As described in a number of recent reviews, most people with severe mental illness do not experience unremitting lifelong dysfunction (1–3). Results of large scale studies detailed in these reports reveal that most individuals with these conditions can move meaningfully toward or achieve recovery over the course of their lives. As a consequence, recovery is now understood internationally as the goal of psychiatric and rehabilitative treatments (4, 5).

Importantly, recovery is increasingly conceptualized as existing along a range of distinct continuum or domains (3, 6–9). For instance, recovery may be discussed in terms of objective changes in a person’s life, changes that could be readily observed by any number of other people who know the recovering person. This could include the remission of symptoms such as hallucinations or depression and the achievement of discrete psychosocial milestones such as returning to school or work. On the other hand, recovery may also involve subjective changes in a person’s life, that is, changes in someone’s experience of daily life and his/her place in the larger world.

As we have suggested elsewhere, recovery in the subjective domain may itself refer to two different kinds of phenomenon: the appraisal of one’s life circumstances and opportunities, and the experience of oneself as an individual human being in the world (2). Appraisal of life circumstances could refer to an evaluation of external conditions, both in the present and in terms of possibilities for the future. Recovery in this domain, for example, might involve perceiving that one has achieved an acceptable standard of living or involve developing a sense of optimism that the future holds opportunities for personal advancement. The second subjective dimension, by contrast, thus refers to the experience of internal qualities, issues closer to matters of identity. To recover in this domain then

Quantitative Assessment of Changes in Self Experience: An Overview of Research of the Scale to Assess Narrative Development

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Abstract: Studies of the long-term course of severe mental illness suggest movement towards and the attainment of recovery is more the rule than exception. While this has spurred on the development of ways to assess many of the objective forms of recovery, less work has been devoted to designing tools to assess subjective aspects of recovery, in particular, aspects of recovery linked to changes in sense of self. In this paper we present information on our efforts to develop a quantitative measure to assess qualities of self-experience in severe mental illness. This instrument, the Scale to Assess Narrative Development, contains four subscales which can be used to assess, on the basis of a spontaneous speech sample, the extent to which persons understand themselves as active agents in their own lives who are connected to others, possess basic social value and who can coherently describe challenges they face. Results of cross-sectional studies and case analyses are presented which provide promising support for the reliability, validity and utility of this instrument. Needs for future research are detailed.
might mean to regain the sense that one possesses intrinsic human value, competence, and the ability to meaningfully make sense of one's own life's challenges and triumphs in a consensually valid manner (10–12). This may involve the development of both positive beliefs about the self but also the recovery of a fuller sense of self in place of the experience of one's identity as having been diminished or irreparably shattered (13–17).

Distinguishing between objective and subjective domains of recovery has several advantages. It allows for a view that growth in one domain is not synonymous with changes in another. A reduction in delusions might be unrelated to hope for a satisfying life. Greater insight might lead to greater distress and not less. Renewing education might not alter a deep sense of self as a marginalized person. Distinguishing between the two subjective domains may also have several advantages. For one, it allows us to see how persons might appraise themselves as fully possessing a sense of worth and yet be dissatisfied with experiences at work. Alternatively, we can see how someone might embrace a new role in his or her community but still feel essentially inadequate and maybe even attribute good quality of life to the actions of someone else.

Viewing recovery as dimensional also allows an appreciation of the synergy that could ensue from growth across multiple dimensions with changes in the life of the recovering person being greater than the sum of individual gains.

One clear implication of this view is that in order to understand the processes of recovery we need to develop means to assess changes in these domains. To date, progress has been made in developing assessments of the objective domain and the first subjective domain assessment of recovery. Tools are being currently utilized which have criteria for symptom remission, psychosocial function, and appraisals of life satisfaction (8, 18, 19). Unclear, however, is how to assess changes in the most personal category of recovery experiences: subjective changes in sense of self. Certainly mainstream views exist which plainly suggest that this should be assessed qualitatively (6). In the extreme, it has been argued that sense of self cannot be quantified without doing damage to the subjective experience of the individual person. We have rejected these views, however. Taking the position that such changes can be observed and agreed upon by others from an objective stance, we sought to develop a reliable and valid means to assess sense of self in schizophrenia, one fully in line with the spirit of recovery. In this paper, we will describe our efforts to create such a tool: the Scale to Assess Narrative Development (STAND). Specifically, we will describe the conceptual basis for the instrument, stages of development, assessments of its psychometric properties, links with other assessments of recovery, and plans for future study.

**Theoretical Basis for the Development of the Scale to Assess Narrative Development**

The development of the Scale to Assess Narrative Development (STAND) was spurred on by our experiences in the late 1980s and early 1990s. Working in a wide variety of outpatient settings with clients with schizophrenia spectrum disorders, we observed profound changes in how persons with severe mental illness involved in rehabilitation and psychotherapy came to think of themselves over time (20). While uncertain about how to describe the changes that we observed over time, there was a consensus that something important had changed and was related to how recovering persons were experiencing themselves. In this sense, within our discussions of how persons were recovering, we posited that there was a continuum which could be objectified. If people could agree roughly about where persons were on a given continuum, perhaps a quantitative scale could be developed, one which could address the subjectivities of the persons in question.

To develop the content of that scale, we chose to look at one aspect of self-experience, namely personal narrative. Narrative theory of self experience stresses that a sense of self can vary from a state of more to less coherence according to how it is constituted with a past and present as embodied within the stories one tells oneself and others (21). In other words, a human being's sense of self is meaningfully evolved and sustained over time within the form of stories and the conversations which create and re-create those stories. These stories though are not merely repositories for human experience.
The stories we tell about ourselves not only describe who we are but are the basis for social connection, making sense of possible futures and guiding us to act in particular ways. For example, telling a story of my life as one of failure, overcoming challenges, victimization, determination, or dumb luck not only offers different interpretations of certain life events but will color my relationships differently, lead me to make different predictions about the future, and guide me in moments of crises to act differently. If I see my life as a failure and I try to return to work I might interact, for instance, with others in a way that does not instill confidence; I might expect the worst and choose not to persevere when difficulties or conflicts arise.

Turning to the examples of recovering persons whom we knew, we considered if the noticeable changes were in part a result of them developing broader and richer narratives. In other words, perhaps one aspect of change in this most subjective domain of recovery involved noticeable differences over time in how persons were organizing self-experience within the stories they were telling themselves and others. Perhaps what we were observing was that persons were coming to tell, and to understand themselves in terms of fuller and more intricate stories. Davidson (6) has suggested many with severe mental illness may struggle to see themselves as worthy subjects of a story. We and others (7) have linked this to a periodic failure to either narrate one’s life, such as forfeiting attempts to make sense of the thread in one’s life story, or to tell stories of oneself which are impoverished or maladaptive in some sense. Consequently, we set out to create a scale where scores might reflect variation in this very phenomenon, the degree of richness of narratization of one’s life.

The Four Subscales of the Scale to Assess Narrative Development

With these issues in mind, we thus sought to develop a series of quantitative anchor-based scales which raters could use to measure the extent to which persons were telling reasonably full personal narratives on the basis of an appropriate sample of their speech. Our goal was to develop semi-independent scales which could be considered alone but which could also be added together to produce an overall index of narrative development. Based on readings of existent qualitative work (12. 22) and observations of the recovering persons we knew, we formulated a series of categories along which persons could vary and which, when looked at as a whole, might show a reasonably full narrative of life. We then divided those categories into five points in order to provide raters with a middle point (a “3”), allowing them to metaphorically “sit on the fence.” In the case of each scale, we considered a score of “1” to represent the absence of the phenomenon in question and a score of “5” to indicate its full presence. Of note, we did not intend a score of “5” to represent the fullest possible personal narrative, but one which met the threshold of the minimum, an indication of a level that would reflect a reasonable narrative which could still grow and become more enriched.

With institutional approval, we then began exploring de-identified spontaneous speech samples of persons with severe mental illness with blind raters from a range of professional backgrounds and depths of experience working with adults with severe mental illness. Based on those initial attempts, we concluded raters could reasonably agree on four scales which we believed might play a reasonable role in a personal narrative and provide the basis for sense of self, social connection and action in life. As detailed in Table 1, the four subscales we placed within the STAND were: Illness Conception, Alienation, Agency and Social Worth. Illness Conception assesses the extent to which persons experience and can provide a plausible account of their psychological challenges. Scores are intended to vary on this dimension from a place where persons are without any account of any challenges to an expression of a coherent sense of what is wrong. Alienation assesses the extent to which persons experience intimate connections to others in their families or communities. Scores are intended to vary on this dimension from persons having no intimate ties to others to having at least one meaningful sustaining relationship with another human being. Agency, the third dimension of the STAND, assesses the degree to which persons experience themselves as able to affect events in their own life. Variation in agency scores can reflect movements from an inability to
apprehend the causes of life events to an experience of oneself as actively able to affect others or events in one's life in a meaningful and plausible manner. This concept is similar to others, such as internal locus of control, but may be distinguished as suggesting a more global experience of oneself as being meaningfully engaged in action. For instance, for me to see myself as an agent in my own life is not only to feel some sense of control but also to experience that the living of my life is up to me and that my choices matter. Finally, Social Worth assesses the extent to which persons experience themselves as valuable to others and society. As also illustrated in Table 1, variation in these scores suggests the absence of any past or present social worth to a present sense in which one sees oneself as a genuinely meaningful member of one's community, family, work place, etc. As noted above, each of these dimensions is conceived of as semi-independent; thus it is conceivable that any range of scores is possible (e.g., a participant could receive a "1" on Illness Conception and a "5" on Social Worth or a "1" on Alienation and a "5" on Agency).

The STAND, as developed, instructs raters, using the anchors in Table 1, to look beyond isolated or discrete cognitions, and instead to determine an overall view of each aspect. Making inferences about defensiveness or matters of inner conflict do not factor into this comprehensive determination. Raters are instructed to holistically review four different aspects of a storied account using an appropriate spontaneous speech sample. Each of these four aspects or subscales of the STAND are to be rated based on the rater's sense of the gestalt of the whole story: In general does the participant view him or herself as an active agent in the unfolding events of their life? A value important to keep in mind is that the narratives in question are those of human beings seeking to make sense of their thoughts, feelings, past, present and future, and raters must be able to appraise the variation of these experiences in addition to understanding the privilege to witness them. Because we understand the phenomenon (e.g., agency) as varying along a continuum, we, therefore, allowed raters to use .5 as a midpoint between the scores (i.e., 1.5, 2.5, 3.5 and 4.5) when there is indecision on which of two scores best characterizes the person's narrative.

As a final comment on the scale, conceptually we intended that the highest possible score, a "20," would reflect a reasonably full or rich account of oneself which includes a picture of oneself as an active agent, connected to others, possessing social value and with a coherent account of challenges including psychiatric needs. A "20" then would simply suggest a sense of self that is sufficiently narratized in order to cope with ongoing challenges, relate to others and make decisions about the future. A highest possible score was thus not meant to reflect a supreme attainment of self actualization nor the most adaptive narrative possible. Paralleling this, as can be seen in Table 1, the highest ratings of each subscale are not intended to reflect the highest achievements in that area. A rating of "5" for agency, for instance, is not meant to suggest the highest possible level of that quality, again just merely one that is wholly "good enough."

Empirical studies of the STAND (2005 to Present)

Cross sectional analyses
To date, to assess the reliability, validity and utility of the STAND, we have conducted two very different types of studies. The first of these are traditional empirical studies in which we have obtained a relatively large number of STAND ratings on the basis of semi-structured interviews given to persons with schizophrenia spectrum disorders and then examined whether those ratings were reliable, valid and linked to other aspects of recovery. Of note in these studies, the semi-structured interview which was used as the basis for the STAND ratings was the Indiana Psychiatric Illness Interview (IPII, 23). The IPII is a semi-structured interview divided conceptually into five sections. First, participants are asked to tell the story of their lives in as much detail as they can. Second, they are asked if they think they have a mental illness and what has and has not been affected by their condition. Third, participants are asked if their condition “controls” their life, if they “control” their condition, if others are affected by their condition and if their condition affects others. Fourth, participants are asked how their illness affects and is affected by others. Last, participants are asked what they expect in the future. The IPII differs from other psychiatric
### Table 1. Anchors for the Scale to Assess Narrative Development (STAND)

#### Illness Conception
1. The client does not perceive anything is wrong on any psychological level.
2. The client perceives pain or confusion but only in a global or vague manner (e.g., “my mind is confusion, my self is unintelligible”).
3. The client perceives only a limited number of specific psychiatric problems or challenges with minimal and perhaps implausible or limited elucidation (e.g., “I am depressed and see visions”).
4. The client perceives many discrete problems but without a plausible account of etiology (“I am depressed, withdrawn, have hallucinations caused by the devil”).
5. The client perceives that there are many discrete problems or challenges with elucidation and a plausible account of etiology (“I am emotionally withdrawn, have hallucinations of devils and angels and that is because of losses in my life and a chemical imbalance”).

#### Alienation
1. No evidence that the client perceives any closeness to others, nor does he desire such closeness.
2. The client expresses a desire for closeness but has only the thinnest connection with others tempered by fear (e.g., “I thought about calling my father but couldn’t because I was afraid”).
3. The client has a few social connections that exist because of family ties/passivity, or fulfillment of role (e.g., “I talked to my father briefly when he called last week”).
4. The client has multiple ties and plays an active role but there is no evidence that these are more than casual (e.g., “I visited with my father on Thanksgiving Day but didn’t say very many things that were all that personal”).
5. The client perceives that he has at least one fulfilling intimate tie with a discernable person (e.g., “I walked with my father and we talked about many of our worries”).

#### Agency
1. No evidence the client perceives that he can affect events in his own life, nor can he discern causes of life events.
2. The client perceives that discernable forces affect life but those forces are exclusively, or almost exclusively, supernatural or implausible (e.g., “The government is controlling the traffic outside my house”).
3. The client perceives that events in his life are influenced only by forces outside of himself, but those forces are plausible, can be discerned and influenced. (e.g., “I did it because my brother said so”).
4. The client perceives that he can affect his own life minimally or can affect his life but primarily by resisting or passive protesting (e.g., “I resisted the temptation through sheer will power”).
5. The client perceives that he can act and affect life course actively (e.g., “I decided to talk with my mother and it helped everything”).

#### Social Worth
1. No evidence that the client perceives that he has value to others, actual or potential.
2. The client perceives he may have minimal value socially but mainly because of past deeds. There is little evidence of future hope. The client may note that he has skills not actualized in role performance (e.g., “I was a good cook but don’t cook any more”).
3. The client fails to perceive that he has current value to others, but may have value because of past deeds and has potential to be of value in the future (e.g., “I put in an application for a job”).
4. The client perceives that he is currently of some value to others in general, but not to specific persons or in a way that uniquely distinguishes them (e.g., “I do my job well”).
5. The client perceives that he is of value to others presently, with reference to specific contributions or benefits observed by others (e.g., “My daughter relies on me for emotional and financial support”).
interviews in that it does not introduce content. Interviewers may non-directively ask for clarification, but issues are not raised for participants to resolve, nor are they queried about specific aspects of illness.

In the first of the empirical STAND studies (24) we rated the IPII narratives using the STAND for 20 adults with DSM-IV diagnoses of schizophrenia and 14 with diagnoses of schizoaffective disorder recruited from the outpatient Psychiatry Service of a VA Medical Center and a Community Mental Health Center. All participants were in a post acute phase of illness as defined by having no hospitalizations or changes in medication in the month prior to assessment. All raters possessed a minimum of a masters degree in a mental health related field, had some experience working with individuals with severe mental illness and were trained by the first author. An acceptable degree of interrater reliability was established prior to rating (intraclass r for the total score = 0.88). STAND scores were then correlated with two other common indices of recovery administered at the same time as the IPII: self-esteem as assessed using the Rosenberg Self Esteem Schedule (25) and readiness for change using the Stages of Change Questionnaire (26). Correlations between these measures indicated that overall higher ratings on the STAND were associated with greater levels of self-esteem and greater overall readiness for change. Specifically, greater levels of readiness for change were linked with greater Illness Conception and greater self-esteem was linked to higher levels of Social Worth and Agency.

In the second study (27) we used another sample of 40 adults with schizophrenia and 25 with schizoaffective disorder, all recruited from the outpatient Psychiatry Service of a VA Medical Center and similarly in a post acute phase of illness. As in the first study, evidence of satisfactory interrater reliability was found prior to rating (intraclass r for the total score = 0.88). STAND scores were then correlated with two other common indices of recovery administered at the same time as the IPII: self-esteem as assessed using the Rosenberg Self Esteem Schedule (25) and readiness for change using the Stages of Change Questionnaire (26). Correlations between these measures indicated that overall higher ratings on the STAND were associated with greater levels of self-esteem and greater overall readiness for change. Specifically, greater levels of readiness for change were linked with greater Illness Conception and greater self-esteem was linked to higher levels of Social Worth and Agency.

In the third of our STAND studies, a larger sample was obtained from the pool of the first study (n = 51) and we sought to test a model of the impact of self-stigma and impairment of metacognition on self experience in schizophrenia spectrum disorders. In this study, concurrent assessment of self stigma using the Internalized Stigma of Mental Illness Scale (30) and metacognition using the Metacognition Assessment Scale (31) were attained. A stepwise multiple regression controlling for age, social desirability and awareness of illness revealed that higher STAND ratings were significantly associated with greater ratings of metacognitive capacity and lesser ratings of personal acceptance of stigma. Social worth, interestingly, was most closely linked to self-stigma, while ratings of Mastery, a subscale of the Metacognition Assessment Scale linked to problem solving, was closely linked to all of the STAND subscales.

Case Studies

While the first three STAND studies presented explored concurrent correlates of the STAND based on standardized assessments, in two other studies we have taken a different approach. Here we explored in intensive case studies changes in STAND scores over the course of psychotherapy by having trained raters rate randomly selected psychotherapy transcripts blind to time over the course of treatment in individual psychotherapy. Again raters possessed a minimum of a masters degree in a mental health related field, had experience working with persons with severe mental illness and were trained by the first author. Our intent was to determine whether it was feasible to make STAND ratings on the basis of psychotherapy
transcripts, whether we could detect change over time and whether changes in the STAND were linked to changes on other assessments of process and change.

In the first of these studies (32), we examined the psychotherapy transcripts of a single client over 32 months. The psychotherapy was integrative and the client was a divorced male, with a high school education, in his 50s with schizophrenia, and who was living in the community. He presented with moderately severe levels of positive and disorganization symptoms. Two psychotherapy transcripts were randomly selected from each month of treatment and assessed by one rater who used the STAND and another rater who used a scale which assessed the structural coherence of the speech samples of the client. As in the studies noted above, raters were trained by the first author and accepted levels of interrater reliability were achieved before the start of the study. Results revealed statistically significant improvement in STAND scores over time with a generally non-linear course where frequently gains were followed by lesser setbacks which were followed by even greater gains. For instance, in early transcripts the client described the events around him in a manner that made it difficult to discern what was causing events or what role, if any, he played in them other than as a ghostly observer. In later transcripts it became apparent that he had an idea of why things happened as they did, although he never portrayed himself as someone who could affect anything in the story. Finally, in the last set of transcripts he described interactions with specific people in which he had clear and plausible ideas about the impact of his behavior as well as alternative ways to think and act. He spoke as someone living his life rather than observing it in a peculiar and distant manner. Interestingly, changes in the structural integrity of the speech samples increased in coherence before there were significant changes in the STAND as illustrated above. Additionally, analyses revealed gains in Agency occurred significantly before gains in Illness Conception. It was only after the client began to describe himself as able to affect life events that he started to consider that he had a definable mental illness with discrete symptoms. Qualitative assessments of gains also suggested, concurrent with improvements on the STAND, were symptom reduction, the development of greater intimacy with family members and overall improvements in function.

In the second study (33), transcripts from 22 months of integrative psychotherapy were analyzed. The client in this case was also a man with schizophrenia in his 50s with a high school education. In contrast to the client in the first study, he had severe negative symptoms and relatively mild cognitive dysfunction. In this study, after interrater reliability was established, raters, blind to time, conducted qualitative and quantitative assessments of transcripts of an integrative psychotherapy which spanned a period of 22 months. Again there were significant improvements in STAND scores over time, with the structural integrity of the speech samples increasing in coherence before there were significant changes in the STAND. In this study, results also suggested that the therapeutic alliance occurred in lockstep with improvements in the STAND. It was interpreted that as the therapeutic alliance became stronger, this allowed for the client to begin developing a richer narrative of his life. As in the first study, significant psychosocial improvements were noted to occur along with changes in STAND scores.

Conclusions and Future Study

To attempt to quantitatively assess changes in how persons with severe mental illness experience themselves as being in the world we developed the STAND. On the basis of the results of our three cross-sectional studies we suggested that there is at least initial evidence of the reliability, concurrent validity and possible utility of this measure. We also suggest that the two intensive case studies also provide preliminary evidence that the STAND may meaningfully quantitatively track changes in a subjective domain of recovery over time. Results of all of these studies may further be interpreted as suggesting the overall viability of an instrument that can quantitatively assess self experience as a domain of recovery from severe mental illness.

There are, though, many limitations to date of the work accomplished so far and much more research is needed in the future. For one, we have
studied the STAND using narratives collected in a research setting and also psychotherapy transcripts which involve spontaneous speech in the context of an evolving therapeutic relationship and it is yet to be explored how these methodologies differ. Additionally, all studies were conducted at the same site and participants were largely males, with schizophrenia spectrum disorders, enrolled in treatment and in a post acute phase of illness. Replication is needed, therefore, in multiple sites with many more persons with varying backgrounds, including women, persons with less debilitating courses of illness and those in the early stages of illness. Larger scale longitudinal studies are also needed to tease apart the extent to which the phenomena assessed by the STAND are linked to changes in other domains of recovery. Studies are also planned to look at changes in STAND scores for persons participating in a range of other rehabilitative treatments. Finally, narrative constructions of self-experience would seem to be at least as idiographic as any other variable in social science. Thus it is likely that the STAND may require and undergo a host of conceptual refinements as future work is performed.

References

27. Lysaker PH, Buck KD, Hammoud K, Taylor AC, Roe D. Associations of symptom remission, psychosocial function and hope with qualities of self experience in schizophrenia: Comparisons of objective and subjective indicators of recovery. Schizophr Res 2006;82:241–249.