independent of the present task of developing a detailed analysis of the essay material.

The material from the six subjects plus Saint-Exupéry constitutes seven separate sources of developmental data. Each source reflects a certain pattern of development, not unlike a geological cross-section through many layers of accumulated deposits. Here the deposits are memories, perceptions, emotional conflicts, dreams, values, etc. Each source, depending on its richness and period of evolution, provides data which cover a lesser or greater part of the theoretical picture of development through positive disintegration.

It might not be out of place to point out that these are not case studies. Rather, they are examples of different patterns and levels of development. Several other cases would have served this purpose equally well provided they too were widely spaced on the developmental scale. The six examples were not analyzed to uncover their uniqueness, or show how the theory applies as one does in a case study (50), but to develop and demonstrate a developmental analysis. Thus each case is a separate source of data and a partial test of the theoretical paradigm.

C. Rating Procedure

In order to analyze the essay material a simple procedure was applied. The procedure rests on the idea that one should be able to recognize developmental variables in the manner a person relates to his own ex-

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**TABLE 2**

<table>
<thead>
<tr>
<th>Subject</th>
<th>Age &amp; sex</th>
<th>IQ</th>
<th>Number of response units</th>
<th>Number of ratings</th>
<th>$Y = b/a$</th>
</tr>
</thead>
<tbody>
<tr>
<td>no. 1</td>
<td>23, M</td>
<td>115</td>
<td>46</td>
<td>53</td>
<td>1.15</td>
</tr>
<tr>
<td>no. 2</td>
<td>23, F</td>
<td>129</td>
<td>96</td>
<td>117</td>
<td>1.22</td>
</tr>
<tr>
<td>no. 3</td>
<td>44, F</td>
<td>117</td>
<td>112</td>
<td>194</td>
<td>1.74</td>
</tr>
<tr>
<td>no. 4</td>
<td>17, M</td>
<td>120</td>
<td>162</td>
<td>325</td>
<td>2.01</td>
</tr>
<tr>
<td>no. 5</td>
<td>20, M</td>
<td>108</td>
<td>155</td>
<td>294</td>
<td>1.90</td>
</tr>
<tr>
<td>no. 6</td>
<td>34, F</td>
<td>140</td>
<td>182</td>
<td>346</td>
<td>1.90</td>
</tr>
<tr>
<td>SE (Saint-Exupéry)</td>
<td>44, M</td>
<td>113</td>
<td>261</td>
<td>2.31</td>
<td></td>
</tr>
</tbody>
</table>

Note: The number of ratings $b = D + P + F + OE$, where $D$ is the number of dynamism ratings, $P$ is the number of precursor ratings: precursors are expressions related to dynamisms such as their weak or initial manifestations; $F$ is the number of function ratings, functions are forms of behavior: e.g., anger, self-preservation, sexual behavior; $OE$ is the number of excitability ratings.

In order to check the internal consistency of the ratings the material from each subject was divided into two halves. The ratio $Y$ was then computed from each half independently. The product-moment correlation coefficient for these pairs of values of $Y$ is .97.
perience. The content of the experience, therefore, is not critical, but the manner in which a person experiences his life, is. The selectivity of the subject's memory aids us in identifying those dynamic factors which played, or still play, a vital role in a person's organization of his experience.

The material of each autobiography and verbal response was divided into small sections, or response units. The smallest amount of text, a sentence, or several sentences, which could stand out of context and remain intelligible, was designated a response unit (see Figure 2).

The number of response units, rather than the number of subjects, constitutes the proper N in this study, because each response unit is a sampling event in which the theoretical categories are measured. Our N is equal to a total of 866 response units.

Each response unit was rated in the following manner. First, an attempt was made to establish whether the expressed content was a manifestation of one of the developmental dynamisms (Figure 1). In some cases more than one dynamism was identified in a given unit. If no dynamism was identified, an attempt was made to establish what aspect of behavior the expressed content represented: e.g., sadness, joy, anger, fear, self-preservation, emotional ties, sexual behavior, etc. These are called "functions." Next, the response unit was assigned a level value in keeping with the descriptions of dynamism and definitions of levels (13, 15, 17). The level value is a choice out of nine possible: five levels, I, II, III, IV, and V, and four demilevels, I-II, II-III, III-IV, and IV-V. When this was finished the material was reevaluated for the presence of forms of overexcitability. Each response unit in the material from each subject was examined for the manifestation of one, or in some instances more than one, of the five forms of overexcitability.

Rating for overexcitability came into the picture somewhat late; i.e., after the first two or three cases were rated. As it turned out it was virtually impossible to rate a response unit simultaneously for dynamisms and overexcitability because of essential differences in these conceptual categories.

The lack of a clear-cut distinction between excitability and overexcitability poses a problem. Overexcitability means that the response exceeds the stimulus input. However, in material which is a written self-disclosure, one has no way of evaluating the strength of the stimulus.

One can bypass this problem by using the model of the five forms of overexcitability as dimensions of mental functioning (Section II, D). The model is applied as follows. In a response unit we look for expressions representing any one of the five dimensions without regard to the relative strength of the expression. For instance, if a subject reports a dream, then the very occurrence of the dream is counted as one instance of imaginal overexcitability without regard to content, or its impact on the dreamer. If the subject reports the content of the dream, for instance one in which he is rejected by a beloved person, then we count the dream also as an instance of emotional overexcitability because its content reflects the experiential dimension of relationship with another person. Thus the frequency of occurrence of a given form of overexcitability was taken as a reflection of the strength of a given dimension of mental functioning.

The criteria underlying both the identification and the numerical value assigned to each rating are explained elsewhere (18). They are discussed briefly at the end of the next section on reliability.

The following is an unabridged excerpt from a response to the stimulus Anxiety (later replaced by Uncertainty) by subject no. 3. The slashes indicate division into response units, numbered consecutively.

"In the world of images... Anxiety can overcome a person somewhat like a sudden fog. It slows one down, it makes it awkward to go about one's business normally."

"/Or from a grassy area one suddenly steps out into a muddy clay-like substance. Each step becomes more difficult, all becomes awkward./"

"/Or a steel reinforced brick wall. You are surrounded, can't escape, but there is a couch. How comfortable to lie down here and go to sleep, to forget about the wall./"

"/Or like being caught in a room with creepy, slimy, green ghost-like whiny creatures, screaming at you—fear—fear—fear—fear, coming closer and closer, all the phantoms of course, but still..."

"Shall I go on? Yes, the image of my anxiety has changed. It is now a very high open iron fence. But as I walk toward it, there is to be seen a world beyond, and I have learned to touch the fence that it melts down and I can step beyond."

The imagery is an expression of imaginal overexcitability. In the five response units we have five instances of imaginal overexcitability. Units no. 76-79 were rated as Fear, one of the many forms of behavior, or "functions" described by Dabrowski (15) at each of the five levels of development. The content of response unit no. 80 reflects perceptive self-analysis (designated Subject-object in oneself) and a process of developmental change (designated Inner psychic transformation). The fear is overcome, the unassailable wall replaced by a fence which not only permits to see ahead but which the narrator has learned to transcend."
The level ratings for these units are II for nos. 76-79 and II-III for no. 80. The "no-exit" experience is characteristic of unilevel disintegration. Seeing beyond and moving past the barriers of present limitations indicate transition toward a multilevel developmental process.

Figure 2 gives further examples to make clear the steps of the rating procedure as it appears in the complete report (18). The first example is an expression of absence of inner conflict, a characteristic of primary integration, or level I. The second example, already discussed above, is an expression of directionless anxiety. Lack of a sense of direction and general disorientation are characteristics of unilevel disintegration, or level II. In the third example there are hierarchical, or multilevel, elements of sadness expressed as a simultaneous experience of sadness and joy. This is also an instance of emotional overexcitability registered somatically ("lump in my throat"). The fourth example is a manifestation of the dynamism of inferiority toward oneself. Because of the expression of existential despair, it is also an instance of emotional overexcitability, the despair resulting from the awareness of loss of relationship with the rest of mankind. The fifth example is an expression of the self-preservation aspect of behavior (self-preservation function) and the dynamism authentism, both at a very high level of development.

The assignment of a dynamism or form of overexcitability to a response unit is called a rating. There are four rating categories. The total number of ratings is \( b = D + P + F + OE \), where \( D \) is the number of times dynamisms are identified, \( P = \) dynamism precursors, \( F = \) functions, and \( OE = \) forms of overexcitability. Precursors are expressions related to a given dynamism but suggesting no more than its initial or weak manifestation. Functions are forms of behavior, such as self-preservation, sadness, joy, laughter, sexual behavior. While functions appear at all five levels of development, their expression is determined at each level by a different set of dynamisms (15).

Each response unit is given one, or more than one rating. In the first example we had only one rating, in the other four, two ratings per response unit. This, then, is the frequency of appearance of different theoretical categories per response unit. If we average it over the total material from a given subject, we obtain a ratio. This ratio, called the yield coefficient \( Y \), is a useful constant, which appears in an equation for the developmental potential (section V, A).

We define \( Y = b/a \) where \( b \) is the total number of ratings, and \( a \) is the total number of response units in the material from a given subject. The coefficient \( Y \) is a constant characteristic for a given source of data. To
illustrate: if, for instance, all five examples quoted above were taken from one source, then we would have $a = 5$, $b = 9$, and $Y = 1.80$. $Y$ may be interpreted as reflecting the extent to which development is differentiated: i.e., the extent to which the subject’s reportage of his memories and experiences manifests a richness of behavioral categories and dimensions. In the case of a low level of development the coefficient $Y$ is low because there had been little differentiation and for this reason fewer dimensions of behavior came into play; especially, there is lack of multiple forms of overexcitability.

As shown in Table 2 the coefficient $Y$ does not appear to depend on age or intelligence. In particular, subjects no. 2 and 3 provided material of similar length (96 vs. 112 units), but their $Y$ coefficients are strikingly different (1.22 vs. 1.73). Furthermore subject no. 2 has higher IQ than subject no. 3 (129 vs. 117), or subject no. 5 (IQ 108). Comparing subjects no. 5 and 6 shows again great differences in IQ (108 vs. 140) but little difference in the amount of material and no difference in the value of $Y$. It may, therefore, be safe to assume that the value of $Y$ is not a function of age or intelligence.

D. THE QUESTION OF RELIABILITY

In any study of a set of variables related to human behavior the question of reliability of obtained results is immediately raised. In the studies described here it is too early to attack this question. We can only report, as shown in Tables 2 and 3, that the internal consistency of the rating process was very high, being .97 for the coefficient $Y$ and .94 for $DP$.

To begin with, the number of rating categories is very great. For every response unit there are 30 dynamics to choose from. A number of other categories were also used: namely, precursors of dynamism, functions, and forms of overexcitability. In addition, each response unit is assigned a level value, a choice of I, II, III, IV, or V, or of one of the intermediate values I-II, II-III, III-IV, or IV-V. Thus, for instance, a level IV dynamism may be rated at a value of II-III (or 2.5), III (or 3.0), IV-IV (or 3.5), and so on. In Figure 3 (see section IV, B) are entered only those dynamism ratings whose value is not lower than .5 from the proper level designation. This means that a level IV dynamism rated less than 3.5 was not entered into Figure 3. Such lower ratings of dynamisms were labeled “precursors.” For instance, in the example of response unit no. 80 of subject no. 3 given in the preceding section both dynamisms are rated as precursors. The unit is given a level value of II-III (2.5), while the lower limit for one dynamism (Subject-object) is III (3.0) and for the other (Inner psychic transformation) it is III-IV (3.5).

Because of the complexity of the rating process the autobiographies and the responses to Verbal Stimuli have been reported unabridged (18) in order for every response unit and every rating to be exposed.

What is presented here is the result of an effort to develop a procedure for relating the categories of the theory to recorded expressions of behavior. In the process of developing the procedure, data were produced which offered the first opportunity to check the logic of the statements of the theory. It is not claimed that these first empirical tests constitute a critical test of the theory. Rather, they are presented as a starting point for further research and for comparison with other theories. A critical test of the theory would require longitudinal studies and blind rating. At the present the rating process demands a thorough working knowledge of the whole theory, a task too complex for ordinary training of raters. It was found, for instance, that it is virtually impossible to rate simultaneously for dynamisms and forms of overexcitability. These categories are conceptually very different and require a different “mental set”; consequently they have to be detected in separate readings of the material. Ideally these ratings should be done by independent raters, which would complicate the training program and its design even further.

An extensive discussion of the problems and decisions facing a researcher who attempts a more comprehensive approach to the study of levels of behavior and development is provided by Loewinger and Wessler. They stress that training of raters is a long process extending into several months, and that, at the start, the raters must be selected on the criterion of capability to recognize behaviors of higher level. A more promising approach would be to develop more direct methods of tapping the developmental variables. To make this possible more extensive material needs to be analyzed to provide a pool of representative responses matching the description of each variable.

In summary, although the results presented here do not yet constitute a critical test of the theory, they come close to it by virtue of (a) the internal consistency of the rating process, (b) the independence of rating of dynamisms and overexcitability, and (c) the constancy of the developmental potential over lifetime. The internal consistency of the rating process was checked for such critical variables as $Y$ and $DP$ (section V, A and

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1 The rating process may be limited to dynamisms and overexcitability only. See p. 285n.
Tables 2 and 3). The independence of rating of dynamisms \(d\) and over-
excitability \(oe\) is particularly significant because of the relationship
between these two categories: namely, \(d + oe = \text{constant}\) for a given
subject (section V, A). The test of the constancy of developmental potential
is described in section V, D.

IV. ASSESSMENT OF LEVELS

A. LEVELS AS CONSTELLATIONS OF DYNAMISMS

Developmental dynamisms are defined as intrapsychic factors which
carry out the process of restructuring emotional and cognitive organization.
Each level of development is characterized by a different set of dynamisms,
depicted in Figure 1 and described in detail by Dabrowski (15).

The dynamisms are often referred to as the “forces” which carry out the
process of positive disintegration, as if somehow they were apart from it.
Actually they are the disintegration. If they are weak, the disintegration is
weak and limited (partial); if they are strong, the disintegration is strong
and all-inclusive (global).

Here we shall concern ourselves only with the overall picture of the
constellations of these dynamisms at each level of development as a means
of defining and identifying the construct of each level. The spindle shapes
in Figure 1 are meant to convey the idea that the dynamisms appear
gradually. The black shading denotes tension associated with the activity
of each dynamism. This tension gradually subsides in level IV. Personality
ideal (top line), whose activity intensifies with higher levels of develop-
ment, is the only exception.

There are no developmental dynamisms at level I. There are, however,
conflicts of self-centered interests against environmental blocking. Such
conflicts, supported by the cohesiveness of the primary undifferentiated
structure, are only external. The disintegration of this structure begins with
the mobilization of dynamisms characteristic of level II. The vectors of
change appear in sets whose different members come into operation more
or less at the same time. This is featured in the transition from level I to II,
and from II to III. The transition from level III to IV is less sharp. Level
IV is more “constructive” than “destructive” because it crystallizes and
solidifies the hierarchy emerging in level III. This contrasts with the
“destructiveness” necessary to move from level I to II, and from level II to
III. The latter transition constitutes a shift from an ahierarchical to a
hierarchical internal organization.

The C on the left-hand side at the bottom of Figure 1 stands for a group
of dynamisms which by themselves do not characterize any given level but
which find expression at several different levels. These dynamisms con-
tinue to develop their activity at several successive levels. For instance,
empathy is defined by Dabrowski (17) as a concern and understanding of
others combined with genuine readiness to help. It finds sporadic ex-
pressions at level II; at level III, it is not only more frequent but may become one of the moving forces of development; and at level IV, it is a pervasive force, fundamental to the organization of development. Empathy can thus be considered a developmental gradient and a sensitive gauge of the level of development (Dabrowski, personal communication).

B. Patterns of Dynamisms Found in Subjects

The patterns shown in Figure 1 are theoretical. The complete analysis of autobiographies and of the responses to Verbal Stimuli yielded data which allow us to construct naturally occurring patterns of dynamisms. Each such pattern obtained from a different source (subject) can then be compared with the overall theoretical scale of Figure 1. Each natural pattern can correspond only to a part of the total pattern because no life story can bridge the complete span of five levels of development. The individual patterns may overlap. Together they should reflect most of the complete theoretical configuration.

Each identification of a rating category, such as a dynamism or form of overexcitability, is like a point on the topological space of the subject's psychological structure reflected in his autobiography. The number of times dynamisms were identified in the material from the subjects in this study ranged from 9-177 among, respectively, 53 to 346 points taken. The total number of dynamism identifications is equal to 638 in 1590 ratings of an N of 866 response units.

Figure 3 is a graphic representation of the results. In each instance when in a response unit of a given subject a dynamism was identified, it was entered into Figure 3 as a dot. Each dot represents a separate occurrence of a dynamism. The Roman numerals at the bottom of the figure refer to levels II, III, and IV. Since level I has no developmental dynamisms it cannot be represented graphically here. The letter C designates the category C of Figure 1. The direction from left to right corresponds to the direction from bottom to top of Figure 1, except for C.

The boxes numbered 1 through 6 and the top one labeled SE represent material from subjects 1 through 6 and Saint-Exupéry, respectively. Each box is a profile of a naturally occurring constellation of dynamisms which can be superimposed on the full theoretical scale of Figure 1.

The bottom box represents the developmental dynamisms in the data from subject no. 1. The paucity of dots indicates lack of development. This points to primary integration, or level I.

In the data from subject no. 2 we find a few more dots representing developmental dynamisms. In addition to the three rows being occupied in
level II there is some occupancy in level III and in C, but not enough to conclude that there is any developmental progress from level II to III. Rather, development appears limited to level II.

In the data from subject no. 3 we find more dots in III and in C, but the distribution of dots is uneven. The overall pattern indicates an incomplete developmental transition from level II to III.

The data from subject no. 4 manifest the activity of all the dynamisms of levels II and III. This points to a wide front of developmental transformations and a comprehensive transition in progress from level II to III.

In the data from subject no. 5 we are dealing again with a very uneven pattern. Many dynamisms appear in levels II, III, and IV, but no level appears to exhibit a complete and balanced set of dynamisms. Although all the dynamisms of level III are manifested in this subject at least once, the distribution of their frequency of occurrence is very uneven and points to irregularities and discontinuities of development—a sharp contrast to the pattern found in no. 4.

In the data from subject no. 6 we find a complete and more or less balanced representation of dynamisms of both levels III and IV, and a residue in level II. This residue, let us hasten to add, represents memories and experiences of childhood. The overall pattern indicates transition from level III to IV.

The profile for Saint-Exupéry, as for no. 6, reveals some dynamisms at level II. These are limited to descriptions of his childhood and adolescence by others; level III, except for some residual manifestation of the same origin, is empty. Development is virtually all manifested at level IV. There are two spaces which are not filled. One of them (position 6 in IV) represents a dynamism which ceases to operate at level IV (see Autopsychotherapy in Figure 1), and its absence here is a minor but significant indication of the advanced development of Saint-Exupéry. The other, called Autonomy (position 9 in IV), is all-pervasive in Saint-Exupéry’s life and writings—he speaks always out of his own authentic experience and does not depend on other sources; for this reason it is difficult to identify any one response as particularly characteristic of the dynamism of Autonomy, unless one were to give the rating Autonomy to most of the responses. One could also raise the point that Autonomy may not be as much of a distinct dynamism as those which are more easily recognized; thus its role as a characteristic member of the level IV constellation might be less significant.

C. The Fit Between Theoretical and Found Patterns

In comparing the patterns shown in Figure 3 with the overall picture given in Figure 1 we find essential agreement. The rows of dots representing dynamisms cluster together. When they fill lower levels (II and III) fully, they do not fill higher levels (IV). They cluster in contiguous levels: that is, in II and III, or in III and IV but not in II and IV with the omission of III. When the higher levels begin to fill, the lower levels are gradually emptied. The only profile which departs from this pattern is that of subject no. 5 where levels II and IV appear incomplete, while III, although complete, shows disproportionate frequencies of dynamisms. While some dynamisms occur many times, three of them occur only once or twice. Such infrequent appearance argues against these dynamisms being strongly developed and active. Therefore, the pattern for level III can be considered virtually incomplete. However, even in this uneven pattern we do not observe a leap from II to IV which would clear level III.

Although the profile of subject no. 5 does not contradict theoretical expectations (while simultaneous presence of level II and IV dynamisms without those of III would it is not “clean”; it imposes a distinct strain on the fit with the theoretical pattern. By virtue of this it is a witness to the effort of trying to carry out a complete analysis. The goodness of the analysis rests on adhering to the rating procedure and attempting to unearth everything that is categorizable. In consequence, bias toward a desirable result is diminished.

The agreement between the theoretical patterns and those found in the subjects is good, but it is not clear at this point what a perfect agreement should be. We do not know how much particular dynamisms can differ in strength. We assume them to be unitary factors largely independent of each other. We assess their presence only on the basis of the frequency of responses representing a given dynamism.

The autobiographies and responses to Verbal Stimuli differed in length, yet we do not believe that the amount (above a certain minimum) affects the results. As mentioned before, we have expressed the amount in terms of response units. The autobiography and the Verbal Stimuli for each subject were lumped together. If the amount of material from subject no. 1 (46 response units) is made to be equal to 1.0, then the length of the material from the remaining subjects is a multiple of this; for no. 2: 2.1 (96 response units); no. 3: 2.4 (112 response units); no. 4: 3.5 (162 response units); no. 5:
3.4 (155 response units); no. 6: 3.8 (182 response units); and for Saint-Exupéry: 2.5 (113 response units).

The shortest autobiography and Verbal Stimuli (no. 1) are about \(\frac{1}{4}\) the length of the longest (no. 6). This means we could expect about four times more dots for subject no. 1 in Figure 3 (bottom left), if his material equaled in length that of no. 6. Since there are only seven dots, then, if the material was as long as that of no. 6, we could expect up to about 28 dots. This increase would most probably fill only the box for level II as in subject no. 2.

Closer analysis of the case reveals little, if any, processes of positive disintegration. Just as one swallow does not make spring, so these few dots are not yet evidence of disintegration. The few instances of unilevel dynamisms observed in subject no. 1 are expressions of occasional indecision or minor uncertainty in face of marriage. These do not in any way portend a more thorough process of disintegration. If compared in the context of the other subjects it would be more correct to say that these ratings were excessively generous. Nevertheless, once the rating criteria were fixed, they had to be applied consistently. In consequence, a minor ambivalence and a major one were counted on the same basis. In this way the impossible task of having to decide each time the value of a given response was avoided.

A profile of disintegration emerges more readily when its manifestations are frequent. For subject no. 1 this is not the case: out of 53 ratings only nine represent instances of dynamisms (19 percent). However, five of them are instances of Second factor which denotes susceptibility to environmental pressures rather than fissures in the primary structure; the Second factor alone is not a strong sign of disintegration. For the other subjects the percentage of dynamism ratings is much higher (Table 3, second column). For this reason we feel that subject no. 1 even in an autobiography four times as long would not produce much that would significantly alter his profile of primary integration.

Finding developmental patterns which fit the theoretical picture raises further questions. What accounts for the differences in development? Why is one person at the age of 23 (no. 1) found at the level of primary integration while another at the age of 17 (no. 4) is undergoing a complete transition from level II to III? Why do some who reveal delinquent behavior at a young age (nos. 1 and 5) show advanced development at the age of 20 (no. 5) while others do not (no. 1)? Why do differences in intelligence (no. 2 with IQ 129, no. 5 with IQ 108) not correlate with differences in the level of development? The key to being able to approach these questions lies in the concept of developmental potential. The assessment of developmental potential is our next subject.
V. ASSESSMENT OF DEVELOPMENTAL POTENTIAL

A. AN EMPIRICAL EQUATION FOR DP

Developmental potential was defined as the highest level of development an individual could achieve under optimal conditions (section II, C). Developmental potential is thus a measure of the original endowment for development through positive disintegration. Dynamisms and forms of overexcitability are postulated as the principal components of DP and at the same time as the observable signs of its presence. If so, then their strength should be a measure of the strength of DP. We can express the expected relationship by the following equation: \( DP = (d + oe) \times Y \) where “\( d \)” stands for the percentage of dynamism ratings in the total number of ratings for a given subject, “\( oe \)” stands for the percentage of overexcitability ratings in the total number of ratings for the same subject, and “\( Y \),” or “yield,” is the ratio of the total number of ratings (\( b \)) divided by the total number of response units (\( a \)) for a given subject. Tables 2 and 3 give the results.

<table>
<thead>
<tr>
<th>Subject</th>
<th>Dynamism ratings, ( d )</th>
<th>Overexcitability ratings, ( oe )</th>
<th>Developmental potential, ( DP = (d + oe) \times Y )</th>
</tr>
</thead>
<tbody>
<tr>
<td>no. 1</td>
<td>17.0</td>
<td>11.2</td>
<td>32</td>
</tr>
<tr>
<td>no. 2</td>
<td>39.4</td>
<td>15.5</td>
<td>69</td>
</tr>
<tr>
<td>no. 3</td>
<td>27.8</td>
<td>24.2</td>
<td>90</td>
</tr>
<tr>
<td>no. 4</td>
<td>34.6</td>
<td>34.0</td>
<td>137</td>
</tr>
<tr>
<td>no. 5</td>
<td>41.1</td>
<td>29.6</td>
<td>134</td>
</tr>
<tr>
<td>no. 6</td>
<td>51.0</td>
<td>29.5</td>
<td>153</td>
</tr>
<tr>
<td>SE (Saint-Exupéry)</td>
<td>48.3</td>
<td>26.0</td>
<td>172</td>
</tr>
</tbody>
</table>

Note: In order to check the internal consistency of the ratings, the material from each subject was divided into two halves. The DP was then computed from each half independently. The Pearson product-moment correlation coefficient for these pairs of values of DP is .94.

The coefficient \( Y \) was brought in for the following reason. In the material studied the number of ratings varies sevenfold: from 53 for subject no. 1 to 346 for subject no. 6, while the number of response units varies only fourfold from 46 for subject no. 1 to 182 for subject no. 6. Thus the subjects who produced a higher number of ratings also produced more ratings per response unit. This results in a dilution of a given category of ratings in the total number of ratings when they are generated with greater frequency. Let us take a hypothetical example of a case in which every response unit generates one \( D \) (dynamism), one \( P \) (precursor), one \( F \) (function) and one \( OE \) (overexcitability) rating; \( Y = 4 \). In such a case the frequency of dynamisms or overexcitability cannot be higher than .25. Suppose now that only \( D \) and \( OE \) ratings were assigned. If there is only one rating per response unit (\( Y = 1 \)), either \( D \) or \( OE \), then the frequency of dynamisms or overexcitability is .5. This would create the spurious impression that dynamisms were twice as active as in the first example (one \( D \) per one response unit), while, in fact, they occurred half as often: i.e., one \( D \) per two response units. This illustrates that greater variety and richness of rating dilute the frequency of the rated categories. In order to counteract this effect the percentage values for dynamisms and overexcitability were multiplied by \( Y \).

We must now examine more closely the equation for DP in light of the numbers given in Tables 2 and 3 and the values for the product-moment correlation coefficient. The high values for \( r \) show that the computation of the coefficient \( Y \) and of DP from the first and second halves of each subject's material (autobiography plus responses to Verbal Stimuli) is highly consistent. This means that neither the value of \( Y \) nor the value of DP varies between the split halves. The remaining term of the equation is the sum \( d + oe \). If the terms of this sum were constant in relation to each other, then the consistency of DP between the split halves would be trivial. To test this the correlation coefficient \( r \) was calculated for \( d \) vs. \( oe \) and found to be .57. To show more convincingly the lack of relationship between the proportion of \( d \) and \( oe \) in the split halves, the coefficient of alienation \( k \) (22) was computed and found to be .82, which is highly significant. In other words, the sum \( d + oe \) remains fairly constant, but the proportions of \( d \) vs. \( oe \) vary considerably. This is shown in Figure 6 for subject no. 6 and is described in section V, D.

B. PROFILES OF DYNAMISMS AND OVEREXCITABILITY

Figure 4 shows the distribution of dynamism and overexcitability ratings as a fraction of the total number of ratings. The dynamism profiles reflect the distribution of each subject's dynamism ratings across levels.

2 Millard Susman (personal communication) pointed out that \( Y \) is not necessary to find the value of DP. Since \( (d + oe) \times Y \) is equal to the sum of the percentages of dynamisms and overexcitability ratings divided by the total number of ratings, we can substitute \( Y = b/a \) in the original equation to get \( (d + oe) \times Y = [(d + OE)b] \times 100 \times b/a \). Thus we obtain Dev. Pot. = [(\( D \) and overexcitability ratings per response unit). This eliminates other rating categories (precursors and functions) from assessment of DP.
Different dynamisms characterize different levels. Each dynamism can be rated over a certain level range which extends from a demilevel below its proper level (e.g., II-III for a level III dynamism) to a demilevel or even a whole level above (see section III, D). In consequence the dynamism profile of a given subject reflects his developmental "center of gravity" (i.e., the level with most frequent ratings).

In subjects no. 2 and 4 there is a balance between unilevel dynamisms (II) and transitional ones (II-III) which mark the beginning of multilevel processes. The profile is much stronger for subject no. 4 than for subject no. 2. However, the profiles in Figure 4 do not tell whether all the dynamisms of a given level are present or not. Comparison with Figure 3 shows that the difference between these two subjects is striking, because in no. 4 all multilevel dynamisms begin to operate, while in no. 2 only very few. For subjects no. 3 and 5 the highest peak, or the "center of gravity," is located in level III but is much stronger in subject no. 5. Reference to Figure 3 shows similarity of pattern—uneven in both but much stronger in subject no. 5. The two peaks for Saint-Exupéry reflect the shift from his childhood and adolescence (level III peak) to his mature years (level IV peak).

The profiles of overexcitability reveal varying degrees of strength of each form of overexcitability; in some subjects certain forms appear to be absent. The low frequency of sensual overexcitability in all subjects may not be accurate. It is possible that in an autobiographical narrative, especially of subjects selected to cover the richest range of levels of development, sensual experiences might have appeared less important to relate. In several subjects (e.g., nos. 3, 4, and 6) the neurological examination showed the presence of fairly strong sensual overexcitability. Nevertheless, we have seen autobiographies in which sensual overexcitability appeared to be the most dominant form. In those cases manifestations of developmental dynamisms are scarce.

It is interesting to note that at a lower level of development (subjects no. 1 and 2) the psychomotor form is the most prominent. With the engagement of a greater number of developmental dynamisms (subjects no. 4-6 and SE) the emotional form of overexcitability becomes the most dominant.

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**Figure 4**

Percentage Profiles of Dynamisms and Forms of Overexcitability in Autobiographical Material from Different Subjects (Nos. 1-6 and Saint-Exupéry)

Roman numerals designate levels of development; P, S, It, Im, and E designate psychomotor, sensual, intellectual, imaginative, and emotional forms of overexcitability. The sum of the depicted values for dynamisms and overexcitability gives the value of the developmental potential for each subject.
The sum of the percentage values of dynamisms and overexcitabilities given in Table 2 and represented graphically in Figure 5 gives the DP value for each subject.

C. COMPARISON OF CALCULATED VS. CLINICAL VALUES FOR DP

The computation of DP from the data does not tell us how these values can be related to the original definition of DP as the highest level of development a given person is endowed for. The value of DP is not related to the actual level of development manifested at the time of analysis. For instance, Figure 4 shows that subject no. 4 displays a distinctly lower level of development than subject no. 3, yet his DP is much higher (Table 3).

To obtain a comparison between the calculated values of DP against those assessed in a different way Dr. Dabrowski provided an estimate of DP for each subject in the study. Figure 5 shows this comparison. The values obtained from Dr. Dabrowski's clinical assessment are based on interviews, neurological examination, and reading of the subjects' autobiographies and responses to Verbal Stimuli. These values, expressed on an arbitrary scale of 0-50, were produced several months prior to the completion of the unit by unit rating of the material and subsequent derivation of the formula for DP. The arbitrary scale from 0-50 corresponds roughly to the five levels of development with 10 points for each level. In order to convert the DP values from Table 2 to fit this scale, they were divided by 3.6.

It is perhaps worth pointing out that a linear scale is not best suited to reflect the size of DP. It is intuitively obvious that if the DP must double to move from the borderline of levels I and II (DP = 10) to the borderline of levels II and III (DP = 20), it should, at the very least, also double between levels III and IV, and IV and V. For the present, however, we must be satisfied with a linear equation to match a linear scale.

The agreement between the calculated and the intuitive clinical values of DP leads to three conclusions:

1. The developmental potential can be estimated in a sample of self-reported expressions of behavior on the basis of the frequency of responses representing dynamisms and forms of overexcitability.

2. What the clinical assessment achieves through experience and intui-
tive synthesis of many bits of different kinds of information, the rating procedure makes explicit.

3. The different dynamisms and forms of overexcitability appear sufficient to account for different patterns of development through positive disintegration. In consequence, they fulfill the role of theoretical unitary factors with which one can explain individual differences in development.

D. Constancy of the Developmental Potential

We assumed earlier that the developmental potential reflects an original endowment. Consequently, at different periods of life it should remain constant. This constancy should be preserved in face of very intense periods of development and even of dramatic change in the level of mental functioning or environmental shifts. The most reliable source of such information would be a longitudinal study. This is yet to come.

Nevertheless, retrospective semilongitudinal observations are available in the two sections of the autobiography of subject no. 6. In a remarkable fashion her autobiography has numerous age indications, particularly in recalling her childhood. The first 73 response units relate her memories from age 3 to 15; the remaining 109 units (including Verbal Stimuli) relate events from age 15 to 34.

The profiles of the distribution of dynamisms and forms of overexcitability in the two life periods of subject no. 6 are shown in Figure 6. We note several things. In the earlier period the amount of material representing different forms of overexcitability is much greater than in the later period. But otherwise the two profiles are similar; i.e., there is no displacement of the relative heights of the peaks. The percentage of dynamism ratings shows the reverse—the material representing developmental dynamisms in the earlier period is smaller than the later period. We also note a shift from the higher peak in the dynamism profile at level III for the earlier period to the borderline of levels III and IV for the later period. One must remember that for development to advance from one level to another, it is postulated that an enormous amount of developmental transformation must take place. A shift from level III to III-IV indeed reflects a great deal of development.

The values for dynamisms, overexcitabilities, \( Y \), and \( DP \) for the two periods are as follows (the values for the age period 3-15 are given first)—dynamisms: 37.8 and 60.6 percent; overexcitability: 46.0 and 17.2; coefficient \( Y \): 2.02 and 1.82; \( DP \): 169 and 141. The number of ratings for the two “halves” are 148 and 198. The values for \( Y \) and \( DP \) were entered into the computation of the product-moment correlation coefficient reported at the bottom of Tables 2 and 3. In the case of subject no. 6 the material was not divided into equal halves.

In view of the fact that the determination of dynamisms and overexcitability is not made directly (i.e., not with specific standardized instruments), the difference between the \( DP \) values for the different age periods is not excessively great.

The forms of overexcitability can be observed in young children, prior to the manifestation of developmental dynamisms (5, 14). The comparison of the data reflecting the two life periods of subject no. 6 supports this idea.
VI. CONCLUSION

The results of the studies reported here show that the theory of positive disintegration has empirical founding. The constructs of the theory have been identified in 866 samples of autobiographical material. A pool of 1590 ratings obtained on this material provided an opportunity to study (a) the pattern of distribution of these ratings over the theoretical categories, and (b) the pattern of distribution of the theoretical categories over the sources of data (subjects) in several different ways.

First, the dynamism ratings distributed themselves over subjects in clusters. Each cluster corresponds to part of the overall postulated collocation of dynamisms from level I to V, shown graphically in Figure 1. Each subject as a source of material provides a developmental cross-section. These cross-sections overlap in such a way that they reflect the pattern of Figure 1. This constitutes one empirical test of the theory.

Second, the postulated components of the developmental potential ($DP$)—i.e., dynamisms and forms of overexcitability—appear in these ratings with lawful regularity. Their relative frequencies vary in different developmental cross-sections, but the sum of their frequencies remains reasonably constant for a given subject. This was tested for an early and a late period of life recounted in one autobiography and provided the second empirical test of the theory: namely, of the constancy of $DP$.

Third, the distribution of values for $DP$ calculated from the data agreed with a clinically derived estimate of $DP$ for each subject. This constitutes the third empirical test of the theory.

The means by which these tests were made possible was the rating procedure. This procedure was built on the assumption that each dynamism, and each form of overexcitability, is a unitary factor essentially independent of the others. That was the working assumption. The theory, however, does postulate relationships between some of these factors, the most important being between emotional overexcitability and multilevel dynamisms. Nevertheless, it only specifies that emotional overexcitability is the necessary condition if multilevel dynamisms are to be had. Beyond this very general relation one cannot specify whether they will be observed early or late in the developmental history, nor at what level. Thus, the working assumption of the rating procedure is not invalidated by this general relation in the theory.

In view of the above discussion we may conclude that within the paradigm of the theory of positive disintegration, different dynamisms and
forms of overexcitability can be regarded as *unitary factors of development* amenable to quantitative analysis.

If we accept the hypothesis that dynamisms differentiate from forms of overexcitability, then these forms take on the role of *primary* factors of development. Thus the theory of positive disintegration offers the means by which one can account for developmental transformations in the level of cognitive and emotional behavior. The same means (i.e., the dosages of different forms of overexcitability) appear, at present, sufficient to account for the origin of individual variation in the patterns and levels of development.

The assemblage of these factors shows an underlying developmental continuity conceptualized as developmental potential. At the psychological level the developmental potential corresponds to the genetic assemblage at the biological level. Just as the genome was only a logical conception throughout most of the history of genetics and not until recently was it fitted with a molecular structure to explain the mechanisms of genetic continuity, so, too, at the beginning of the study of psychological continuity the developmental potential is but a logical conception.

Logical conceptions can be powerful tools. They allow us to carry out an accurate analysis of lawful regularities and their underlying structure independent of the physical nature of that structure. The exact analysis of the physical structure of genetic material did not make genetic analysis any more accurate but gave flesh to its abstractions. Thus we can hope that the results no less accurate than if we knew their physical nature.

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