

The Key Role of Emotions in the Schizophrenia Puzzle

Luc Ciompi*

*To whom correspondence should be addressed; Cita 6, CH 1092 Belmont-sur-Lausanne, Switzerland; tel: 0041 21 728 10 63, e-mail: cioluci@sunrise.ch

The aim of this paper is to show that the dynamic effects of emotions in schizophrenia are underestimated and partly misunderstood. This may be related to an insufficient consideration for certain key properties of emotions, especially their energizing effects. After introductory remarks on current notions on emotions in schizophrenia, I present an alternative view based on my concept of affect-logic and discuss some of its therapeutic implications.

Key words: affective-cognitive interactions/dynamic systems theory/bifurcation/milieu therapy/affective neuroscience/affect-logic

Current Ideas on Emotions in Schizophrenia

Our current understanding about schizophrenia, and in particular about the nature and role of emotions, still resembles a puzzle which is not yet properly assembled. Schizophrenia is generally understood as a primarily cognitive disease—a disorder of thought—in which the dynamic effects of emotions are negligible. Kraepelin¹ and Bleuler² had already mainly focused on “flat” or “inappropriate” emotions as core features of the illness. This early emphasis on emotional deficits is now reinforced by research showing deficiencies in the recognition and expression of emotions in persons suffering from schizophrenia.³ A closer look provides, however, a more complicated picture. Intense emotions are clearly present at various stages of the illness. Certain emotions, especially negative ones, may be felt even more strongly by persons with schizophrenia than by others.⁴ Bleuler also described both an underlying emotional sensitivity and lability with sudden emotional outbursts and unexpected “normal” emotional reactions even in advanced stages of the illness. His conclusion was that “the capacity of the psyche to produce affects has doubtlessly not disappeared.” He also emphasized the “switching power” of affects on cognition and their crucial role in all psychopathology.⁵ Conrad⁶ and other investigators who carefully analyzed the “retreat from sanity”⁷ described

overwhelming feelings of fear, anger, or elation which frequently preceded the outbreak of acute psychoses. They sometimes also observed a reduction of the emotional tension when a fully structured psychosis emerges (eg, a delusional system). Eventually, more than 20 empirical studies on the so-called expressed emotions (EE) confirmed that the outbreak or exacerbation of acute psychotic symptoms is significantly correlated with a critical increase of emotional tensions in and around persons at risk.^{8,9} Zubin’s and Spring’s generally accepted stress-vulnerability hypothesis of schizophrenia also speaks for a dynamic role of emotions related to stress.¹⁰

In addition, both long-term observations and psychoanalytic explorations reveal that extreme feelings of elation or existential fears (eg, of being annihilated, eaten, projected into the cosmos) are often hidden behind an indifferent surface.^{11,12} Everyday observations by people who live closely with persons suffering from schizophrenia and spectral analytic EEG findings¹³ both point in the same direction. Bleuler also noticed that the apparent parathymia (a discrepancy between manifest cognitive content and expressed emotions) often vanished when hidden contents of thought were taken into account.² There is no discordance either, but on the contrary a striking concordance between, on the one hand, emotional lability and incoherent thought and behavior in the acute psychosis and, on the other hand, flat emotions, poor cognition, and poor behavior in chronic schizophrenia.

Clinical studies of the phenomenon of institutionalism have shown, moreover, that similar states of indifference and social retreat appear under conditions of prolonged social isolation also in other diagnostic groups and in persons without mental disorders (eg, in prison)^{14,15} Intense emotions can, however, suddenly reappear in patients with schizophrenia under stress even after long-lasting periods of indifference, for instance when painful environmental changes occur. And even decade-long pictures of emotional flatness can slowly disappear under favorable conditions according to several long-term studies, including our own.^{12,16}

Interactions Between Emotion and Cognition According to the Concept of Affect-Logic

Thanks mainly to rapid advances in brain imaging, the number of scientific papers on emotion and cognition has exploded during the last 2–3 decades. For a long time, only a minority of publications dealt systematically, however, with one of the most striking findings of modern neurobiology, namely the omnipresence of affective-cognitive interactions.^{17,18,19,20,21} Among them figure also my publications on the concept of affect-logic which was developed over the last 3 decades from the literature, clinical experience and my own research into schizophrenia.^{22–24} For both practical and theoretical purposes, its aim is to collect and reformulate, for both practical and theoretical purposes, relevant clinical information on this topic scattered across many disciplines such as neurobiology, psychology, psychiatry, psychoanalysis, sociology, and evolutionary sciences. The overall approach is systems theoretical, including notions on nonlinear processes in dynamic systems. The following basic notions of affect-logic are essential for a deeper understanding of the role of emotions in schizophrenia.

The terms of affects and affectivity are used as, eg, in Panksepp's concept of affective neuroscience²⁵ as broad "umbrella-notions" covering overlapping phenomena variously called feelings, emotions, affects, moods, or passions by different authors. They are understood as evolutionarily rooted psychosomatic states of variable quality, duration, intensity, and degree of consciousness. Cognitive functions such as attention, perception, memory, and combinatory thought are ultimately based, in contrast, on the capacity to establish and elaborate sensory differences and differences of differences.²⁶ Emotion and cognition are always interacting; together they provide a binary code which appropriately represents the world in a survival-relevant way. Specific cognitions trigger specific emotions which, in turn, exert specific filtering and switching effects on cognition. Emotions adjust the focus of attention, perception, memory, and thought according to the present context. Affects, cognitions, and behaviors which are simultaneously experienced are assembled and stored in comprehensive feeling-thinking-behaving patterns (or semiautomated "programs" for an adequate behavior in a given situation) which form the essential building blocks of the psyche. Cognitive elements with a similar emotional imprint are preferentially linked, while emotionally dissimilar elements are excluded or neglected ("a wonderful country," a "bad person"). Affects thus appear as the very organizers of thought and behavior.²⁷ The result can be prejudices and whole mentalities dominated by a specific "logic of fear," "logic of hate," of love, and so on, including complex political or religious ideologies. These filtering and switching effects of emotions on cognition are particularly evident in psychopathology, especially in maniac or melancholic states. They

are, however, also at work in the seemingly unemotional "everyday logics" where the organizing effects of initially strong but eventually almost unconscious emotions are gradually automated by repetition and habituation.

Habitual patterns of thinking, feeling, and behaving can (and must) be understood as complex dynamic systems in the systems theoretical sense, with self-organizing dynamics stabilized or destabilized by positive or negative feedback mechanisms and the laws of autopoiesis, homeostasis, and morphogenesis common to all dynamic systems.^{28,29} Cognitions correspond to their structural elements and emotions to their energetic elements. Understanding the motivating, activating, mobilizing, or inhibiting powers of basic emotions on cognition and behavior as biological energies directed toward or away from certain objects (or, more precisely, as sympathicotonic or parasympathicotonic patterns of energy dissipation related to vital behaviors like flight, fight, exploration, bonding, mourning) has important theoretical and practical implications: Crucial systems theoretical notions on nonlinear energy dynamics then apply to psychosocial processes. Of particular interest is the fact that every dynamic system, be it physical, chemical, biological, psychosocial, or economic, is progressively destabilized and finally forced to change its overall mode of functioning, when its energetic tension reaches a critical level.^{30–32} Such so-called nonlinear bifurcations, or phase transitions, occur in psychosocial systems at the sudden outbreak of violence, revolution, or war under the influence of critically increasing emotional tensions. Other well-studied examples are brainwashing techniques and religious conversions.³³ I believe that similar mechanisms are also at work in the sudden shift from normal to psychotic mental functioning.

An Emotion-Based Understanding of Schizophrenia

My central hypothesis is that critically increasing emotional tensions are capable of provoking a nonlinear phase transition from normality to psychosis in vulnerable persons. The psychotic state corresponds, in this view, to an attempt to establish a new (and often unstable) equilibrium which reduces the emotional tension through a global reorganization of the predominant patterns of feeling, thinking, and behaving. The hypothesis is based on this energetic understanding of emotions and on the stress-vulnerability hypothesis. It is supported by many of the notions on emotions in schizophrenia reported above, especially by the research on EE and by the phenomenology of the transition from normality to psychosis. Haken's system theoretical concepts of synergetics³⁴ provide, in addition, a mathematical explanation as to why and how an excessive input of (here, emotional) energy in an open dynamic system (here, a habitual system of feeling, thinking, and behaving) acts as parameter of control for the occurrence of a sudden bifurcation of its overall behavior. They also explain how formerly

marginal structural elements of the system (here, eg, formerly peripheral ideas of persecution which eventually become the center of a fully structured delusional system) suddenly begin to act as a new parameter of order, or “center of crystallisation,” for a global reorganization of a critically destabilized system.

During the premorbid period, too, emotional forces may be more important than generally acknowledged. This period is characterized, in my view, by the progressive build-up of a specific vulnerability for schizophrenia—possibly of a crucial lability of certain affective-cognitive connections close to Bleuler’s core symptom of “loose associations”—through ongoing interactions between unfavorable genetic and environmental factors.^{22,23} So far, the main focus of clinical research was on the cognitive aspects of vulnerability such as deficits of attention or perception or the phenomenon of overinclusion.^{35,36} All such deficits also imply, however (eg, over interpersonal difficulties, isolation, or exclusion), increasing feelings of insecurity, anxiety, depression, or aggression. Deep emotional turmoil is also related to other aspects of the schizophrenogenic vulnerability, such as the perturbed perception of self and of the surrounding world which recently gained increased attention from phenomenologists.³⁷ Early sexual abuse or other traumatic experiences often found in the anamnesis of people eventually suffering from schizophrenia³⁸ also contribute to an anxiogenic personality structure which favors the increase of emotional tensions up to a critical threshold.

Emotional dynamics are finally also important during the long-term evolution of schizophrenia. According to the above-mentioned research on institutionalism and on EE, emotional understimulation favors the appearance of chronic negative symptoms like indifference and social retreat, while emotional overtaxation favors agitation and acute psychotic relapses. The typical emotional flatness and indifference of many persons with long-term schizophrenia can at least partly be understood, moreover, as a freeze-like defense against threatening new and painful acute relapses. In due course, such a defensive armor may even become hardwired by neuroplasticity.

Therapeutic Implications

The proposed emotion-centered understanding of schizophrenia has multiple therapeutic implications which are partly matched and partly are at variance with current practice. Both in acute and in long-term schizophrenia, and preventively also during the premorbid period, an adequate management of the level of emotional tension appears as crucial. While modern techniques of early prevention and of vocational rehabilitation pay increasingly attention to emotional factors, especially when they are based on concepts focused on hope, like empowerment, and recovery, much still has to be done about the usual treatment of acute psychosis. Its central aim should be, in

my view, a sustained reduction of emotional tensions in and around the psychotic patient. A basic precondition is the build-up of a trusting relationship within an empathic and secure therapeutic environment over enough time. This can hardly be achieved through the usual ultra-brief hospitalizations mainly focused on a massive neuroleptic medication, nor in a therapeutic setting often characterized by discontinuity, high emotional tension, and violence. Frequent traumatic circumstances of hospitalizations and chaotic posttreatment situations, too, rather increase than decrease the emotional tension. Even the neuroleptic medication itself may sometimes increase the tension despite appearances, eg, by its somatic or psychic side-effects, by noncompliance, and/or by consecutive coercive measures.

An example of an alternative treatment for acute psychosis explicitly focused on a sustained emotional relaxation is the sociotherapeutic community “Soteria Berne” in Switzerland, implemented as a research project based on the concept of affect-logic in 1984 and still successfully functioning.³⁹ Soteria Berne is a modified version of a first similar project tested in the seventies by Mosher et al in San Francisco, CA, USA.^{40,41} The desired emotional relaxation is mainly provided not through drugs but by a special therapeutic setting, a special interpersonal approach (“being with”) and an ongoing cooperation with the relevant social environment (relatives and other important persons). Empirical research reveals that objectively at least equal and subjectively partly better 2-year outcomes can be achieved by such an approach with significantly less neuroleptics and at lower costs, as compared to conventional methods. Decades-long follow-ups are currently under investigation.

Discussion and Conclusions

My analysis shows that the nature and role of emotions in schizophrenia are multifaceted and partly contradictory. Both the reported observations and the proposed theoretical concepts speak for a considerably greater dynamic impact of emotional factors on the outbreak and on the further development of schizophrenia than hitherto admitted. To understand the habitual patterns of feeling, thinking, and behaving as dynamic systems in the systems theoretical sense, with cognitions as their structuring and emotions as their energizing elements, puts the notion of affective-cognitive interactions on more precise theoretical grounds which favor further research and conceptualization. It also opens a new understanding of crucial developmental aspects of the psychosis, especially its outbreak in vulnerable persons under the influence of increasing emotional tensions, and it leads to innovative therapeutic strategies which seem quite effective.

Many questions remain open, however. Critically increasing emotional tensions can also lead to other kinds of disorders, eg, to the outbreak of violence, of panic, or freezing. Much more research is needed in order to

identify the specific factors of the schizophrenogenic vulnerability which favor the emergence of psychotic rather than other disorders. The empirical support for a beneficial effect of a sustained emotional relaxation is still small and needs further confirmation. Other open questions concern the feasibility of the proposed emotion-centered approaches in the frame of conventional therapeutic systems of care. Some preliminary answers are provided by about 15 different Soteria-like settings created during the last 10–15 years in Germany and elsewhere, embedded in the local institutional network. Eight testable hypotheses concerning the energetic aspects of emotions, their linear and nonlinear effects on cognition, the self-similarity of affective-cognitive interactions on different individual and collective levels, and the possible role of an initial “affective imprint” for all further processing of cognitive information have, in addition, been discussed and formulated for further research in a former interdisciplinary paper on converging findings between affective neuroscience and affect-logic.³¹

In conclusion, the proposed concepts lead, potentially, to

1. a new and more dynamic understanding of schizophrenia,
2. the development of promising new therapeutic strategies, and
3. new testable hypotheses for further research on affective-cognitive interactions and their impact in schizophrenia.

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