

# Selective Serotonin Enhancers and the Theory of Positive Disintegration

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## Abstract

The increasing popularity of selective serotonin reuptake inhibitor (SSRI) medications apparently signals renewed hopes and expectations that a simple medical intervention can ease the hardships of day to day life and make us happy. These drugs, and specifically Prozac, have quickly come to dominate antidepressant pharmacotherapy, due in part to their mild side effect profile and their perceived effectiveness. Their popularity has been fuelled by wide and generally positive media coverage. The Theory of Positive Disintegration (TPD) promotes the viewpoint that often, psychological tension and conflict may be positive and a necessary precursor to psychological growth. This paper will explore the implications of the widespread use of SSRI pharmacotherapy and its impact on intrapsychic conflict. Implications in relation to the basic tenets and philosophical approach of the TPD will be explored and concerns raised about the overuse of pharmacotherapy approaches.

Recently developed drugs preferentially and selectively potentiate serotonin, primarily by blocking its reabsorption by cells. Several types of selective serotonin reuptake inhibitor (SSRI) drugs are currently in use: fluoxetine (Prozac), sertraline (Zoloft), fluvoxamine maleate (Luvox), and paroxetine (Paxil). Through cover stories in the popular press (Newsweek, March 27, 1990 and again February 7, 1994), and through popular books like *Listening to Prozac*, physicians and the public alike have quickly embraced Prozac, making it the most frequently prescribed antidepressant with sales of nearly \$1.2 billion a year (Cowley, 1994). Originally promoted as an antidepressant agent, Prozac has been administered widely for a variety of problems and has also been officially approved for use in anorexia and obsessive-compulsive disorders (Krogh, 1995).

Physicians are finding that many patients derive dramatic results on medications that enhance serotonergic activity and that patients often perceive major, positive changes in their feelings and outlook on life (J. Gilliespie, personal communication, April 1995; W. Ramer, personal communication, March 25, 1995). I believe that this raises serious questions about how patients seeking help will come to deal with both their presenting problems and with their core issues. Will the rapid "success" of the pharmacotherapy (and the rapid easing of distress) dissuade patients from pursuing a psychological understanding of their lives? In short, will they forego the often painful process of

theory that views suffering and painful challenges to the psyche as a necessary part of growth.

A long philosophical tradition has associated the need to suffer with the opportunity to grow. Both from religious and philosophical schools of thought, the message has been that life's pain is a necessary part of learning that challenges us to rise above, to find more strength, to reach inside and to discover our character. Pain and unhappiness play vital roles in validating a person's experience and in providing benchmarks to appreciate life better. Pain also motivates Man's search for meaning in life (Frankl, 1963) and personal creativity and growth (Morris, 1991).

Traditionally, the theories and therapies of psychology and psychiatry have emphasized the goals of alleviating suffering and of achieving and maintaining a balanced, "happy" life. The use of benzodiazepines, which reached its peak in the mid-70's, represents an earlier attempt to achieve "happiness" pharmaceutically and thus may be seen as a precursor to the current popularity of Prozac. Then, as now, the widespread use of medication was encouraged by the popular view that these drugs made for an "easier life" and by the belief that they had no apparent contraindications. With Prozac, not even an early, widely reported controversy over fears that Prozac triggered suicide, could douse the public's (or apparently Medicine's) enthusiasm (the suicide concern was first raised by Teicher, Glod and Cole, 1990).

Dabrowski's theory holds that conflict and psychological suffering have a necessary and vital role to play in a person's life and in his or her potential to develop the personality fully. A crisis creates an opportunity for change, the outcome of which is mediated by a person's innate personality attributes. If favourable, these characteristics will encourage change and personality growth in response to the stimulation and challenge presented by the crisis. To render the crises of life inert through medication might ultimately serve to mute the growth of those prematurely who have significant potential to endure and benefit from life's crises. Thus, the introduction of the widespread manipulation of neurotransmitter levels has major implications for Dabrowski's theory and for philosophies that emphasize the positive and necessary aspects of suffering.

### The Arrival of Mood Pharmacotherapy

In 1957 the antitubercular drug iproniazid was serendipitously discovered to have the "side effect" of raising mood. Within a year, 400,000 depressed patients were being treated with iproniazid (Kauffman, 1995). Research led to the discovery that three monoamine neurotransmitters (norepinephrine, dopamine and serotonin) were being potentiated by the inhibition of the enzyme monoamine oxidase. Several monoamine oxidase inhibitors (MAOIs) were subsequently developed to treat depression.

The discovery of another mood elevating drug (imipramine) and the discovery of the mechanism of synaptic neurotransmitter reuptake led to the development of the tricyclic antidepressants. Unfortunately, these early drugs affected the levels of all three monoamine neurotransmitters causing an unpleasant side effect profile (notably constipation and a dry mouth).

Prozac heralds another breakthrough, representing a new class of drugs that selectively increase serotonin levels by blocking its reuptake while leaving other neurotransmitter levels unaffected. Thus, SSRI drugs are about equal in pharmaceutical effectiveness to earlier antidepressants such as the tricyclics (eg. imipramine) but have far more tolerable side effects (Barondes, 1994).

## Serotonin

Serotonin (5-hydroxytryptamine, 5-HT) is found distributed throughout various cells in the body, with about one to 2 percent of the total found in the brain (Cooper, Bloom & Rosh, 1986). Serotonin cannot cross the blood-brain barrier but is produced inside the brain by a specialized type of neuron called the serotonin neuron (Jacobs, 1994).

Serotonin acts as a neurotransmitter between cells and is dispersed throughout the brain by an extensive projection of the serotonin neurons. These specialized neurons are concentrated in the raphe nuclei of the brainstem, one of the earliest and most primitive parts of the brain (Jacobs 1994). While "serotonin neurons constitute less than one-millionth of the total population of neurons in the brain," their effect is immense as "each one exerts an influence over as many as 500,000 target neurons"(Jacobs, 1994, pp. 458-459). The network branching from serotonin neurons in the brainstem is "the most expansive neurochemical system in the brain," extending to essentially all parts of the central nervous system (Jacobs, 1994, p. 458).

Serotonin is synthesized from the amino acid L-tryptophan by two enzymatic reactions that occur within serotonin neurons. Brain levels of serotonin are closely linked to plasma levels of tryptophan that vary rhythmically during the day and are directly dependant on the intake of dietary tryptophan.

Serotonin has extensive effects on "some fundamental aspects of physiology and behaviour, ranging from the control of body temperature, cardiovascular activity and respiration to involvement in such behaviours as aggression, eating and sleeping" (Jacobs, 1994, p. 458). Serotonin is chemically interesting as it is structurally related to several psychotropic agents including LSD.

Research, summarized in Jacobs (1994), links serotonin and basic motor activity. Serotonin neurons are preferentially connected to motor neurons involved in tonic and gross motor functions and increase their activity in response to a variety of repetitive behaviours like chewing or running on a treadmill. The serotonin system acts as a coordinator of the autonomic and neuroendocrine demands of gross motor behaviour and when activated, facilitates motor output and inhibits sensory input. When the serotonin system is inactive, motor output is 'disfacilitated' and sensory-information processing is disinhibited (enhanced). Serotonin neurons tend not to be connected with neurons involved in episodic or fine motor behaviours, for example, those involving the eyes or fingers (Jacobs, 1994).

Another interesting feature of serotonin neurons is that they have characteristic rates of electrical discharge that vary as general arousal levels vary. Base rate firing (awake but quiet) occurs at three spikes per second, firing falls silent during REM (dream) sleep, and rises to four or five spikes per

second during arousal.

The current biological theory of depression is based on evidence that biogenic amines are involved in mood regulation (Baldessarini, 1986; Kaplan & Sadock, 1991). "Heterogeneous dysregularities" in one or more amines are implied, generally involving excesses of amines in mania and deficiencies of amines in depression (Kaplan & Sadock, 1991). Jacobs (1994) draws connections from serotonin function to depression and compulsions. Depression, linked with low serotonin levels, is often associated with a slowing of motor and cognitive activity. The behavioural result is that depression allows a person time to withdraw and to contemplate one's situation (literally, to stop, listen and to think). Perhaps evolution has given us three responses to a threat; to fight, flee or to freeze. Others have also observed the adaptive function of depression, for example, Costello (1976).

Jacobs (1994) suggests that the repetitive activity of obsessive-compulsive disorders acts to raise serotonin levels and that the success of a pharmaceutically induced increase of serotonin acts by rendering the behavioural obsession unnecessary. Jacobs (1994) concludes that the links between mood and motor activity, orchestrated through the serotonin neural network, possess adaptive value and have been conserved through the evolution of the brain.

Besides playing major roles in mood and compulsions, serotonin has also been implicated in other complex behaviours. Low serotonin levels have long been associated with impulsive behaviour (eg. fire-setting), suicide (Kaplan & Sadock, 1991) and with a predisposition to violence (eg. Coccaro, 1989; Virkunen, DeJong & Bartko, 1989). Raine (1993), reviews research showing that groups of antisocial individuals display lowered central serotonin levels and he concludes that serotonin is involved in decreasing aggression. Wright (1995) even suggests that serotonin may "regulate self-esteem in accordance with social feedback" and thus, the level of serotonin in the brain may be both genetically set within some given range and may also be modulated by social experience (p. 74).

In summary, the roles played by serotonin in mood and various other neurological and behavioural functions are slowly beginning to be understood. Clearly, serotonin enhancement contributes to alleviating the symptoms of depression, however, a comprehensive model of the biology of depression and of serotonin's actions has yet to be presented.

### Prozac Becomes a Household Word

The introduction of the SSRI drugs has involved heavy media coverage and the suggestion that these drugs can "change" an individual's personality. Peter Krammer, a central figure in popularizing Prozac through his best-seller *Listening to Prozac*, reported dramatic improvements in patients. Krammer (1993, p. xv) went as far as to suggest that Prozac can make people feel "better than well" thus raising questions about the use of Prozac by healthy people (who are not depressed) who simply want to be happier or who want to change their personalities or lives.

As balanced and informative books on Prozac, written for the lay public, begin to appear (Fieve, 1994), more controversial and critical works are also appearing. An example of the latter is *Talking*

Back to Prozac (Breggin and Breggin, 1994). Breggin, a vocal critic of psychotropic treatment, assails the development, promotion and use of Prozac (Breggin, 1991; Breggin & Breggin, 1994).

The discussions on Prozac have contributed to the impression that Medicine will soon reach the point of enabling people to change their personalities and moods at will. Millard (1994) wrote that Krammer "conjures up the image of a society where valued personal qualities can be chemically engineered" (p. 18). Richard Restak (1993, p. 9) believes that "the new drugs that change the chemistry of the brain make clear that we can change our internal states deliberately" and that we are on the verge of "chemical attempts to modify character" (quoted in Begley, 1994, p. 37). These general impressions are promoted on the newsstand, for example, by the 1994 Newsweek cover headline, "Beyond Prozac: How science will let you change your personality with a pill."

In summary, the use and expectations of Prozac appear to have no bounds. It has been a rapid and effective agent in changing how people feel. The widespread use of SSRI medications affects people's phenomenological experience of depression and crises, and the way they will cope and react psychologically. Ultimately, it may affect their motivation to deal with their deeper problems. The full impact of this, both on the individual and for our therapeutic approaches, remains to be seen.

### The Theory of Positive Disintegration

The Theory of Positive Disintegration (TPD), developed by K. Dabrowski, is a complex and comprehensive theory of personality development (Dabrowski, 1937, 1964, 1966, 1967, 1977; Dabrowski, Kawczak, & Piechowski, 1970, Dabrowski, 1972; Dabrowski, Kawczak, & Sochanska, 1973; Dabrowski & Piechowski, 1977). As indicated in the introduction, the theory postulates that suffering, crisis and disintegration play vital roles in easing personality development. Dabrowski (1967, p. 76-77) said "we are speaking of a positive disintegration when it transforms itself gradually or, in some cases, violently into a secondary integration.' A second possibility is a chronic, lifelong state of disintegration. This would be termed a positive disintegration if it "enriches one's life, expands one's horizons, and produces sources of creativity (Dabrowski, 1967, p. 77). Dabrowski used the term disease in a literal sense and believed that the disruption of ease was often a motivation toward growth. How could personality growth or change be accomplished without sufficient motivation - that is, without dis-ease? How can one's personality change without a reordering of its initial properties and how is this to come about without first having a painful disordering of some sort occur?

### Developmental Potential and Overexcitability

Dabrowski observed that not everyone appears to have the same potential for personality development. He believed that developmental potential is set by the resultant product of a person's genetic potentials and of subsequent environmental-genetic interactions. Our specific interest here is in disintegration, the basic mechanism of development. Dabrowski postulated that developmental potential consists of several features that encourage and facilitate a continuum of disintegrative processes. Brief, partial disintegrations may be followed by reintegrations on the same level (no



growth) or by partial reintegrations at a slightly higher level (moderate growth). These changes generally involve quantitative developmental gains. Intense disintegrations that are more global and involve more dimensions of a person's life, may conclude in secondary reintegrations, representing developmental transformations and ideal growth in Dabrowski's theory. Such advancements differ qualitatively from previous growth because they involve new, different ways of seeing oneself and life.

From Dabrowski's perspective, one critical component of developmental potential is overexcitability (OE) in response to stimuli. Dabrowski clearly grounded the idea in a person's basic neurological constitution when he explained that "each form of overexcitability points to a higher than average sensitivity of its receptors" (Dabrowski, 1972, p. 7). Dabrowski distinguished five forms: sensual, psychomotor, imaginal, intellectual and affective (emotional). Emotional OE forms the cornerstone of advanced developmental processes, and if present, along with imaginal and intellectual forms, the three "give rich possibilities of development and creativity" (Dabrowski, 1972, p. 7).

When present, OE changes a person's basic view of life, as one "sees reality in a different, stronger and more multi-sided manner" (Dabrowski, 1972, p. 7). This causes a person to come into collision with many things, persons and events, creating a wider and more intense experience of reality (Dabrowski, 1972). In this sense, OE is a "tragic gift," contributing both intense positive and negative features. OE is positive in that one's perspective of life is enlarged, allowing one to appreciate the splendour and joys of life fully. OE can be negative and extremely upsetting as human suffering, injustice and sorrow are clearly brought into focus. A tragic sense of life may develop (Unamuno, 1972; Rubens, 1992) that can overwhelm a person emotionally and/or experientially (Gendlin, 1962) and may lead to depression, breakdown or even suicide. As these intense experiences and perspectives continue, they become multilevelled and lead to comparisons of the lowest, grim reality of how life is, versus the highest, real possibilities of how life could be and how it ought to be. OE operates in concert with this vertical, multilevelled view of life to create the conflicts and anxiety that motivate the search for personal meaning, fuel disintegrations and lead to advanced development.

The individual with an average level of excitability generally experiences emotions based upon a series of well-defined social contexts. In contrast, the intense experience of emotional OE can propel a person to discover a unique and personal sense of direction and meaning. To paraphrase Frankl, there is meaning in life and there is meaning in suffering and the discovery of the two are linked (Frankl, 1963). Self-examination of values is based upon a person's own unique experience of their emotional and cognitive dynamics. This view was shared by William James, who in 1900 emphasized that emotions form the basis of our values and meanings. The emergence of an autonomous developmental factor leads to a growing sense of how life ought to be. The lower and often robotic behaviour and values promoted by society, which are instilled by parental and institutional education, come to be seen in a different light. They are questioned and critically evaluated by the overexcitable individual. The result is the emergence of a hierarchy of individualized, personal values. Through the mechanisms of disintegration, the "what is" of instinct and socialization comes to be rejected and

replaced by "what ought to be"; a "new" view, reflecting the unique personality and value hierarchy of the unfolding, autonomous individual. As these internal values become more prominent, they increasingly influence a person's perceptions and behaviour. Accordingly, behaviour comes to be guided by the individual choices of the person. The presence of strong empathy, implicit in deep emotional experience, ensures that the developing personality will be founded upon sincere and authentic human values.

### Developmental Factors and the Continuum of Distress

Four factors seem particularly important in our discussion of development. The first three are from Dabrowski's theory, the genetic potentials for development, environmental experience and the strength of autonomous developmental dynamisms. The fourth factor I am adding is an individual's "optimal distress level." Too little conflict and one will fall short of the threshold needed to produce the motivation to change ("dis-ease"), however, too much distress may also impair one's ability to develop. At the height of a crisis, where does an individual fall on the continuum of distress? Dabrowski was very aware of the psychological demands of disintegration and emphasized the discontinuous nature of development. When challenged to excess, the psyche could breakdown, resulting in negative disintegration, psychosis or suicide (Dabrowski, 1967). Therefore, the use of medication might be a necessary option in some cases. The person has to survive their disintegration. Medication may be required to reduce distress and anxiety to prevent an individual from being totally overwhelmed. This balance is a difficult one because the person may seek relief from the intensity of their crisis. In many cases, Dabrowski encouraged people to view their crisis from a developmental perspective and to endure and learn from their distress. In many cases, the pain of life needs to be felt and the role of the therapist is reduced to "doing nothing when there is nothing to be done."

### The Developmental Respite

As noted above, Dabrowski saw that most people display discontinuous development. It is common to see many advances and retreats over time. When the psyche is in danger of being overwhelmed, it might retreat from disintegration. This could take the form of a positive regression through reintegration at the former level of functioning or by a partial reintegration on a slightly higher level. Dabrowski called this type of sequence a partial disintegration. When the pressures of disintegration appear overwhelming, the judicious use of a medication, such as an SSRI, could be considered to allow for a respite in the developmental process.

Working with medication to establish the optimal level of distress or in managing developmental respites would be particularly important (but most challenging) in the creative individual where the line between creativity and pathology may be blurred.

### Links to Creativity

The experiences of "creative" individuals may best exemplify our present concerns. Psychiatry has long struggled with creativity and the "madness of genius" (see eg. Prentky, 1980; Andreasen, 1987;

Post, 1994; Yewchuk, 1995). Various figures in artistic and creative fields have met with sad ends at the hands of psychiatric intervention. Francis Farmer, Antonin Artaud, E. Hemingway and W. Reich readily come to mind. Anthony Storr even suggested that Einstein's insights could have been a by-product of schizophrenia (White & Gribbin, 1993).

The need to suffer to facilitate creativity is also part of the artistic tradition ("to suffer for the sake of one's art"). For example, the high incidence of suicide and alcoholism is almost considered an occupational hazard among authors. As poet John Berrymore, who committed suicide, noted, "the artist is extremely lucky who is presented with the worst possible ordeal which will not actually kill him" (Morris, 1991, p. 195).

Jamison (1995) has clearly articulated the need for balance and understanding in the psychiatric intervention of persons with developmental and creative strengths. She states "useful intervention must control the extremes of depression and psychosis without sacrificing crucial human emotions and experiences" (Jamison, 1995, p. 67). The forces and consequent experiences that contribute to personality development overlap with the forces that shape the creative experience. This suggests that creative people, as a group, will be prone to acute psychological distress, a finding borne out in the literature (e.g., Andreasen, 1987; Arieti, 1980; Post, 1994; Prentky, 1980). Individuals who exhibit more potential for growth and creativity will also be more vulnerable to breakdown. The key question, as Jamison has articulated, is to balance support and intervention when required without dulling the creative experience.

## Conclusion

This paper has outlined the popularity and role of SSRI medications and has raised questions concerning the effect that rapid and effective pharmaceutical intervention will have on the psychological experience and motivation of those under treatment. This concern is especially relevant for philosophies and therapies that emphasize the potential positive aspects of human suffering. The TPD is discussed as an example of a theory that views conflict and disintegration as a vital part of the human growth experience. It is suggested that a model of development and intervention should consider genetic and environmental potentialities in relation to an individual's "optimal" distress level.

I hope that the concerns raised in this paper will add another important consideration in the judicious use of medications. Intervention must not sacrifice a person's opportunity to be fully human and must balance the risks presented by the breakdown (eg. suicide) versus the potentials for insight, growth and creativity. Ideally, intervention would take a supportive but passive role - being with a person through a breakdown that challenges but does not overwhelm, and that eventually leads to the achievement of new and significant insights.

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