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SOTERIA BERNE - AN INNOVATIVE MILIEUTHERAPEUTIC APPROACH TO ACUTE SCHIZOPHRENIA BASED ON THE CONCEPT OF AFFECT-LOGIC

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Abstract

The name "Soteria" stands for an alternative low-drug milieutherapeutic approach to acute schizophrenia that was first implemented by Mosher and Menn in San Francisco/USA, and since 1984 further developed by Ciompi and co-workers in Berne/Switzerland on the basis of their concept of affect-logic that emphasizes the often neglected influence of emotional factors in schizophrenia. In both settings, equal and even partly better therapeutic results were obtained with much lower dosis of neuroleptics and comparable daily costs. Basic concepts, practical proceedings and empirical findings of Soteria Berne are reported, and its theoretic and practical implications for mainstream psychiatry are discussed. They support the hypothesis of a crucial pathogenetic and therapeutic-preventive role played by emotional factors not only in the so-called affective psychoses, but also in schizophrenia.

Key-words: schizophrenia, milieutherapy, psychotherapy, pharmacotherapy, cost-efficiency evaluation

It is generally admitted that complex interactions between biologic-genetic and perinatal, environmental-situational and psychological factors play a crucial role both in pathogenesis and in short-term and long-term evolution of schizophrenia. The vulnerability-stress-model first formulated by Meehl in …, and further elaborated by Zubin & Spring (1977), Nuechterlein and Dawson (1984) and - with a special emphasis on emotional and biographic aspects - also by ourselves (Ciompi 1981) provides a valuable basis for a conceptual integration of widely heterogenic biological, social and psychological influences. Various integrative therapeutic and/or preventive strategies, too, were explicitly or implicitly based on the vulnerability-stress

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concept, from Anderson's (..) so-called educational model to Hogarty's (…) psycho-social approach and to Alanen's (…..) "need-adapted therapy", for just selecting a few examples.

Of particular interest was, from a comprehensive bio-psycho-social point of view specially focused on environmental and emotional factors, a pilot-project called "Soteria" (greek ~ delivery, salvation, protection) that Loren Mosher and Alma Menn conducted from 1971 trough 1983 in a small community-based experimental setting near San Francisco/USA. There, young acute schizophrenia patients were primarily treated by psychotherapeutic and milieutherapeutic methods. Inspired by a phenomenological and existentialistic approach of mental illness, Mosher claimed that continuous human closeness with the psychotic patient ("being with") in a small, supporting and protective non-hospital setting allows to achieve similar or better therapeutic effects than with the traditional hospital-based treatment, almost without using neuroleptic drugs. This claim got support by evaluative empirical research (Mosher et al 1975, 1978, 1995; Bola and Mosher 2002, 2003). A first European replication of the original Soteria approach was eventually implemented in 1984 by the first author in Berne/Switzerland on partly different conceptual bases, in order to verify and, if indicated, to remodel Mosher's approach. "Soteria Berne" proved to be very successful, since it is still in operation after 20 years of existence (Ciompi et al. 1992, 2001). From Berne, the Soteria idea spread out to a number of other places, predominantly in Germany (Kroll et al 2001).

The aim of the present paper is to give an overview of the concept, the practical proceedings and the empirical findings of Soteria Berne, and to compare them with Mosher's original observations and other available information on similar projects. Finally, we discuss the potentials and limits of the Soteria approach to psychosis, and try to situate it in current mainstream psychiatry.

Conceptual bases of Soteria Berne

Our point of departure were converging results of studies on long-term course of schizophrenia over several decades that revealed the existence of considerably better outcome potentials, under favorable conditions, than hitherto known (Bleuler 1972; Ciompi and Müller 1976; Huber et al 1979, 1980; Ciompi 1980, 1988b; see also Harding 1987a and b; Ogawa et al 1987, McGlashan 1988). Additional support for the assumption that environmental factors were more important than so-far admitted came from early studies on the impact of community-based social and vocational rehabilitation (Hogarty and Goldberg 1973; Hogarty et al 1974; Ciompi et al 1978,1979 – see also Carter et al 2003), from research on the so-called "syndrome

of hospitalism" in unfavorable institutional settings (Wing and Brown 1970), from Scandinavian investigations on the influence of rearing conditions in adopted children at risk (Mednick et al 1975,1978; Parnas et al 1985; Tienari et al 1985), from transcultural studies revealing significantly better long-term outcomes in less developed countries (WHO 1979; Sartorius et al 1987), and – especially important for the concepts described below - from the detection of robust statistical correlations between critically increasing emotional tensions (the so-called high expressed emotions) in the environment of persons at risk on the one hand, and the outbreak of psychotic symptoms on the other (Leff et al 1982; Leff and Vaughn 1985; Kavanagh 1992). Last but not least, extended personal psychotherapeutic and sociotherapeutic experiences with psychotic patients had a major impact on the concept of Soteria Berne.

Eventually, we integrated all the mentioned elements of knowledge into a comprehensive psycho-socio-biological meta theory of affective-cognitive interactions named "affect-logic"[3], and in a related model of the long-term evolution of schizophrenia in three phases that served as main basis for our therapeutic strategies both in Soteria Berne, and in the network of local community-based psychiatric institutions in which the Soteria project was imbedded (Ciompi 1982/1988a, 1994, 1997a). According to the central thesis of affect-logic, ubiquitous circular interactions between emotion and cognition exert multiple organizing and integrating so-called operator-effects on mental activity and behavior. Basic emotions such as interest/curiosity, fear, rage, pleasure/joy and sadness correspond to evolution-selected comprehensive energetic psycho-somatic states with specifically directed patterns of energy consumption. Cognition-triggered overt or covert emotions deeply influence on their turn all cognitive activity by regulating attention and perception, memory and combinatory thought and behavior according to context and experience. Hidden operator-effects of emotions are not only at work in all kind of everyday mentalities and ideologies, but also – e.g. through the short-term and long-term effects of "pleasant" rational solutions that became "banal" through habituation - in all kinds of "painfull" scientific problems. The main biologic function of pleasant or unpleasant emotions is the survival-relevant reduction of the infinite complexity of the surrounding cognitive world. Of particular importance is also the fact that critically increasing emotional tensions are capable of provoking sudden global shifts (bifurcations) in the prevailing patterns of feeling, thinking and behaving - e.g from a "fear-logic" to a "rage-logic", from a "logic of peace" to a "logic of war",.

[3] „Affect-logic" is a not entirely satisfying translation of the German term „Affektlogik" implying constant circular interactions between emotion and cognition in all mental functions.

from love to hate, or, in vulnerable individuals, from normal mental functioning to psychosis.

Although often neglected, emotional operator-effects are of crucial importance during all phases of the mentioned model of psychotic long-term evolutions. During phase 1 (the pre-morbid period from conception until the outbreak of psychosis), a vulnerable personality structure is gradually built up through circular interactions between unfavorable genetic/biological dispositions and traumatic life experiences such as inconsistent rearing conditions or deeply disturbed family situations. During phase 2, characterized by the outbreak of manifest psychosis, this vulnerable "terrain" is critically overtaxed by increasing emotional tensions related to stressors such as psychosocial problems of adolescence and early adulthood, professional difficulties, drug abuse, hormonal changes, mating, childbirth, etc. During phase 3 (long-term evolution), remissions or relapses are largely conditioned by the changing interplay of personality structure, therapeutic or preventive strategies and stressful or, on the contrary, protective environmental factors such as family attitudes (in particular high or low expressed emotions), socio-economic and cultural conditions, institutional environment.

In the following years, the concept of affect-logic was further refined and complemented by additional long-term (Hoffmann and Ciompi 1996) and chaos-theoretical aspects (Ciompi 1997b; Tschacher et al 1997), and by the increasing importance attributed to a system-therapeutic approach (Hoffmann 1998; Simon 2001).

Therapeutic consequences and their practical realization in Soteria Berne

On these conceptual bases, and at variance with Mosher's original approach, our primary goal was not to develop an almost drug-free treatment strategy, but *to implement an as good comprehensive psycho-socio-biological treatment of acute schizophrenia patients as possible*, by combining all available psycho-socio-biologic knowledge on therapeutic factors in innovative ways, including the Soteria experience. Given the central role that emotional tensions play, from the perspective of affect-logic, as control parameter for the outbreak and/or exacerbation of psychotic symptoms, the creation of a therapeutic setting that consistently reduces emotional tension appeared as crucial. Most standard hospital settings violate, in fact, this postulate in many ways: They increase emotional tensions e.g. by large, loud, promixous and often violent admission-wards, by traumatic admission practices, by privation from personal atmosphere and belongings, by lack of continuous personalized relationships and conceptual discontinuities related to rapid changes

from one ward or institution to another, by too precipitated discharge practices, and also by lack of adequate information for patients and families. Under such conditions, the only way of reducing tension is high-dose neuroleptic medication. As an alternative, we formulated the following eight therapeutic principles as practical guidelines for Soteria Berne:

1. Small, relaxing, stimulus-protecting and as “normal” as possible therapeutical setting: Instead of treating acute psychotic patients in a traditional hospital setting, we admit them in a small, open, friendly and family-like house with a nice garden located midst in the community, where 8 patients and the team members on duty find a pleasant living space.
2. Continual personalized “being with” the psychotic patient: During the most acute psychotic stage (phase 1), the patient is never let alone, but round the clock accompanied in a pleasant so-called "soft room". The primary task of the accompanying person is to calm him down, not so much by sophisticated psychotherapeutic techniques but by silent or talking "being-with", sometimes also by simple activities such as handcraft, drawing, playing, soft foot-massages, by walking or jogging together, or by other relaxing activities according to personal intuition. Eventually, the patient is gradually integrated in the daily life of the therapeutic community (phase 2), and finally prepared for discharge, after-care and relapse-prevention (phase 3).
3. Personal and conceptual continuity is assured by a small and closely collaborating therapeutic team, backed by a part-time psychiatrist. It consists of nine persons working in overlapping 48 hour-shifts, so that at least two team members can continually be present. Team members are carefully selected for their personal qualities and life experiences, with an equilibrated mix of gender, age and psychiatric vs. other professional backgrounds. Two team members (usually a man and a women) are especially assigned to each patient. For half a day per week, the whole team meets for information exchange and coordination. Monthly, it gets an external supervision by an experienced psychotherapist, and meets fortnightly for an hour of "intervision" focused on case managing problems and team dynamics.
4. Close collaboration with family members and other important persons of reference: From the first day on, close and collaborative relations are systematically built up with family members and other important persons, on the base of personal trust, extensive exchange of information, and liberal visiting politics. In addition,

"educational"-style discussions are monthly organized for family members and other close persons.

5. Clear and concordant information for patients, family and staff: In order to minimize tension-creating confusions and misunderstandings, as clear, complete and concordant information as possible on the illness itself, its prognostic risks and chances, the methods of treatment and relapse prevention etc. is given at every possible occasion to patients, family members and to the team members themselves, on the base of the above mentioned three-phase evolutionary model of schizophrenia.
6. Elaboration of common realistic goals and expectations: Already in an early phase of treatment, concrete therapeutic aims and priorities concerning future housing and work are systematically elaborated with each patient and family, on the base of realistic expectations on risks and chances.
7. Consensual low dose neuroleptic strategies (Herz et al 1982; Carpenter and Heinricks1983; Herz 1996), focused on the reduction of otherwise not controllable states of tension, are used in close collaboration with patient and family, with the final aim of controlled self-medication.
8. After-care and relapse prevention for at least two years is systematically prepared both by extensive education on personal prodromi and prophylactic proceedings, and by the establishment of contacts with external therapists and follow-up institutions.

Despite minor adaptations over the years, these eight principles remained basically the same since the implementation of Soteria Berne in 1984. They overlap largely with Mosher's initial practice in San Francisco, in which we however also integrated educational techniques, a systemic family approach and modern rehabilitation and relapse prevention strategies mainly focused on affective-cognitive valorisation ("empowerment") and relaxation. Other differences concern the composition of the Soteria team (not only lays, but also psychiatric professionals) and more flexible medication strategies that gradually tend to resemble current low-dose medication techniques with "atypical" neuroleptics.

Clinical observations

Over the past 20 years, several hundred schizophrenia patients (about 30 per year in the beginning, nowadays around 50) have been treated in Soteria Berne. The overall clinical experience is that most acute schizophrenia patients can indeed be efficiently treated by the described approach. Even very tense and aggressive psychotics often calm down within days in the relaxing Soteria atmosphere. Incidents of serious

violence against self or others were extremely rare (less than 10 cases in 20 years). However, about 10-15% of randomly assigned schizophrenia patients, with whom no minimal working alliance could be established, could not be adequately treated in the open Soteria setting (Ciompi et al 1991). They were referred to one of the local psychiatric hospitals with which Soteria Berne is closely collaborating. Although preferentially focused on young adults in an early stage of illness, the Soteria treatment seems to be beneficial for most types of patients within schizophrenic or schizophreniform disorders, chronics included. So far, we have not been able to clearly identify illness factors that predict favorable or unfavorable treatment responses.

Comparative longitudinal research revealed at least similar, and partly probably better two-years outcomes than with traditional methods with much lower total doses of neuroleptics and comparable daily costs (details see below). Systematic evaluations over more than two years, that meet great methodological difficulties, are still lacking. Casuistic observations with former patients with whom we remained in contact show, however, a number of cases with astonishingly favorable evolutions over decade-long periods. Possible long-term advantages seem to be mainly located in the area of social adaptation and stigmatization on both subjective and objecite levels, and in a less traumatic subjective impact of the psychotic experience and the subsequent institutional measures. Feelings of personal value and identity, too, seem better preserved, allowing for a better eventual integration of the psychotic experience into the personal life history. Even clearly maturating effects related to the psychotic crisis and its psychodynamic elaboration in Soteria could sometimes be observed, especially when after-care was adequately prolonged, after discharge, by rehabilitative measures and a sufficiently long individual or family-centered psychotherapy.

In addition, the shared daily life in the therapeutic community offers unique opportunities for close participant observation of psychotic phenomena. Particularly striking is the observation that acute psychotic states often greatly change from day to day, and sometimes even from hour to hour (Aebi et al 1993). They apparently depend more closely than generally admitted on current environmental influences, especially on the emotional state of team members and other patients. Increasing emotional tension, irritation or ambiguity of communication almost invariably intensifies psychotic disturbances, whereas genuine calm, clarity and respectful friendliness generally decrease them. Clearly structured organizational and relational limits also seem to be beneficial. Too much change, confusion, noise and stimulus overload (e.g. from television, computer, invasive music, newspapers, too complex or

too heavy discussions, etc.) has, on the contrary, unfavorable effects. Boundaries between normality and psychosis often appear as astonishingly permeable in the Soteria setting. In the special atmosphere of the “soft room” in particular, emotional contact with healthy parts of the personality often remained possible across highly psychotic states. According to retrospective auto-reports, maintaining such a contact was often experienced as very helpful, in spite of apparently missing immediate effects.

Results of evaluative research

Mosher and co-workers were able to show in several controlled two-year outcome studies that almost without using neuroleptic drugs, similar or better therapeutic effects regarding psychopathology, hospitalization rate, work and social functioning could be obtained in the Soteria setting, as compared with traditional hospital-based treatments (Mosher and Menn 1978; Matthews et al 1979; Bola and Mosher 2002, 2003). Some other interesting studies of Mosher’s group are summarized elsewhere (Mosher 1999; Ciompi et al 2001).

The evaluative research of Soteria Berne was mainly done in two studies, the first one concerning immediate outcomes without a control group (Ciompi et al 1991), and the second one comparing the outcomes of Soteria patients in a two year follow-up study with carefully matched controls coming from four different hospital settings in Switzerland and Germany (Ciompi et al 1993). From these studies, the following findings are of particular interest:

In the first study, immediate results on the four "axes" of psychopathology, housing situation, work situation, and global outcome were very good or good in about 2/3 of the first 56 treated cases. The average age of the patients was 24 years (range 18 to 37). They stayed in Soteria Berne between 3 and 763 days, in average 54. Full remission of symptoms could be observed in 41% of the cases. 39 % of the patients did not receive any neuroleptics during their stay in Soteria, and outcome at discharge was judged as quite good to good in 75% of these patients. Statistically, women and less medicated patients had a significantly better outcome than men, respectively than patients receiving higher doses of neuroleptics. This latter and at first hand surprising finding should not be overinterpreted, however, as indicating a superiority of a drug-free treatment, because only the most severely disturbed and milieutherapy-resistent patients received higher doses of neuroleptics, according to the above mentioned treatment rules. The main result of this study is, therefore, the confirmation that acute psychotic patients with schizophrenic spectrum disorders (schizophrenia in 39 out of 56 cases according to DSM III criteria, 14

schizophreniform psychoses, 3 unclear) can in fact be successfully treated in a Soteria setting, as claimed by Mosher et al (1978, 1995).

In the second study, Ciompi and co-workers compared 22 index patients fulfilling all requested research criteria among the up to date 60 first time admitted schizophrenia patients in Soteria Berne with the same number of matched controls selected out of 70 first admitted patients form four traditional hospitals in Switzerland and Germany. By using the German version of the well-known "Ward Atmosphere Scale" (WAS, Moos 1974), it was verified that the therapeutic atmosphere in Soteria Berne differed significantly from the atmosphere in the four traditional control institutions. Main differences concern greater emotional closeness and more warmth and spontaneity of patient-staff relations in Soteria, and less hierarchy, order and control. The two-year outcome revealed no significant differences between Soteria patients and controls concerning the four above mentioned outcome measures and the relapse rate. 27% of the patients in Soteria Berne never got neuroleptics, as compared with 5% of the controls. The total 2-year-doses of neuroleptics in Soteria Berne were 56% lower than in the control group. Average daily costs were exactly the same in Soteria and in the four control settings. However, the length of stay in Soteria was with 185 days in average exactly twice the duration of hospital treatment of the controls, a difference that lead to about one third higher two year costs for Soteria patients.

Further examination of this disturbing finding revealed that the longer lengths of stay were mainly related to the fact that we initially tried to include full social and vocational rehabilitation into the Soteria treatment, in order to preserve long-term personal and conceptual continuity. For financial reasons, this idealistic approach could, however, not be maintained. Eventually, we therefore adopted the more conventional practice of transferring social and vocational rehabilitation to specialized local community-based settings. As a result, the average length of stay at Soteria Berne is currently 44 days (vs. 49 days at the admission ward for schizophrenia patients of the nearby Psychiatric University Hospital Berne). Treatment costs at Soteria were thus reduced by 32% in the last four years, and are now consistently about 20% lower than in comparable local units also focused on patients suffering from acute schizophrenic psychosis.

In summary, our findings revealed at least similar, and partly possibly better two-years outcomes in Soteria Berne than in standard inpatient settings with significantly lower total doses of neuroleptics. These results replicate the initial findings of Mosher and Menn (1978) and Matthews et al (1979) and confirm the efficacy of the Soteria approach. They are in line with the reviews by Gunderson (1980) and Ellsworth

(1983) who concluded that milieu-therapy leads to a significant improvement of symptomatology and social functioning in acute as well as in chronic schizophrenia patients, and also with the results of an early study by Carpenter et al (1977) who used a less radical milieu-therapeutic approach.

Discussion, conclusions and further implications

As mentioned, the observations at Soteria Berne confirm Mosher's claim that in this specific environment, most acute schizophrenia patients can be as successfully treated as by standard hospital proceedings, but with significantly lower doses of neuroleptics and without higher daily costs. In addition, the Soteria approach seems to offer certain advantages mainly located on the subjective-emotional, familial and social level. How can these surprising findings be explained and usefully integrated into the mainstream psychiatric concepts and practices?

One possible objection concerns the validity of the reported empirical findings. Given the extreme rarity of Soteria-like projects and the consecutive quantitative and also qualitative weaknesses of the so-far available research data on this narrow basis, it must certainly be admitted that the existing empirical evidence is not yet sufficient for drawing any definitive conclusions (for an extensive discussion of the involved questions of methodology and interpretation, see Ciompi et al 2001). It is also true that 10-15 % of randomly assigned acute schizophrenics could not be adequately treated in the open Soteria-setting. In spite of that, in our view both the cumulated clinical experiences over now more than 30 years from several American, Swiss and German Soteria-like settings and the so-far available converging research data speak clearly for the probability that interesting new therapeutic possibilities for a great majority of schizophrenics do in fact exist along the explored unconventional lines.

In our opinion, these observations are not in contradiction with the current understanding of psychotic phenomena and therapeutic practice, at a closer analysis. In accordance with the integrative viewpoint of affect-logic, the major impact of the Soteria approach is situated on the emotional level, with multiple beneficial “secondary effects” on cognition and behavior. That the schizophrenic psychosis is the result of complex ongoing interactions between unfavorable biological, psychological, social and environmental influences is, as already mentioned, generally admitted in theory, and strongly supported also by modern notions on the effects of stress and neural plasticity in both normal and emotionally vulnerable persons. In addition, a large number of studies speak for beneficial complementarities between pharmacotherapeutic, psychotherapeutic and sociotherapeutic approaches. The crucial signification of the level of emotional

tension in and around a patient at risk for psychosis is largely confirmed by the convergent results of more than 20 studies on the effects of so-called “expressed emotions”. It is, hence, not at all surprising that a therapeutic approach systematically focused on a sustained reduction of emotional tension can have beneficial effects, given that this approach partly substitutes in a more physiological way the well known effects that neuroleptic drugs also exert on the emotional system.

Whether neuroleptics can, or even should be dramatically reduced in a Soteria-like environment is still, as we believe, an open question necessitating much more research focused both on short-term and long-term advantages and disadvantages of neuroleptics. While it is certainly true that the current “atypical” neuroleptics have less short-term side effects than the classical drugs, it should not be forgotten, however, that we still have very little knowledge about their possible side-effects over decades. At this point, it should also be emphasized that practically all so-far available studies on the effects of neuroleptics on schizophrenia neglect the crucial variable “emotional atmosphere of the therapeutic setting”, and must therefore be considered as severely biased (one remarkable exception is an early study on expressed emotions showing that similar effects on relapse rates can be obtained with significantly less drugs in situations of low as compared to high emotional tension, cf. Vaughn and Leff 1976). More in line with Carpenter’s and Buchanan’s (2002) rejection of an “ideological” drugs versus psychosocial therapy polemic than with Mosher’s ongoing radical anti drug stand (cf. Bola and Mosher 2002, 2003), we have gradually opted, in this situation, for a moderate use of modern atypical neuroleptics that differs no longer dramatically from current low-dosage practices.

A related much discussed question are the costs of a Soteria setting. Since costs are nowadays a crucial factor for the survival of a nonconventional setting like Soteria, the problem is to find a viable compromise between optimal treatment conditions with long-lasting favorable affective-cognitive influences and as little use of neuroleptics as possible, and the existing financial constraints. At first view, continually “being with” an acute psychotic patient - a cornerstone of the Soteria approach - may seem very expensive. On the other hand, the costs for personal resources at Soteria are, however, lowered by the fact that all domestic tasks (shopping, cooking, cleaning, gardening, house-keeping etc.) are used as therapeutic tools and done by the members of the therapeutic community themselves. Daily costs at Soteria Berne were therefore never higher than in conventional psychiatric admission wards of the same area. They even tend even consistently to be lower for achieving similar results, in spite of the fact that low-drug treatment tends to take more time and, thus, to increase the immediate treatment costs.

In summary, we think that the pioneering Soteria approach has revealed a number of possible improvements for the treatment of acute schizophrenia patients, especially in its flexible form gradually adopted in Soteria Berne. The question whether this approach should be reserved for schizophrenia patients alone, or also extended to other groups of patients, has not yet been sufficiently explored. On the one hand, treatment units specifically focused on the needs of certain diagnostic groups have generally been proved useful and are therefore more and more frequently introduced e.g. for depressive, drug-dependent, alcohol-dependent, borderline or geronto-psychiatric patients. There are at least as good reasons for creating units that meet the particular needs of acute schizophrenic patients. On the other hand, so-called “Soteria-elements” (e.g. increased personal and conceptual continuity, more personalized approach of mental patients, more convivial ward-organization etc.) have also been successfully introduced in conventional psychiatric admission wards, sometimes with astonishingly beneficial effects on the general ward-atmosphere, and especially on the rate of violence and necessary violent counter-measures (Kroll et al. 2001; Eickmann and Jiko 2001). Modern techniques of early prevention of schizophrenia, too, are partly inspired by “Soteria-elements” (Klosterkötter 2001). All these observations show that the Soteria-idea may have much more than only schizophrenia-specific potentials.

As a conclusion, we think that the Soteria experience supports the assumption that emotional factors play a much greater role than generally admitted in both normal and in pathological modes of thinking and behaving, including schizophrenic disorders. According to a somewhat provocative statement formulated in summarizing a recent review of Soteria-like experiences (Ciompi et al 2001), “Soteria acts like a neuroleptic drug, but without its unfavorable side-effects”. Neuroleptic drugs may, in fact, not directly influence cognitive functions, but act primarily by their impact on the affect-regulating limbic and paralimbic structures which, secondarily, improve cognitive functions and behavior. Similar but probably more sustained (because more specifically problem-centred, context-related and personality-adapted) effects of basic emotions on thinking and behaving can be obtained in a natural way, as showed by the Soteria experience. An additional theoretical implication based on the concept of affect-logic is the hypothesis that schizophrenia, too, and not only mania or depression, may essentially be an "affective psychosis" of, however, a quite particular kind (Ciompi 1998).

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