Bottom-up rehabilitation in schizophrenia
Appelo, Martinus Theodoor

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Introduction.

In most cases schizophrenia cannot be cured. Patients suffering from this severe psychiatric syndrome have to learn how to deal with its symptoms and consequences to prevent long term hospitalization and dependency on health care professionals.

Despite many efforts to reintegrate patients into society, many of them spend the greater part of their lives inside the hospital. Therefore, the rehabilitation of schizophrenic patients is currently under the attention of governments, partly also due to the political and financial consequences of their social reintegration and re-entry into the work force. Also, the development of rehabilitation services in mental health systems is encouraged on account of economical reasons, such as for instance the gradual closure of mental hospitals in Britain (Birchwood & Tarrier, 1992). However, rehabilitation is also a technological issue. One of the problems with rehabilitation is that the theoretical basis of its technology is often absent or poorly developed when put into practice. This results in treatments based on inadequate diagnosis and a limited therapy repertoire, which fails to take into account individual potentials and limitations. The effects of treatment are seldom adequately assessed, resulting in a lack of empirical support for its continuation or change. Thus, the importance of development, implementation and evaluation of theoretically directed rehabilitation is great.

The vulnerability-stress model (Zubin & Spring, 1977; Nuechterlein & Dawson, 1984a) is generally accepted as the leading theoretical model. This model explains why many skills trainings, applied to teach patients how to survive in society, fail to produce positive effects. The assumption is put forward that schizophrenia is associated with a high level of vulnerability, operationalized in terms of cognitive disturbances. These cognitive disturbances are considered important impeding factors for the learning of skills. Therefore, cognitive rehabilitation is one of today's highlights in schizophrenia research, although evidence for generalization of cognitive remediation to meaningful daily activities has rarely been found up to now (Penn, 1991).

The present study deals with the development and application of a theory based clinical rehabilitation programme for 'chronic' schizophrenic patients indicated for long stay wards. Based on the acknowledgement of cognitive disturbances, the training of this 'bottom-up programme' starts at the level of cognitive functioning and basic skills before training 'survival-skills' aimed to obtain optimal resettlement in the community. The programme is evaluated by controlled prospective research. Central issues are:

1. The effect of the programme on cognitive functioning, coping, social skills, general functioning, psychotic symptoms, accommodation and daily activities.
2. The additional value of cognitive skills training.

The rehabilitation programme has a duration of eight months and is divided into two stages of four months each. The first stage is directed at learning to accept and deal with vulnerability for psychotic decompensation, and at the development of executive control and basic skills. During this stage it is aimed to develop a stable foundation for social reintegration.

The second stage focuses on learning to deal with external sources of stress, optimizing self-care and social skills, seeking appropriate accommodation and
developing daily activities. The key issue at this stage is developing survival skills.

In the first condition during the first stage of the programme, cognitive functions are explicitly trained. In the second condition of the programme this training is replaced by an attention placebo condition.

The programme includes newly designed and re-designed skills trainings. With regard to methodology, in every training attendants use behavioural therapeutic strategies to guide the learning process. Thus, the first condition of the programme is directed to remediating cognitive disturbances of patients while in both conditions training tactics will take into account the presence of cognitive disturbances.

Since the programme has been developed for patients who are indicated for long stay wards, the results of the programme will be compared to the effects of traditional long stay ward programmes as well. Also, patients who participate in the programme for more than 75%, will be compared to drop-outs of the present study.

In chapter 1, rehabilitation will be defined on the basis of theoretical starting points. Chapter 2 deals with a cognitive model for skills acquisition (Anderson, 1983) based upon which cognitive disturbances in schizophrenia are classified. Also, the association between cognitive disturbances and schizophrenic symptoms is described. Chapter 3 describes behavioural therapeutic and general tactics to guide the learning process and to deal with cognitive disturbances. These tactics have been taught to all professionals involved in the programme. In chapter 4 the focus is shifted from dealing with, to remediating cognitive disturbances. After discussing cognitive rehabilitation efforts until now, a pilot-study is presented in which a cognitive and social skills training have been applied in successive order. The central issue is whether this combination-training affects cognitive functioning, symptoms and general behaviour. In chapter 5, instruments are presented operationalizing the vulnerability-stress model and Anderson’s model of cognition. In order to select variables for statistical evaluation, test-retest and interrater reliability research is carried out. The clinical rehabilitation programme, which is the object of evaluation in this study, and the long stay ward control condition, will be described in chapter 6, following a description of the methods of the main study in chapter 7. In chapter 8, hypothesis and questions on the effect of the programme will be tested and investigated together with the additional value of cognitive skills training and the prediction of success. Finally, in chapter 9, a general discussion is presented in which the attention is focused on further improvement of the rehabilitation process of schizophrenic patients.
1. Schizophrenia and rehabilitation.

1.1 Schizophrenia.

Writing about schizophrenia traditionally starts with Kraepelin (1896; 1909-1913) and Bleuler (1911). The first author described 'dementia praecox' as a dementia-like biological syndrome, generally emerging at an early age and having a poor prognosis. According to Kraepelin, dysfunctions and loss of coherence in psychological functions, emotional bluntness and apathy are central symptoms. Based on this notion, the second author introduced the concept of 'schizophrenia'. In contrast to Kraepelin, Bleuler attributes a significant role to psychodynamic factors. Also, according to Bleuler, psychological factors of personality cause reactions to primary symptoms of schizophrenia, resulting in secondary symptoms. In his view, poor prognosis is also central to schizophrenia.

Since these two 'godfathers' identified schizophrenia, its etiology and course have been explained from various perspectives, ranging from purely biological to purely socio-psychological. The validity of the construct is still a problem. However, consensus about symptomatology is present. 'Schizophrenia' is a broad concept describing a syndrome which is regarded as one of the most severe psychiatric disturbances. Diagnostic criteria according to the third revised Diagnostic and Statistical Manual of Mental Disorders (APA, 1987) are reported in table 1.1.

**Table 1.1: Schizophrenic symptoms (DSM-III-R).**

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summary of the DSM-III-R criteria

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A Psychotic Symptoms (1, 2 or 3 for at least 1 week):

1. Two of the following: delusions, hallucinations, incoherence or marked loosening of associations, catatonic behaviour, flat or grossly inappropriate affect
2. bizarre delusions
3. prominent hallucinations

B Role functioning is markedly below the highest level achieved before onset of the disturbance.

C Schizoaffective and Mood Disorders with psychotic features have been ruled out or are secondary to A.

D Continuous signs of the disturbance for at least six months.

E It cannot be established that an organic factor initiated and maintained the disturbance.

F If there is a history of Autistic Disorder, the additional diagnosis of Schizophrenia is made only if prominent delusions or hallucinations are also present.

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The distinction between positive and negative symptoms of schizophrenia is common (Crow, 1985). Positive symptoms such as delusions, hallucinations and incoherence, are characteristic of psychotic episodes, whereas between these episodes, negative symptoms are prominent: flattened affect, poverty of thought and speech, apathy,
loss of interest, social withdrawal and motor retardation.

In table 1.1, ad. D implies that symptoms must be present for at least six months, before schizophrenia can be diagnosed. This condition refers to the 'poor prognosis' criterion of Kraepelin and Bleuler; long term dysfunctioning before the diagnosis is applied, is related to a higher risk for chronicity (Van den Bosch, 1988). However, chronicity or poor prognosis cannot be identified as the most central characteristic of schizophrenia. The course in individual cases can not be predicted and the course in general can only be described retrospectively (WHO, 1979; Slooff, 1988).

The course of schizophrenia can be described in terms of symptomatology, hospitalization rates and in terms of social functioning (Slooff, 1988). In table 1.2, a global summary is presented of (reviews of) important follow-up studies on these dimensions. This summary includes the work of Bleuler (1972), Ciompi and Müller (1976), Huber et al. (1979) and Tsuang et al. (1979) as it was reviewed by Slooff (1988) and by Harding et al. (1992).

**Table 1.2: Course of schizophrenia.**

<table>
<thead>
<tr>
<th>author</th>
<th>review</th>
<th>(year)</th>
<th>study</th>
<th>1. symptomatology</th>
<th>2. hospitalization</th>
<th>3. social functioning</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anthony</td>
<td>review</td>
<td>(1977)</td>
<td>max. 10 yrs.</td>
<td>30-40% &lt; 6 months</td>
<td>65-75% &lt; 5 years</td>
<td>10-30% has fulltime job at follow-up</td>
</tr>
<tr>
<td>Harding et al.</td>
<td>follow-up</td>
<td>(1987a,b)</td>
<td>n=269</td>
<td>30% none</td>
<td>26% had payed employment (at 20-25 years follow-up)</td>
<td></td>
</tr>
<tr>
<td>Slooff</td>
<td>review</td>
<td>(1988)</td>
<td>max. 38 yrs.</td>
<td>&lt; 25% fully recovered</td>
<td>≥ 75% chronic after 5-10 years symptoms stabilize</td>
<td>40% requires protected living conditions</td>
</tr>
<tr>
<td>Shepherd et al.</td>
<td>follow-up</td>
<td>(1989)</td>
<td>n=107</td>
<td>after 5-10 years symptoms stabilize</td>
<td></td>
<td>40% has significant social dysfunctions at follow-up</td>
</tr>
<tr>
<td>Marneros et al.</td>
<td>follow-up</td>
<td>(1990)</td>
<td>25,1 years</td>
<td>47% has psychotic symptoms at follow-up</td>
<td>schizophrenia has poor outcome compared to other mental illnesses regarding all levels of role functioning</td>
<td></td>
</tr>
<tr>
<td>Harding et al.</td>
<td>review</td>
<td>(1992)</td>
<td>30 years (mean)</td>
<td>1.64 (mean)</td>
<td>schizophrenia has poor outcome regarding psychopathology, psychological and social functioning</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>n=1300 schiz. (total)</td>
<td>47% has psychotic symptoms at follow-up</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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6
Although about one fourth of the patients fully recover after one or more episodes, in seventy-five percent of the cases the disturbance takes a chronic form; half of this group exhibits negative symptoms, the remaining half have long lasting positive symptoms such as delusions and hallucinations.

Recently Hegarty et al. (1994) analyzed 320 studies on the outcome of schizophrenia. Overall, less than half of the patients diagnosed with schizophrenia (40.2% of 51,800 subjects) have shown substantial clinical improvement after a mean follow-up period of 5.6 years. Despite many efforts to reintegrate patients into society, success rates are only marginal. Most patients are sooner or later readmitted to hospital or sheltered environments and a normal working situation is rarely possible.

The fact that schizophrenia is no longer understood as a chronic illness irrevocably associated with progressive deterioration is supported by the studies which indicate that after thirty years almost 55% of patients have recovered or improved significantly (Harding et al., 1992) and that the functional level and severity of disabilities of schizophrenic patients reaches a plateau after five to ten years. However, level of social functioning is low at that time (Harding et al. 1987a,b; McGlashan, 1988).

In the Netherlands schizophrenic patients occupy sixty to seventy percent of the beds in psychiatric long stay wards. Therefore, the rehabilitation of schizophrenic patients is currently under the attention of the Dutch government. But what exactly is rehabilitation? This question will be answered in the next section.

1.2 Theoretical starting points.

Today, the vulnerability model (Zubin & Spring, 1977; Nuechterlein & Dawson, 1984a) is generally accepted as a theoretical starting point for research in schizophrenia. In this model, schizophrenia is viewed as an episodic phenomenon, with debilitating consequences, which accompanies failure of coping in vulnerable individuals. It is a general theory of the onset and course of schizophrenia. In summary the assumption is put forward that schizophrenia is associated with a high level of vulnerability, which may be genetic or acquired. A psychotic episode can occur in a vulnerable person when stress, following unexpected and uncontrollable events, exceeds a certain 'threshold', and where adaptation becomes impossible and coping or self-protective mechanisms are inadequate.

Vulnerability is most frequently expressed in terms of cognitive disturbances. Research has clearly shown that controlled processing of information is disturbed in at least a subgroup of schizophrenic patients and that some cognitive disturbances cannot be improved by training (e.g. Schmand, 1991; Van der Gaag, 1992). The consequences are extremely important for implementing rehabilitation. However, according to Bellack et al. (1989), in treatment programmes for schizophrenic patients often these disturbances are not recognized, or, when they are recognized, they are not explicitly described in the methodology and evaluation. The present study has been developed to overcome these shortcomings. The key issues are methodological consideration, training and evaluation of disturbed cognitive performance. Therefore, the issue of (disturbed) information processing in schizophrenia will be discussed in detail and separately in the next chapter.

Stress is generally acknowledged as an important factor in psychiatric
disturbances. It has repeatedly been shown that a relationship exists between a certain number of life events and the onset of psychiatric syndromes (e.g. Brown & Birley 1968; Brown et al., 1972; Slooff, 1984; Sanderman, 1988; Ventura et al., 1989). However, none of these studies established the precise relationship in time between events and decompensation, or the predictive value of the events. Hirsch et al. (1992) conclude that there is a mass of inconsistency in the results and methods employed in the studies with regard to the triggering effect of life-events. However, as early as in 1981, Kanner et al. disputed the dominance of the life event approach and instead studied 'daily hassles', or relatively small stresses which infringe upon the daily rhythm by causing irritation, frustration or pain, and demanding a certain amount of adaptability. Such hassles appear to be better predictors of psychopathology than life events (Kanner et al., 1981). In case of schizophrenia this is an important notion since research on the relationship between expressed emotion (EE) and psychotic decompensation appears to be relevant. EE is a pattern of attitudes and interpersonal communication characterized by criticism, hostility, control and overinvolvement or overconcern. A high EE climate may be thought of as an environment where many interpersonal daily hassles occur. It is well established that the quantity of high EE is related to psychotic decompensation following discharge (Vaughn & Leff, 1976; Leff & Vaughn, 1981; 1985; Lukoff et al., 1984; Kuipers & Bebbington, 1988).

The experience of stress resulting from a subjective evaluation of the stressor is central in the theory of Lazarus and Folkman (1984). With this approach the emphasis is on mediating intrapsychic factors between stressors and psychopathology. These include: locus of control, personality traits and disposition to fear. It was found repeatedly in studies on daily hassles that the number of hassles experienced was independent of the level of stress reported (Reich et al., 1988; Brantley et al., 1988). The subjective evaluation of the meaning of an objective stressor is supposed to have more causal significance to the behaviour which follows, than the objective stressor itself. At the behavioural level, the concept of 'stress' is therefore closely related to the concept of 'coping'.

Coping is defined as constantly changing cognitive and behavioural efforts to control internal or external stressors that threaten to exceed one's threshold (Lazarus & Folkman, 1984). Coping style is generally divided into problem-oriented versus emotion-oriented. In the first instance, the individual judges influence on or control of the stressor as possible and initiates appropriate behavioural strategies. In emotional coping the person regards the stressor as impossible to influence and takes self-protective measures. These are primarily fear reducing measures such as avoidance, alcohol use, selective attention, reduced activity or acting-out behaviour. Emotionally directed coping is typical in schizophrenic patients (Cohen & Berk, 1985) and may be seen as a means of preventing overstimulation.

The formulation of the concepts 'vulnerability', 'stress' and 'coping' has significant consequences for rehabilitation programme design. Cognitive disturbances contribute to an oversensitivity to stress. This, in turn, produces reactive symptoms and behavioural strategies which can be seen as coping. Rehabilitation should focus on the identification of stressors and the development of control by training problem oriented coping-behaviour.

According to Wing (1982) one of the most important aims of rehabilitation is to avoid, as far as possible, the development of attitudes that are unnecessarily disparaging and hopeless, thus increasing the degree of dependency and disablement. Acute schizophrenic episodes tend to be associated with symptoms lower in the diagnostic
hierarchy, such as depression, anxiety, worrying, muscular tension and irritability. Wing states that such symptoms may occur in reaction to the difficulties and frustrations which all disabled people experience. The importance of these symptoms with regard to outcome, is illustrated by Geddes et al. (1994) who found that depression and hopelessness at the time of first admission, predict earlier first readmission. De Hert (1995) found that these symptoms predict suicide in schizophrenia.

Besides the fact that official diagnostic criteria of schizophrenia, as summarized in table 1.1, include the loss of role functioning, also the experience of loss of ambitions and skills are common in schizophrenia (Birley, 1991). According to this author, the realisation of and adaptation to the fact that one is mentally ill, is a long and painful process. An important starting point in the present study is the fact that this process may even be more difficult if cognitive disturbances with a trait character are present. In that case the patient should learn to recognize vulnerability, and accept the fact that it may be related to psychotic decompensation and hampering skill performance.

The process of realisation of and adaptation to loss shows a striking resemblance to the process of normal grief. Therefore, the concept of grief is introduced here as the fourth central theoretical concept, creating an important frame of reference to emotional states related to schizophrenia (Appelo et al., 1993).

Grief reactions always follow significant loss (Freud, 1917), and reintegration into the mainstream of life can only take place after acceptance of the loss (Ramsay, 1977; Sanders, 1989). Although recognized, the consequences of the fact that in onset and course of schizophrenia several significant losses are enmeshed, is overlooked until now in rehabilitation practice. These consequences can be summarized as follows: Firstly, reactive symptoms mentioned above can sometimes be comprehended as normal reactions to loss or as a way to cope with it. If so, these symptoms should not be criticized or punished but attitude towards it should primarily be empathic to enable the patient to accept the illness. Secondly, relating schizophrenia to the process of grief emphasizes the possibility of treatment that focuses on these symptoms and (absence of) emotions with cognitive-behavioural interventions. Besides activation, which has been the central component of rehabilitation practice up to now, these interventions also include cognitive strategies directed at the acceptance of the loss (Kavanagh, 1990). Accepting a label of mental illness, or a greater awareness of having an illness, contributes to treatment compliance and positive clinical outcome (Amador et al., 1991).

1.3 A special note on negative symptoms.

Negative symptoms are considered an important predictor of poor outcome in schizophrenia (e.g. Hwu et al., 1995). The negative syndrome, frequently measured with the Scale for the Assessment of Negative Symptoms (SANS; Andreasen, 1989), includes five categories of symptoms; affective flattening, alogia or poverty of speech and thought, avolition or apathy, anhedonia, and impaired attention. Affective flattening manifests itself as unchanging facial expression, decreased spontaneous movements, paucity of expressive gestures, poor eye contact, affective non-responsivity and lack of vocal inflections. Alogia includes poverty of (content of) speech, blocking, and increased latency of response. Avolition or apathy includes poor grooming and hygiene, impersistence at work or school
and physical anergia. Anhedonia or asociality is rated by the level of recreational interests and activities, sexual interest and activity, ability to feel intimacy and closeness and relationships with friends or peers. Finally, impaired attention is operationalized as social inattentiveness and inattentiveness during mental status testing.

It is obvious that 'the negative syndrome' is a global construct overlapping many other clinical syndromes. Summarizing research on the diagnostic specificity of negative symptoms, Kuipers (1992) concluded that these are not specific for schizophrenia or other psychotic syndromes. Especially the diagnostic overlap with depression is emphasised; The longer the illness proceeds the less clear negative symptoms can be differentiated from depression.

**Figure 1.1: The patchwork quilt of negative symptoms.**

Inactivity and difficulty in mobilizing everyday initiative to perform routine tasks, withdrawal, absence of feelings, inability to concentrate and decreased libido, are negative symptoms which are also mentioned in the literature on post psychotic depression in schizophrenia (McGlashan & Carpenter, 1976). Dworkin (1992) stresses the conceptual overlap between measures of social functioning or social skills and the affective flattening subscale; 'It is plausible that a patient has, for example, poor eye contact or a lack of vocal inflections because the patient suffers from a social deficit and lacks the ability to engage in the socially appropriate behaviours that constitute competent interpersonal interaction'. Strauss et al. (1989) hypothesize that negative symptoms arise in many instances as responses to extremely difficult psychological and social situations, and may reflect active coping on the part of the patient. They identify the following possible psychological and social sources of negative symptoms; the pain of relapse into psychosis, the loss of hope and self-esteem, withdrawal as a mechanism for avoiding impulsive or bizarre behaviour, problems in finding a new identity as non-patient, the feeling of guilt for past dysfunctioning, fear of entering complex stressful social situations and secondary benefit. These sources in turn show a striking parallel with grief, coping and social deficits. As will be discussed in the next chapter, many studies show a correlation between negative symptoms and cognitive disturbances. Particularly the items that constitute the attention subscale of the SANS show similarity to tasks for testing memory and attention. Finally, institutionalization (Strauss et al., 1989), neuroleptic side effects and personality (e.g. Mundt et al., 1989), and energetical deficits (Schmand, 1991) have also been identified as contributors to negative symptoms.
In summary the negative syndrome may be regarded as a set of various overlapping psychological and physical states and traits. In figure 1.1 this 'patchwork quilt' is illustrated.

This conceptualization of the negative syndrome has major implications for rehabilitation in schizophrenia. Instead of viewing negative symptoms as stable and resistant to treatment (Crow, 1985), the views held by Wing (1961, 1989) are considered essential for this study. It is assumed that negative symptoms are at least partly responsive to treatment because all overlapping symptoms can be treated or influenced.

1.4 The concept of rehabilitation.

Watts and Bennett (1983) state that rehabilitation has become associated with a set of practices and procedures but that a broad conception of its aims and objectives is lacking. Therefore, it is necessary to clearly operationalize the concept of rehabilitation. For this purpose a selective review of definitions of rehabilitation was carried out. Using the vulnerability model as a theoretical frame of reference, the selection was focused on definitions adding new main points to the concept of rehabilitation. Starting points are the fundamental rules Bleuler (1911) defined for intervention in schizophrenia and the definition of Wing (1963). In table 1.3, in which the results of this review are presented, the new points are underlined. Based upon a summary of the main points, a multidimensional definition of rehabilitation can be formulated, which is presented in table 1.4.

Considering that in most cases schizophrenia takes a chronic form and is associated with longlasting vulnerability, starting point in rehabilitation is the fact that traditional treatment guided by medical disease models deals inadequately with schizophrenia. Such models usually focus on initial etiological processes, personality and elimination of temporarily symptoms, and may neglect the long-term consequences of the acute disease process and factors reinforcing the illness. Also, based on these models, the patient's role is that of someone who is sick, temporarily 'immature' or 'not grown-up'. Dependency is reinforced by this. Rehabilitation of schizophrenic patients not only implies that symptoms must be treated, but especially that a person should learn to live as independent as possible with schizophrenia. In this sense the patient should be regarded as a 'student'. In other words; in traditional disease models the object of intervention is mostly 'the syndrome', whereas in rehabilitation the object is a subject; the person who has to deal with schizophrenia. However, rehabilitation does not exclude treatment. Schizophrenic symptoms, especially positive symptoms, should be treated with antipsychotic medication. Also, as stated by Watts and Bennett (1983); 'To wait until treatment is completed before considering rehabilitation can mean that the patient acquires some unnecessary secondary disabilities as a result of social inactivity'. It may also mean either that the patient's stay in the hospital is prolonged unnecessarily or that he is discharged without adequate preparation and with a consequently higher risk of relapse and readmission'.

The object of rehabilitation is the subject, a disabled person. In the literature, schizophrenia is associated with disabilities and handicaps. Both terms are used alternately. However, Watts and Bennett (1983) make a clear distinction. In their view 'disability' is the loss of functional ability consequent upon a disturbance, while 'handicap' is the social disadvantage consequent upon disability. This distinction implies that the social
environment of the patient, through its attitude towards the patient, can determine how far people with disabilities have become handicapped. Wing (1975) distinguishes between (a) pre-morbid, (b) primary and (c) secondary disabilities, as related to (a) disabilities which have pre-existed the illness itself, e.g. due to cognitive disturbances, personality-traits and mental retardation, (b) disabilities such as positive symptoms, that are thought to arise directly from the psychiatric

Table 1.3: Definitions of rehabilitation.

<table>
<thead>
<tr>
<th>Author</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wing (1963)</td>
<td>Helping a disabled person to make the best use of his residual abilities in order to function at an optimum level in as normal a social context as possible.</td>
</tr>
<tr>
<td>Anthony (1977)</td>
<td>To help the client to perform those necessary to function in his or her own unique living, learning and working environment, with the least amount of help necessary from agents of the helping professions.</td>
</tr>
<tr>
<td>Bennett (1978)</td>
<td>The aim of rehabilitation is resettlement.</td>
</tr>
<tr>
<td>Wing (1982)</td>
<td>Identifying and preventing or minimizing the causal factors while, at the same time, helping the individual to develop and use his or her talents, and thus to acquire confidence and self-esteem through success in social roles.</td>
</tr>
<tr>
<td>Watts &amp; Bennett (1983)</td>
<td>The process of rehabilitation, which involves improving levels of social adjustment, should ideally be a preparation for resettlement.</td>
</tr>
<tr>
<td>Liberman (1988a)</td>
<td>To sustain symptomatic improvement and the recovery of social and instrumental role functioning to the fullest extent possible through learning procedures and environmental supports.</td>
</tr>
<tr>
<td>Birley (1991)</td>
<td>Rehabilitation is what has to be done when treatment fails; it is an attempt to improve the patient's functioning through condensation of skill training, counselling, and environmental manipulation, together with efforts to develop and maintain a long-term support system.</td>
</tr>
<tr>
<td>Appelo et al. (1994)</td>
<td>Acknowledgement of vulnerability to psychotic episodes, compensation for functional disturbances and handicaps through the development of adaptive or coping strategies, development of effective role behaviour, and achievement of a gratifying position in the community.</td>
</tr>
</tbody>
</table>
Table 1.4: A multidimensional definition of rehabilitation.

<table>
<thead>
<tr>
<th>starting point</th>
<th>treatment is inadequate</th>
</tr>
</thead>
<tbody>
<tr>
<td>object</td>
<td>disabled person</td>
</tr>
<tr>
<td>focus</td>
<td>residual abilities</td>
</tr>
<tr>
<td>means</td>
<td>process of: prevention and minimizing of causes, skills training, education , counselling, environmental supports</td>
</tr>
<tr>
<td>aims</td>
<td>symptomatic improvement, acknowledgement of vulnerability, self control , confidence and self esteem, optimal resettlement</td>
</tr>
<tr>
<td>final condition</td>
<td>maximal independency, minimal but sufficient dependency on a long-term support system</td>
</tr>
</tbody>
</table>

disorder itself, and (c) disabilities which arise from reactions of the patient and others to the presence of the primary disabilities. Given the distinction between disabilities and handicaps, secondary disabilities also include handicaps.

The focus of rehabilitation should be on the identification and utilization of healthy aspects of the patient. These residual abilities, which are not affected by schizophrenia, must be used to deal with it. This implies that patients are not regarded as passive 'victims' of schizophrenia but as individuals who are able to reflect on it and to actively search for problem orientated coping strategies to deal with it.

With regard to the methods, first of all it is important to realize that rehabilitation is a process. According to Wing (1982) rehabilitation in schizophrenia consists of a long series of small steps, each depending on the success of the previous stage, but often with long periods in between during which little progress appears to be made. During this process, causes and disabilities should be diagnosed and minimized as far as possible by treatment, skills training, education, counselling and environmental support. Rehabilitation methodology should take into account these disabilities as far as they are permanent and impede the learning of skills. Diagnosis is primarily concerned with identification of disabilities, ineffective coping strategies, social role limitations and the limiting aspects of the symptoms. The individual's personality is diagnostically important as it may hinder the process of rehabilitation. In the social environment, diagnosis serves to evaluate rejection reactions, interpersonal dependency, and stress factors. Possible pitfall in the process of diagnosis is the reactivation of florid symptoms when a patient is put under too much pressure in a rehabilitation unit, group therapy or in intrusive personal relationships (Wing, 1982). It is also important to note that schizophrenia is associated with many symptoms lower in the diagnostic hierarchy and that negative symptoms are not (totally) immutable. Therefore, it would also be a diagnostic failure to assume that all these symptoms are part of 'schizophrenia' and in the case of grief, they may sometimes even be comprehended as 'normal'.

Besides symptomatic improvement, the aim of rehabilitation is resettlement, whose success is judged by the extent to which the disabled individual is able to work independently, to sustain ordinary domestic and family responsibilities, and to make enjoyable and creative use of his leisure time (Bennett, 1978). According to Watts and
Bennett (1983) a common misunderstanding about rehabilitation arises from the widespread failure to distinguish between this end point and the process of rehabilitation. They state that rehabilitation should ideally be a preparation for resettlement. The latter is concerned with what positions a person has in society, whereas rehabilitation is concerned with the level of functioning achieved. Unfortunate consequences of the failure to distinguish between rehabilitation and resettlement are a tendency to try to rehabilitate only those patients who are good candidates for resettlement, and to carry out resettlement without adequate or any prior rehabilitation. 'Resettlement' as defined here is synonymous to 'reintegration', which is often formulated as the goal of grief resolution (Ramsay, 1977; Sanders, 1989). However, in grief theories it is clear that reintegration into the mainstream of life can only take place after acceptance of the loss. As stated before, some disabilities related to schizophrenia can be comprehended as loss. A profound example is permanent cognitive disability. Therefore, the aims of rehabilitation including self control, confidence and self esteem, are related to the degree of acknowledgement of vulnerability and the everlasting risk that psychosis will return.

If a person is successfully 'resettled', his final condition should be one of maximal independency. However, because of the risk of psychotic relapse, in most cases a long-term support system or 'continuity of care' is considered vitally important. This should serve as a facilitating service for further development of independent living but also as a buffer between independent living and rehospitalization. Among others, essential components of such a service are organization of discharge planning, successful and rapid transfer, implementation of individualized service plans (Tessler et al., 1986) and 'case-management' activities such as advocacy for the patient and resource development, public education and crisis intervention (Intagliata, 1982).

1.5 Schizophrenia and rehabilitation: the state of the art.

Theoretical starting points and the multidimensional definition of rehabilitation clarify that disabilities should play a central role in objectives and means, and therefore in strategy of rehabilitation. According to Stuve et al. (1991) development of rehabilitation efforts in psychiatry began with addressing the educational and vocational problems of the chronically mentally ill. Later the instrumental and social skills deficits that hampered functioning in their living, learning and work environments were taken into account, and only most recently the emphasis has shifted towards cognitive disturbances. This development is based on the assumption that starting at the level of social positions and roles fails to produce positive results and that therefore rehabilitation should focus more on basic skills.

There is no doubt that in successful resettlement, participation in meaningful work is essential (Cnaan et al., 1988). However, the performance of a worker role is supposed to demand intact functioning at all levels of psychological organization; perceptual, attentional, cognitive, behavioural and social. As for example shown in table 2, schizophrenia has a particularly poor prognosis in the domain of regaining a functional work role. Inclusion of some type of vocational therapy in a rehabilitation programme for chronic schizophrenic patients will not guarantee that work skills and opportunities will be greater following discharge than before (Anthony et al., 1986). Bond and Boyer (1988)
state that there is little relationship between posthospital employment and successful participation in hospital-based vocational services, and that such programmes may even increase institutional dependency. However, this applies mainly to traditional vocational training, which is often a sort of obligatory 'busy work', where patients are required to perform some type of work which reflects neither their own motivation nor the skills they possess. Vocational training should be related to individual needs and motivation and should be pre-eminently suited to create a meaningful context for rehabilitation and its goals. According to Douzin and Carpenter (1981) most successful vocational programmes are those that include integration into the community and provide long-term support to patients once they become employed. This is stressed by Kramer and Beidel (1982) who found that patients with a psychiatric disability were unlikely to retain the job they found.

Traditional approaches fail to address the fact that in schizophrenia an important cause of the loss of a job is not only an inability to do the work, but also a lack of skills at the emotional and interpersonal level. Similarly, job finding skills are often deficient in schizophrenic patients (Anthony, 1979). Therefore, training social skills deficits that hamper functioning in living, learning and work environments occupies an important place in current rehabilitation therapy programmes (Bellack et al., 1989; Benton & Schroeder, 1990).

Level of functioning in various social roles has been found to be a strong predictor of development and course of symptoms and quality of social life after discharge (Liberman, 1988b). Farkas et al. (1986) report that schizophrenic patients with competent social skills have significantly longer remissions than those with relatively incompetent social skills. The effectiveness of social skills training in schizophrenia has been reviewed several times during the past years (e.g. Vaccaro & Roberts, 1992).

Evidence is provided that social skills training is a feasible treatment strategy for schizophrenic patients, especially for specific behavioural skills such as eye contact, voice volume and appropriate gestures. Generalization of these behaviours is moderate to substantial (Goldsmith & McFall, 1975; Liberman et al., 1984). However, training of complex social skills has not yet led to many positive results, particularly in the long run. Generalizing from learned skills poses a serious problem, as behaviour learned in a therapeutic setting is seldom transferred outside that setting (Bellack et al., 1989; Vaccaro & Roberts, 1992).

Failures in generalization of social skills have traditionally been explained in non-cognitive terms. They are attributed to short training periods (trials of social skills training for schizophrenics are usually ten to twenty hours), lack of specific training procedures to facilitate generalization such as in vivo practice in various settings, and overemphasis on isolated skill components such as eye contact, voice volume, intonation and body posture (Wallace et al., 1980).

Social skills training presupposes that information can be processed smoothly. However, the cognitive disturbances that schizophrenic patients have to cope with, disrupt the understanding of social situations (Van der Gaag et al., 1994). Understanding of social perceptions (social norms and negotiating personal and interpersonal judgments) is a problem for people with schizophrenia (Platt & Spivack, 1972; Platt & Siegel, 1976). Therefore, the focus of intervention has shifted to cognitive disturbances.

Spring and Ravdin (1992) state that despite initial positive results between 1960
and 1980, a lot of scepticism about cognitive remediation in schizophrenia was present. According to these authors, arguments were based on reservations about the state of the supporting empirical evidence, for example whether the impaired cognitive functions can be retrained and whether generalization can be achieved to important behaviours. It is also argued that cognitive retraining is unnecessary because basic deficits in psychological functions are expected to improve naturally as a result of macrolevel psychosocial interventions. However, the authors believe that scepticism is not empirically based and that psychological interventions were neglected because of the belief that antipsychotic medications already offered an adequate treatment. Antipsychotic medication has traditionally played a role in treatment of schizophrenia. Regarding the patient's extent of vulnerability to stress, medication facilitates coping by providing a biological buffer to stress. It is well known that, although drugs are able to extend periods of remission, they cannot always prevent decompensation nor can they produce new coping skills (Hogarty et al., 1974; Vaccaro & Roberts, 1992). It is evident that antipsychotic medication is frequently necessary to facilitate skills acquisition. In that sense, it may be regarded as a necessary but incomplete prosthetic for skills acquisition. The side effects of medication must be systematically studied and prevented as they can hinder training.

Activation by means of multi-level skills trainings does not include the fact that in schizophrenia several (permanent) losses are enmeshed. In addition to activation, psychoeducation of patients and relatives is currently an important part of therapy focusing on the acceptance of disabilities (Quinn, 1986; van Meer, 1991). Psycho-education can lead to a change in expectations, an increased knowledge, the awareness of when to ask for help, a better compliance to treatment, a decrease in negative symptoms, and improved coping strategies in important relationships. Also, family education is used as a contribution to rehabilitation efforts. Major objectives of education programmes for relatives are to impart knowledge and to help with the daily management of the mentally ill relative. Research data on this issue show that the therapeutic role of family education programmes has not been clearly demonstrated (Kazarian & Vanderheyden, 1992) and that brief educational packages have no substantial benefit other than a gain in knowledge (Lam, 1991). However, relatives tend to rate them as helpful, and in some instances these programmes seem to relieve guilt and self-blame in families. Also family education is an important means of initiating support, and establishing a partnership and therapeutic alliance (Kazarian & Vanderheyden, 1992).

In summary, rehabilitation strategy in psychiatry changed from a 'top down' to a 'bottom up' method. Initially social positions and role behaviour were taken as a starting point for training. However, this method did not seem to be effective. Therefore, the focus has shifted more to 'bottom up' rehabilitation, starting at the level of information processing and basic skills. This state of the art serves as a practical basis for development of a bottom-up clinical rehabilitation programme. Step by step, the programme focuses more on development of role-behaviour to obtain a social position outside the hospital.

In the present study a differentiation is made between 'remediation' of cognitive disturbances and 'taking into account' the presence of cognitive disturbances. It is assumed that whether cognitive functions are trained or not, a general training methodology is needed which guides the learning process and takes into account impeding consequences of cognitive disturbances. So, taking into account the presence of cognitive disturbances is considered to be a necessary methodological precondition for successful resettlement. An
important question of research is whether this precondition is sufficient or whether the explicit training of cognitive functions aiming to remediate disturbed processing of information, will also be required. Therefore, in one condition of the programme, a cognitive skills training will be added to the programme.

The next chapter deals with information processing in schizophrenia. A cognitive model for skills acquisition is presented which, in chapter 3, will be translated into the general rehabilitation strategy which is considered necessary for a successful application of the rehabilitation programme.