

# Do You Hear Voices? Problems in Assessment of Mental Status in Deaf Persons With Severe Language Deprivation

Neil Glickman

Westborough State Hospital

Assumption College

When mental health clinicians perform mental status examinations, they examine the language patterns of patients because abnormal language patterns, sometimes referred to as *language dysfluency*, may indicate a thought disorder. Performing such examinations with deaf patients is a far more complex task, especially with traditionally underserved deaf people who have severe language deficits in their best language or communication modality. Many deaf patients suffer language deprivation due to late and inadequate exposure to ASL. They are also language dysfluent, but the language dysfluency is usually not due to mental illness. Others are language dysfluent due to brain disorders such as aphasia. This paper examines difficulties in performing a mental status examination with deaf patients. Issues involved in evaluating for hallucinations, delusions, and disorganized thinking are reviewed. Guidelines are drawn for differential diagnosis of language dysfluency related to thought disorder vs. language dysfluency related to language deprivation.

When people undergo an emergency psychiatric evaluation or are admitted to a psychiatric hospital, the clinicians evaluating them will try to determine whether they have a mental illness. They will perform a “mental status examination” to see whether the patient has a thought disorder, one indication of mental illness. The mental status examination is essentially an

The author wishes to thank the following people for their assistance with this paper: Wendy Petrarca, Susan Jones, and Michael Krajnak for their assistance in communication assessments; Michael Harvey, Robert Pollard, Philip Candilis, and Marc Marschark for their helpful reviews of this article; Pat Black for her research on the Westborough Deaf Unit which highlighted the significance of language deprivation in our clinical work. No conflicts of interest were reported. Correspondence should be sent to Neil Glickman, Deaf Unit, Westborough State Hospital, Box 288, Westborough, MA (e-mail: [neil.glickman@dmh.state.ma.us](mailto:neil.glickman@dmh.state.ma.us)).

attempt to get inside the head of the person and understand how he or she thinks. The clinician will draw conclusions based on observations of behavior, reports from others, and, most importantly, by listening to what patients say and how they say it. Among other things, the clinician will be looking for evidence of language dysfluency, of odd, unusual expressions of language, because these are often indicators of mental illness.

What happens when the patient is a person who is prelingually deaf who did not receive adequate exposure to ASL? This person will probably show a great deal of language dysfluency in his/her best means of communication, sign, and far worse language problems in a spoken language like English. How do mental health clinicians make sense of the language patterns of these patients? How can they determine whether language problems are due to mental illness, language deprivation, both, or some other factors?

## Example: A Psychiatric Patient With Severe Language Problems

Juanita<sup>1</sup> is a 23-year-old deaf, mild to moderately retarded woman who was placed in the Mental Health Unit for Deaf Persons, a deaf psychiatric inpatient unit in Westborough, Massachusetts, after demonstrating severe behavioral problems in her group residence. She grew up in a developing country where, as far as we know, she received little education or sign language exposure. Upon arrival in the United States

at age 13, she was placed in a residential program for deaf persons with emotional and behavioral problems where staff used ASL. We know she experienced physical and sexual abuse as a child.

On arrival to the Deaf Unit, Juanita is interviewed by the clinical team that includes deaf and hearing clinicians with extensive experience in treatment of deaf people. The team also includes expert interpreters, trained in mental health interpreting, and a Deaf communication specialist, a near-native signer who works as a Deaf interpreter, simplifying sign language and gesture for deaf persons without full ASL abilities. When the team interviews Juanita, they notice right away that her sign language is poor. It is very difficult, even for the communication specialist and top-level interpreters to understand her fully.

At a later point in her treatment, the team decides to get a language sample to study in more depth. After securing the needed permission, the communication specialist and interpreters interview her and videotape her responses.<sup>2</sup> She is interviewed about her family and life, and at one point the interviewers deliberately ask her abstract questions with vocabulary they know she does not know. Their purpose is to see how she handles a question she does not understand. For instance, does she sign, "I don't understand. What do you mean?"

Interviewer: What's your favorite food?

Juanita: H-I-A-T-H-T-I-A-H-T-I FISH R-I-C-E, R-I-C-E HOT P-E-P-P HOT LEMON *mash fold in palm* BANANA, O-I-L, O-I-L, *flip, flip put in palm smash.*

Interviewer: Do you vote?

Juanita: NO.

Interviewer: Why not?

Juanita: ME GO GO SUPPOSE SUPPOSE SUPPOSE SUPPOSE GO MEET MEET MEET MEET ME ME ME NAME FAMILY FAMILY FAMILY ME FAMILY C-A-M-G-I-D-E-R GO T-X-I-A-X-I-T DRIVE DRIVE DRIVE HOME VISIT HAPPY ME MY GO HOME LOOK LOOK LOOK LOOK BUY BUY BUY BUY CLOTHES SHIRT SHOES FOOD SHOP HAIR FINISH BRAID DIFFER-

ENT DIFFERENT DIFFERENT *counts off 1-2-3- on open hand beginning with middle finger.*

Interviewer: Are you Democrat or Republican?

Juanita: ME GO FRAMINGHAM (sign) NOT FAR OVER-THERE (to her left) THEY SAY MEET ME MEET HEY HEY HEY ME HOME BACK (signed toward Framingham) visit P-A-P-A-P-A MAMA PLANE (take off) *ticket have passport have* SISTER, SON 5 SON 5-SON (# incorporation) 5-SON 5 JOSE JOSE JOSE 2 JOSE SISTER SISTER SISTER SON B-O-R-N-E FOSTER 5 5 *holding luggage and putting it down* ARRIVE BACK FRAMINGHAM NOT FAR HOTEL HOTEL HOTEL RIGHT THERE RIGHT THERE RIGHT THERE (Framingham space) FINISH BACK (Framingham space) PUERTO RICO VISIT FOOD PLAN FOOD DELICIOUS NICE BELT BUCKLE WALK CAN'T BELT BUCKLE BETTER FOOD WAIT WAIT WAIT *leaving food on tray* ARRIVE FOOD FINISH BACK WALK ARRIVE BACK FINISH GO EAT FINISH *giving tray back pushing cart* ARRIVE PLANE FINISH HI SAY HI NICE HI CUTE MEET HAPPY HUG FRIEND FOOD R-I-C-E NEW (using fingers to indicate triangular shape) SMELL SMELL SMELL GOOD NEW NEW NEW *slice drink* MATCH SPARKLER (thrown in air) STARS STARS STARS STARS (fireworks?) STARS STARS STARS PRETTY SUN RAIN NONE NO RAIN HAVE HOME BEAUTIFUL SUN GOOD OUTSIDE BOAT (signed as if it is a powerboat) PRETTY FISH EAT DELICIOUS BOAT ROW *carrying sack over shoulder picking up fish? Throwing in something twice* FINISH *scraping fish? (scaling?)* KNIFE *scrape* THROW FINISH.

Juanita is using a combination of signs and gestures but this is not fluent ASL. Her language is "dysfluent," meaning that it is severely impaired in ways that we will analyze shortly. When the Deaf unit team showed this videotape to a competent psychiatrist who is not trained in working with deaf people, and transliterated it just as we did here, his conclusion was that Juanita was probably psychotic. He knew that mental illness can

create language problems, and without much experience working with persons with extreme language deprivation, this was the natural conclusion for him to draw. The Deaf unit team knew, however, that Juanita's poor language abilities in her best language, ASL, could also be explained by impoverished educational environment and severe language deprivation. In addition, Juanita is mentally retarded and may have other kinds of brain pathology. How could the team judge whether she was, indeed, thought disordered?

### Selected Literature Review

The problem of evaluation of "mental status" in a deaf person without fluent language skills has been addressed before (Evans & Elliott, 1981, 1987; Gulati, 2003; Kitson & Thacker, 2000; Pollard, 1998) but mostly with regard to pointing out potential dangers or mistakes clinicians may make. The easiest and most glaring mistake is to draw conclusions about mental illness on the basis of the spoken or written language skills of the deaf person. For instance, Evans and Elliott (1987) write,

The cultural language of the deaf community, American Sign Language (ASL) is not readily translatable into syntactical and grammatical English. Consequently, to the examiner unfamiliar with ASL, the written language of many deaf adults appears fragmented, confused and primitive. Such English language deficits may give the appearance that deaf ASL users think in vaguely holistic and concrete terms, and their written communications may strikingly simulate a severe thought disorder. (p. 84)

Pollard (1998) elaborates on the dangers of drawing conclusions based on deaf person's English language skills and then addresses the larger problem that language dysfluency in deaf persons usually has different causes from language dysfluency in hearing people. Language dysfluency in deaf people is usually related to severe language deprivation, a problem that may be confused with, or confounded by, mental illness that develops later.

Because deaf individuals' knowledge of English vocabulary and syntax is frequently limited, written communication, if essential, must be kept at

very modest difficulty levels. Idioms and expressions are particularly to be avoided, as these are frequently the last and most difficult aspects of language usage to master. The most extreme caution should be exercised in conjecture about the person's education, intelligence, and thought processes on the basis of their writing. The risk of overpathologizing is very great, even when writing samples appear to be severely limited or disorganized. This is not at all uncommon and usually, but not always, evidence of educational or experiential limitations, not psychopathology. (p. 176)

Essentially, disrupted communication fluency in hearing persons is indicative of psychosis, aphasia, dysphasia, or related serious mental disorder. Yet, the majority of deaf patients who demonstrate gross limitations in communication fluency (in ASL, English, or other modalities) do so for reasons other than neuro- or psychopathology. Expert consultation is needed to identify neuro- or psychopathology based on communication impairment in deaf people. Interpreters are not typically qualified to render such opinions, as their education does not address the nature of psychotic or aphasic disruptions in sign language. (p. 177)

As Pollard explains, disorders like schizophrenia may cause disruptions in thinking and language expression, and the English language output of deaf persons whose primary communication is through a sign language should never be used to draw diagnostic conclusions. Psychotic disorders can disrupt thinking in known, predictable ways, but one needs to observe this in the *native* language of the patient. Evans and Elliott (1981) performed pioneering work, examining well-known criteria for schizophrenia and analyzing which of these criteria were applicable to 13 deaf adults diagnosed with schizophrenia at the University of California San Francisco Center on Deafness. Kitson and Thacker (2000) and Thacker (1994, 1998) built upon their work to record and analyze the sign language output of deaf persons diagnosed with schizophrenia. These important early studies found that formal thought disorders may manifest in sign language in ways that mostly parallel their appearance in spoken languages.

Some of the examples of language dysfluency related to thought disorder (LDTD) that Thacker (Kitson & Thacker, 2000; Thacker, 1994, 1998) observed were the following:

1. Cross-linguistic contamination between British Sign Language (BSL) and English. For example, the patient signs SOUL (spirit) and then points to the soles of her feet, making the nonsensical comment TWO FEET JUMP IN MY MOUTH.

2. Bizarre sign production errors such as finger-spelling or signing backward or using the wrong hand-shape or sign location.

3. Attending to the shapes of signs rather than to their meaning. This is equivalent to the phenomenon known as *clanging* in which words are linked based on their sound, not their meaning.

4. Switching abruptly from one topic to another especially when it is difficult to see any link between the topics.

5. Repeating the same sign or theme unnecessarily.

6. Visual-spatial behaviors unique to signers such as assigning different personalities to two hands and using different locations and time lines on the two sides of the body.

Thacker also looked at the sign errors made by deaf persons without psychiatric history or symptoms. For instance, non-mentally ill deaf persons also switched or dropped topics, repeated signs or themes, and even *clanged* or rhymed signs. The three kinds of errors she found that were only made in her deaf subjects were incoherence, visual-spatial anomalies, and paraphasias (incoherent arrangement of words or signs). Thacker reports that her comparison sample of non-mentally ill deaf persons were fluent users of BSL (Thacker, 1994). She does not describe what language dysfluency in deaf persons looks like when it is due to the most common reason deaf people have this problem: language deprivation.

### Language Dysfluency in “Traditionally Underserved” Deaf Persons

Because most deaf people grow up in hearing families and communities, they usually do not have the same easy acquisition of language as hearing people. The

only languages that deaf children can acquire naturally and effortlessly are sign languages. Deaf or hearing children raised by parents who sign fluently will, unless there is some gross learning or brain problem, sign fluently themselves. They will have native signing skills. Unfortunately, huge numbers of deaf children grow up without adequate exposure to the local sign language, and many deaf people never acquire native fluency in any language. Their language output, in their best language or communication modality, will exhibit language dysfluency related, not to a thought disorder, but to this language deprivation.

There is a subgroup of lower functioning deaf persons well known in the Deaf Community and by service providers who work with deaf people. Sometimes referred to as “low-functioning deaf,” this group has also been referred to as “severely disabled,” “underachieving,” “minimal language skilled,” “multiply handicapped,” and “traditionally underserved” (Dew, 1999). The last term, traditionally underserved, is the one most commonly used now as it is not pejorative and places the problem in the service community, not in the persons themselves.

A number of studies have examined the characteristics of this traditionally underserved group (Bowe, 2004; Dew, 1999; Duffy, 1999; Harmon, Carr, & Johnson, 1998; Long, 1993; Long, Long, & Ouellette, 1993; Mathay & LaFayette, 1990). Long et al. (1993) provides a useful definition based on responses to a survey conducted by the Northern Illinois University Research and Training Center on Traditionally Underserved Persons Who Are Deaf.

A traditionally underserved person who is deaf is a person who possesses **limited communication abilities** (i.e., cannot communicate effectively via speech, speech reading, sign language and whose English language skills are at or below the third grade level) **and** who possesses any or all of the following characteristics:

- Cannot maintain employment without transitional assistance or support;
- Demonstrates poor social/emotional skills (i.e., poor problem solving skills, difficulty establishing social support, poor emotional control,

impulsivity, low frustration tolerance, inappropriately aggressive);

- Cannot live independently without transitional assistance or support (emphasis maintained from original). (p. 109)

The distinguishing characteristic of this group is the poorly developed language skills that appear to be behind every other difficulty these persons face. The poorly developed language skills are also a key source of diagnostic confusion. Poor language skills per se do not usually bring someone to the attention of mental health providers, but because language can be a visible manifestation of thought, it is a domain that clinicians attend to closely. Gulati (2003) notes that “most Deaf people have firsthand knowledge of language deprivation, having seen it all around them. For many hearing people, however, and in the general psychiatric literature, the nature and severity of this condition is generally unrecognized.” (p. 62)

The problems that people born deaf typically have with English language production are readily apparent to any native user of English, and cautions about misinterpreting these as evidence of psychosis or mental retardation in deaf people have been made for decades. The far more difficult problem, which is only now getting deserved attention, is what conclusions to draw, in a clinical context, from impaired sign language production when “ASL is the best language the person has”<sup>3</sup>. Tackling this latter problem presupposed an exceptionally high level of sign language skill in the clinician or clinical team as well as an extensive knowledge of psychological and language development in deaf people.

Research by Black (Black, 2005; Black & Glickman, 2006) found that language dysfluency is not a inconsequential problem in the deaf psychiatric population. Black studied the characteristics of 64 deaf persons hospitalized on the Deaf Unit at Westborough State Hospital over a 5-year period. She focused on the communication assessments conducted by the Unit’s communication specialist and related his findings about language to other clinical issues such as diagnosis, intelligence, psychosocial functioning and risk of harm to self or others. Among her findings was that fully 75% of the patients on the Unit were

judged by the Deaf communication specialist to be language dysfluent in ASL. Black and Glickman (2006) also compared the diagnoses of these 64 deaf psychiatric inpatients served over a 5-year period with the diagnoses of 180 hearing patients in the hospital served at one moment in time (March 2006). They found striking differences in the diagnostic profiles. Psychotic disorders were diagnosed in 88.9% of the hearing patients in the hospital but only 28% of the deaf patients. They note that, “relative to the hearing patients, the deaf patients were much more likely to be diagnosed with a mood disorder (39% deaf vs. 8.8% hearing), an anxiety disorder (39.1% deaf vs. 8.8% hearing), a developmental disorder (25% deaf vs. 6.6% hearing), or a personality disorder (44% deaf vs. 21.6% hearing.”

Based on this research, there are good reasons to conclude that large numbers of deaf persons served in inpatient psychiatric settings do not have the psychotic disorders like schizophrenia that predominate among their hearing peers. Rather they are persons from this traditionally underserved group who exhibit language dysfluency along with developmental, behavioral, mood, and personality disorders. As many clinicians in the deafness mental health field have already noted (Denmark, 1994; Gulati, 2003; Pollard, 1998; Vernon & Daigle-King, 1999), they may look, to clinicians untrained in deafness, like persons with psychotic disorders, but this is fundamentally because their language skills and deficits are not properly understood.

The therapeutic challenge in evaluating and treating deaf psychiatric patients is therefore much more complicated than simply providing ASL translations. Beginning with the assessment process itself, clinicians are challenged to parse out much more carefully whether the language patterns of dysfluent patients reflect mental illness, language deprivation, or some neurological disorder. The conclusions that are drawn have great import for how patients are treated not just in the hospital but for the rest of their lives.<sup>4</sup>

### What Is a Thought Disorder?

*The Diagnostic and Statistical Manual of Mental Disorders, 4th edition (DSM-IV)* (American Psychiatric Association, 1994), the standard reference manual for

mental health professionals doing diagnostic assessment, discusses the term “psychotic” as follows:

The term psychotic has historically received a number of different definitions, none of which has achieved universal acceptance. The narrowest definition of psychotic is restricted to delusions or prominent hallucinations, with the hallucinations occurring in the absence of insight into their pathological nature. A slightly less restrictive definition would also include prominent hallucinations that the individual realizes are hallucinatory experiences. Broader still is a definition that also includes other positive symptoms of Schizophrenia (i.e., disorganized speech, grossly disorganized or catatonic behavior). Unlike these definitions based on symptoms, the definition used in earlier classifications (e.g., DSM-II and ICD-9) was probably far too inclusive and focused on the severity of functional impairment, so that a mental disorder was termed “psychotic” if it resulted in “impairment that grossly interferes with the capacity to meet ordinary demands of life.” Finally, the term has been defined conceptually as a loss of ego boundaries or a gross impairment in reality testing . . . (p. 273)

As most commonly understood, there are three components of psychosis or thought disorder. These are hallucinations, delusions, and disorganized thinking, language, and behavior. We will consider each in relation to the difficulty of diagnosing these in deaf persons with language dysfluency.

### Hallucinations

Can deaf people have auditory hallucinations? Can they “hear voices?” This question seems to intrigue hearing clinicians. Within the limited literature on the subject, there is near consensus that some deaf psychiatric patients report, or are observed, to have auditory hallucinations, although probably less commonly than with hearing psychiatric patients (Altshler, 1971; Evans & Elliott, 1987; Gulati, 2003; Kitson & Thacker, 2000; Pollard, 1998). Denmark (1994) argued that auditory hallucinations “would not be expected to occur in preverbally profoundly deaf schizophrenics” and that “visual and haptic (tactile) hallucinations are common”

(p. 62). However, there are many questions about which deaf psychiatric patients “hear voices” and what exactly they experience. There are also many concerns regarding how clinicians or interpreters translate the concept of “hearing voices” and how deaf psychiatric patients with language dysfluency, who may not understand the concept of hallucination, understand the question.

Most deaf people are not born deaf and hear some sounds. They may hear speech but be unable to understand it. It would not be so surprising to learn that these deaf psychiatric patients, who have had some experience of spoken language, can appreciate clearly the concept of auditory hallucination. Audiological assessment is not done as part of a psychiatric evaluation of deaf persons, and clinicians do not normally ask deaf persons what they actually can hear. On the Westborough State Hospital Deaf Unit, for instance, some deaf patients have reported auditory hallucinations and some have been observed communicating with apparent hallucinations. Both occurrences are highly uncommon, however, and even in these instances, staff do not normally enquire about degree of hearing loss. “Deaf” may be distinguished broadly from “hard of hearing,” but this is almost never done by actually measuring hearing loss. Feu and McKenna (1996, 1999), by contrast, present evidence that “profoundly deaf schizophrenic patients, who may never have experienced spoken language, report hearing voices to much the same extent as hearing patients. They also experience other auditory symptoms. Explanations in terms of misattribution of other symptoms or restriction of the symptom to those who were not prelingually deaf are insufficient to account for this phenomenon.”

Pollard (1998) questions whether the high reports of auditory hallucinations in deaf people result from the fact that this question is asked so often without questioning how the deaf patient understands the question. “The sheer frequency with which mental health professionals ask the question, ‘Do you hear voices?’ when evaluating patients (hearing or deaf), and the possibility that an affirmative answer might be spurious or even learned, could play a significant role in such situations. The voices question, unelaborated, is not recommended. Instead, more open-ended investigation of atypical perceptual and ideational experiences is preferred.” (pp. 178–179)

An enquiry into auditory hallucinations is a routine and expected part of a mental status examination, and psychiatrists will generally assume that their patient at least understands the question. This assumption should not be made with deaf psychiatric patients, especially those from the traditionally underserved group. Sometimes these people have been asked this question so often that they learn to respond “yes” without understanding the concept. This may reflect the “empty nod” problem, the fact that many deaf persons routinely answer “yes” to questions they do not understand so as not to appear ignorant. Sometimes the clinician, who is unfamiliar and uncomfortable with the communication dynamics, takes the “yes” answer at face value rather than probe into language and psychological domains they are unprepared for.

With some language-dysfluent, psychologically unsophisticated (Glickman, 2003) deaf patients, it may not be clear how they understand the question. Do they distinguish hallucinations clearly, for instance, from thinking, speech, dreaming, or environmental sounds? Do they understand that the clinician is referring to hearing voices when there is no “real” speaker? If they do not have the language skills, these distinctions are difficult to make.

There is no standard way to sign auditory hallucination in ASL. There is an English sign for hallucinate which is only useful if the patient knows that sign and concept. To convey the concept in ASL, the clinician or interpreter usually has to act out the process of hearing a voice that is not there. The person might sign VOICE or SPEAK and then use a classifier to show SPEAKING in the visual field. The person would also have to assume the role of someone having a hallucination, look here and there in response to this stimuli, perhaps sign NOTICE or indicate it with eye gaze, perhaps respond back to the unseen voice. The person might add the sign for IMAGINATION or note that there are PEOPLE NONE in the actual area. This might have to be acted out and described several times with the concept developed in interaction with the deaf patient. This sign interpretation of “hear voices” itself calls for considerable ASL skill. Less linguistically sophisticated clinicians or interpreters may simply sign HEAR VOICE or HALLUCINATE, an ambiguous and unclear idea that can easily be un-

derstood by the deaf person as a reference to their ability to hear speech. Indeed, asked in this unsophisticated manner, one can readily expect an answer such as “NO, ME DEAF.”

There are other reasons why the patients’ self-report of hallucinations alone should be taken skeptically. On the Westborough Deaf Unit, staff have seen patients report that they hear voices but provide no behavioral evidence of it. When people are hallucinating or “responding to internal stimuli,” there are usually behavioral signs. They seem distracted. Their eye gaze darts around. Sometimes they communicate back to the perceived voice. We have also had patients whose pathology consists in imitating the pathology of others. These patients report voices after seeing someone else do so. These same patients may, for instance, develop an “eating disorder” after observing a peer display this problem.

Some patients tell staff what they think staff want to hear and because of language and cultural differences develop confused perceptions of what they think staff expect from them. Sometimes the language output from hearing staff is as bizarre as any that might come from deaf patients. The worst example of this we have come across was that of a deaf psychotic woman that a colleague and I interviewed in a hearing psychiatric ward where no one signed well. She was observed signing to a staff person “YOU KILL ME” repeatedly, and the staff person, who did not understand her at all, nonetheless smiled brightly and nodded her head up and down in an apparent effort to show support. One trembles to imagine how the deaf patient made sense of this “insane” behavior from her staff. Her answers to questions raised during our clinical interview were very confused, but given her environment, who is to say what is *normal*?

The problem of how the deaf patient understands the questions being asked must be attended to with a diligence that most hearing nondeafness specialists are unaccustomed to. They usually have no reason to question whether the concept of hallucinations is understood, and they are used to interviewing at a pace that does not permit close attention to *the interviewers’* language. Skilled deafness interviewers know that close, careful attention must be given to how concepts are conveyed, especially with regard to phenomena,

such as auditory hallucinations, which may be unfamiliar and difficult to interpret. *This should be an important topic of discussion whenever clinicians untrained in deafness are working with sign language interpreters.*

Evans and Elliott (1987) note that deaf psychiatric patients may also confuse sounds associated with tinnitus (ringing in the ears) with hallucinations. They also believe that deaf people who report auditory hallucinations are most likely postlingually deafened. "In our experience, auditory hallucinations occur rarely in pre-lingually deaf persons; if they occur, they are more frequently found in persons who became deaf after language was established. Visual and haptic (tactile) hallucinations occur more often than auditory hallucinations in the mentally ill deaf patients we have seen." (p. 86)

What about visual hallucinations? Besides Evans and Elliott (1987), Critchley, Denmark, Warren, and Wilson (1981) present a study of 10 profoundly deaf schizophrenic patients who, they say, experienced visual hallucinations. However, their study is filled with caveats regarding their uncertainty about what role unclear communication may have played in the assessment. They add that, "as with other schizophrenic patients, it is not always possible to separate hallucinations from bizarre delusional experiences and this fact adds to our confusion." (p. 32)

The presumption made in this earlier literature that deaf patients with schizophrenia would be more inclined to experience visual hallucinations seems very unlikely given current understanding of the major causes of visual hallucinations. "Seeing signing" is not a phenomenological equivalent of "hearing voices." Visual hallucinations, when they occur, suggest organic brain pathology like dementia or substance use/withdrawal (Pelak & Liu, 2004). Without these kinds of problems, clinicians should look beyond self-report for behavioral evidence of visual hallucinations. Staff on the Westborough Unit had one instance in which they concluded that a patient was probably having visual hallucinations but they could not be sure. This deaf, language-dysfluent woman with schizoaffective disorder complained continuously about voices, was seen on a daily basis talking and signing back to unseen presences, was clearly distressed by this experience, and got better with a change in antipsychotic medication. The patient was prone to stopping

in the midst of some activity, turning abruptly to her side, signing and yelling SHUT-UP or FINISH. She would say she was talking to a family member. This patient could not explain or label her experience, but her behavior and report provided considerable evidence for hallucinations. Whether they were visual, auditory, or just "felt" was not clear.

The writer has been the Unit Director and psychologist on this Deaf psychiatric unit for, at the time of this writing, over 10 years and during this time has seen very few cases of unambiguous hallucinatory experiences of any sort in deaf patients. I agree that the phenomenon occurs, but more often than not I believe misjudgments are made by clinicians who do not attend sufficiently closely to the language dynamics. By contrast, unusual and bizarre beliefs, to be discussed shortly, are seen more commonly.

What should staff conclude when they observe patients signing to themselves and "laughing inappropriately?" It's customary for nursing and clinical staff to interpret this as "responding to internal stimuli" which is shorthand for psychosis. One assumes that in nondeaf settings, there would be few people who would challenge such inferences. Extra caution should be taken, however, in drawing this conclusion with deaf persons with extreme levels of language deprivation. A small number of the patients seen on the Deaf Unit were functionally nonverbal and relied upon visual-gestural communication and home signs. Two of these persons treated in recent years were frequently observed gesturing to themselves, smiling or laughing for no reason that staff could perceive. One of these patients had been, in fact, treated with Haldol, an older antipsychotic drug with unpleasant side effects, for many years, but after he was on the Deaf Unit for several months, staff concluded he was not psychotic. For such language-deprived and isolated people, how can we say whether "talking to oneself" is abnormal? From a human perspective, their life experience is so abnormal that it becomes impossible to determine what constitutes a sane response.

It is safest to evaluate conservatively, to look for multiple indicators of thought disorder. Gulati (2003) emphasizes this important point. "In diagnosing psychosis, it is safest to rely on unambiguous evidence such as religious delusion, spontaneous statements of

hallucinations, documented bizarre behavior, and the presence of ideas of reference, particularly in patients with non-fluent language. It is essential to assemble the broadest base of information and the assistance of collateral contacts . . .”(p. 72)

In summary, the question of whether deaf people have hallucinations must be broken down into more detailed questions as follows:

1. How are the concepts being conveyed into sign or gesture? How confident can the clinician be that the concept of auditory hallucinations is understood by the patient?

2. Might the deaf patient (especially the patient with language dysfluency) be answering yes to cover up a lack of understanding or because of confusion about what is being asked?

3. How does actual degree of hearing loss and onset of hearing loss relate to the ability to experience auditory hallucinations?

4. Might the patient be confusing tinnitus-related experiences with hallucinations?

5. What is the normal thinking experience for deaf persons with severe language dysfluency and communication isolation? If these people “talk to themselves,” what does this mean?

6. Is their evidence for auditory hallucinations beyond the patient signing or saying “yes” in response to the question? For instance, is preoccupation with internal stimuli observed?

7. How does the degree of experience that the clinician has with deaf people relate to the kind of diagnostic conclusions they make?

8. When deaf people actually report visual hallucinations of people signing, is this really a visual phenomenon or something else, more akin to day dreaming?

Mental health clinicians need to be more cautious in drawing conclusions about psychosis in deaf people than with hearing people. As Pollard noted above, one cannot take, at face value, a “yes” answer to the voices question. One needs a lot more information about the patient’s language abilities, intelligence, and conceptual world. In general, one would look for behavioral indicators of hallucinations, such as eyes darting away inappropriately or the person signing or speaking to an unseen presence, before drawing this conclusion.

## Delusions

Delusions are described in the *DSM-IV* as “erroneous beliefs that usually involve a misinterpretation of perceptions or experiences.” The most common delusions are persecutory or referential. In persecutory delusions, “the person believes he or she is being tormented, followed, tricked, spied on or subjected to ridicule.” In referential delusions, “the person believes that certain gestures, comments, passages from books, newspapers, song lyrics, or other environmental cues are specifically directed at him or her.” The *DSM-IV* acknowledges that “the distinction between a delusion and a strongly held idea is sometimes difficult to make and depends on the degree of conviction with which the belief is held despite clear contradictory evidence.” (p. 275) When deciding what is a delusion and what is a personal or cultural belief, clinicians are urged to consider culturally attributed meaning of phenomena. For example, the idea that one is “possessed by the devil” may be delusional in one context, normative in another.

Clinicians who work with deaf people understand now that the Deaf Community is a subcultural group with its own language and normative expectations. Culturally Deaf and hearing people would tend to hold different beliefs about some issues such as the meaning of deafness itself, and one hopes that even culturally insensitive hearing clinicians would not describe as delusional a deaf person who supports the cultural view of deafness. But consider what the reaction of hearing clinicians untrained in deafness might be to deaf people who espouse beliefs within a Deaf culture frame of reference, such as beliefs that deafness is good, speaking is unnecessary and oppressive, signing is preferable to speaking, hearing aids and cochlear implants are oppressive attempts to fix something that is not broken (or, more extreme, forms of cultural genocide), a deaf child is preferable over a hearing one, and hearing people have been victimizing deaf people for generations. These may be extreme reductions of complex issues, but many deaf people argue these points. To culturally hearing clinicians hearing these beliefs for the first time, they may seem, if not delusional, at least peculiar.

The danger of misdiagnosis is not mostly likely to occur when articulate deaf people espouse politically

unpopular views. It is more likely to occur with socially isolated, language-deprived deaf people with poor social skills and poor understanding of larger socially sanctioned shared meanings. For example, the Deaf Unit has treated persons arrested and charged, and sometimes convicted, of sexual crimes when they approached people in an “inappropriate way” asking for sex. Deaf people who communicate mainly through visual-gestural communication may be graphic in their solicitations of sex, and this can frighten hearing people who call the police for assistance. The socially isolated and unskilled deaf person is very vulnerable to having his or her intentions misunderstood and finding himself/herself in a psychiatric hospital or, worse, a jail after such incidents. When these deaf persons were hospitalized on the Deaf Unit, the “treatment” really consisted of the social skill education that they should have received at home and in school. It also consisted in educating players in the patient’s network about his or her language and social deficits and advocating for appropriate interventions.

Delusions that are considered “bizarre” are thought to be diagnostic of psychosis. The person who believes, for instance, that the FBI is sending messages to him through the television is, by definition, psychotic. Deaf Unit staff do see deaf persons with bizarre beliefs like this. One deaf patient believed that Osama bin Laden was sending him personal messages. Another believed so passionately that God was sending him on a mission to marry a particular person that he stalked and harassed her, leading to his arrest for this crime. In the hospital, he attributed his arrest and subsequent hospitalization to trials that God put before him to test his faith, like Job. He saw all the mental health people as essentially in league with the devil to foil his God-sanctioned marriage plan. Another patient saw special messages embedded in the captioning on the television. These persons, the staff felt confident concluding, were psychotic.

Much more common than bizarre delusions, in deaf and hearing people, are systematic mistakes in interpreting or judging reality so that patients attribute hostile intent when there is none. Deaf people are making these judgments, it must be remembered, in a context of not being able to determine what hearing people actually are saying. They also quite frequently

have a much poorer fund of worldly information, including common understandings of human psychology. The concept, for instance, of “point of view,” and the idea that we can disagree but both have reasonable opinions, may be alien. Staff often have to teach patients the idea that thoughts, feelings, and behaviors are different. The idea that one can feel angry without becoming aggressive may be entirely new to them and quite difficult to accept.

We know that nonverbal communication rules differ for culturally Deaf and culturally hearing people. Hearing staff need constant reminders that deaf patients are attending closely to their body language. But even patients who have a clear idea about Deaf culture may not necessarily understand the concept “cross-cultural conflict.” Given all these information and skill deficits as well as cross-cultural differences, it may be quite easy for a deaf person to misattribute a hearing person’s lack of eye contact, turning away from them, or facial grimace as evidence of hostility. Hearing people who do not appreciate the social and power differences between hearing and Deaf people and between staff and patients may be quick to draw conclusions about paranoia, but sometimes hearing people are talking about deaf people and not always with the deaf person’s best interests at heart.

The worst example I have seen of this was that of parents who hid antipsychotic medication in the food of their language-deprived deaf adult son. This son hated the medication and came to be suspicious of his mother’s cooking, hovering over her as she prepared his meal. Attributions that he was “paranoid” were included in the psychosocial information the Unit received, and he was, indeed, quite reluctant to take any medication and very difficult to reason with (his lack of language skills making this even worse). The deaf patient placed in an all hearing psychiatric context is not delusional for feeling unsafe because such environments do put deaf people at high risk for misdiagnosis, mistreatment, and interventions like restraint and seclusion (National Association of State Mental Health Program Directors Medical Directors Council, 2002). Even “high-functioning,” college educated, English-fluent deaf people can be victimized in these settings (DeVinney, 2003). The perceived “paranoia” of some deaf patients must always be

understood in the context that sometimes “they” do not understand you, are not sympathetic to you, and are inclined to interpret your behavior as pathology.

In a Deaf psychiatric treatment setting, where Deaf and hearing staff and patients interact each day, the opportunities for cross-cultural conflict are enormous. If the program is fortunate enough to employ articulate and thoughtful Deaf persons, then some of these differences may be exposed. For instance, a Deaf style of discourse is often described as “blunt,” but to hearing people this bluntness can appear harsh. When Deaf people are communicating with deaf persons with poor language skills, the need for clarity and bluntness is even stronger. For example, a deaf patient with poor language complains that she is not getting enough food, and the Deaf staff person points out that she is eating so much she is getting fat. The cultural naive hearing clinician reprimands the Deaf clinician for being insulting and then tries to correct the problem by meeting with the patient and “beating around the bush” about the patient’s weight problem. The Deaf staff person knows that the patient will not understand this subtle *hearing* discourse style, but does that mean that bluntness is always appropriate? What if the bluntness is insulting, as calling someone *fat* can be? An easy cross-cultural conflict for Deaf and hearing people to have is for the Deaf workers to argue that a blunt style is culturally appropriate and for the hearing workers to argue that insults, justified as bluntness, are never therapeutic. This argument can easily take the form of Deaf staff arguing they are oppressed by culturally insensitive hearing clinicians and hearing staff arguing that the Deaf staff are clinically unskilled. These subtleties also make cross-cultural supervision particularly complex.

It is very easy for hearing people to judge Deaf people as paranoid because, unless they have had a great deal of sensitivity training, hearing people do not see their own biases and do not perceive how their own behaviors may not be benign. Indeed, hearing people who work with “the deaf” often like to think of themselves as kind, giving people (Hoffmeister & Harvey, 1996) and can be shocked and astounded to discover that Deaf people do not perceive them that way. A deaf patient placed in a hearing psychiatric setting, or a deaf staff person working alone among

hearing peers, is vulnerable to being perceived as hostile merely for not appreciating sufficiently the efforts hearing people think they are making to accommodate the deaf person. If the deaf person assertively insists upon communication inclusion, this can become very threatening to hearing people especially when they realize that communication inclusion asks more of them than procuring an interpreter. Real communication inclusion will require hearing people to communicate differently. As with any minority–majority group dynamic, the power differences influence perceptions of reality; but it is generally the dominant group that defines reality, such as deciding who is paranoid.

Delusions are misperceptions and misinterpretations of social reality that are not corrected through reason. On the Westborough Deaf Unit, staff see patients who are clinically paranoid, who have delusions of reference or persecution, much more frequently than they see persons with bizarre delusions or unambiguous hallucinations. The symptoms are more commonly subtle than obvious. Patients rarely make the claim that “you are all trying to kill me!” They are more likely to conclude “you are mad at me” when staff are not or think that staff are having meetings to plan ways to trick or control them when staff intentions, from their perspective, are benign. Some patients isolate themselves in their rooms, avoiding therapeutic activities, and some are guarded and defensive when attempts are made to probe how they feel. One patient who was constantly losing or giving away her clothing was just as constantly accusing staff and other patients of stealing from her. Her belief that a peer was stealing her clothing actually lead her to attack the peer. If this happens repeatedly and if the patient cannot be reasoned with, a conclusion about paranoia is justified. In a Deaf treatment setting, where there are articulate Deaf clinical staff able to challenge hearing assumptions and biases, these conclusions are likely to be drawn more carefully. In hearing psychiatric settings, conclusions about paranoia flow easily from a culturally hearing perspective about deafness. Conclusions drawn without cross-cultural understanding are as dangerous in a Deaf–hearing context as they are in any other cross-cultural situation.

## Disorganized Thinking, Language, and Behavior

The most difficult symptom to evaluate in deaf patients with language deprivation is that of disorganized thinking and language. Psychiatrists judge the quality of patients' thinking based on their language output. Language dysfluency in deaf people can be related to language deprivation or thought disorder or both, and it can also be related to brain disorders such as aphasia (Poizner, Klima, & Bellugi, 1987), and as a field we are at very beginning stages of parsing out the differences.

The kind of thought disorder commonly found in persons with schizophrenia is well summarized by Torrey (2001) as "a frequent inability to sort, interpret and respond" (perceptual phenomena) (p. 42). He compares what happens in the brain of the person with schizophrenia to a switchboard operator who does not connect the right caller with the right receiver. There is a disconnection between what the individual perceives through any of the senses and how the person makes sense of these perceptions. The person can then not organize thoughts into an organized, logical sentence structure. Torrey gives this example of a sentence, written by a person with schizophrenia, showing disconnectedness and loose associations:

Write all kinds of black snakes looking like raw onion, high strung, deep down, long winded, all kinds of sizes. (p. 47)

This sentence shows language dysfluency, but it is not a sentence one would expect to see written or signed by a deaf person whose language dysfluency relates to language deprivation. The sentence, for all its illogic, is still grammatical. One would not think, hearing or reading this sentence, that the speaker does not know English, but rather that something is wrong in the person's mind.

There are other well-known kinds of language deprivation related to thought disorder seen in persons with schizophrenia. Some of these are the following.

1. Loose associations: there is only a marginal connection between one idea and the next.
2. Concreteness: an inability to appreciate abstract thought.
3. Impairment in logical, cause and effect reasoning.

4. Neologisms or made up words.
5. Clanging: making connects between words based on sound rather than meaning.
6. Thought blocking: the flow of the persons' thinking stops because they become stuck on a word or idea.

Because the psychotic person is not organizing and integrating their experiences well, there is often a disconnect between what they say and their emotions and emotional expression (their *affect*). The person may say he is happy but have a sad or anxious facial expression. Emotional expression may be minimal (*flat* or *blunted*) or rapidly changing (*labile*) and not seem to fit with the experience being described. When you interact with a person who is psychotic, you can have the experience that he/she is not "grounded" or "there" and therefore that his/her behavior is unpredictable. Deaf people who are severely language deprived live in a very different conceptual world, but they are not psychotic. For example, their ability to experience and express emotions and the quality of their human relatedness, their ability to form emotional bonds with other people, may be excellent.

To analyze the language patterns of deaf psychiatric patients better, we have been, with the appropriate permission, videotaping them and then analyzing their language output. Our intent is to study the kinds of language errors the patients made, just as Thacker (1994, 1998) did in her studies but with more attention to the differential diagnosis of language dysfluency related to thought disorder vs. language dysfluency related to language deprivation. Returning to Juanita, the patient presented at the start of this article, we found these kinds of language errors in her signing:

1. Vocabulary. Very limited (impoverished) vocabulary, with many signs used incorrectly. Juanita's vocabulary is largely limited to concrete objects and actions and descriptions she has experienced directly, but even here it is surprisingly limited. For instance, she knows the signs for only some of the food she herself eats. She knows the signs for FISH, MOTHER, BANANA (although she cannot distinguish it from a plantain) but not more abstract concepts like GOVERNMENT, VOTE, INDEPENDENT, INTERPRET, ASSESS or even such a common

sign as DECIDE. She uses the sign “IF” as a gesture to mean UMMM or I’M THINKING or I KNOW WHAT TO DO. She overgeneralizes the use of the sign SORRY saying it so often that it appears to be a learned response, like the “empty nod,” rather than an expression of regret.

2. Time. Juanita uses almost no time indicators. She does not know the days of the week or months of the year. She has memorized the year of her birth but she does not know how long ago that was. She does not understand YESTERDAY or TOMORROW or MONTH or YEAR reliably. To use a calendar with her, you point to today, indicate the sun going up and down or her sleeping and waking up, then gesture the number of times this happens, to help her see the immediate future or past. She certainly does not use ASL number incorporation like TWO-WEEKS-FROM-NOW or FIVE-YEARS. She does not establish tense and communicates mainly in the present tense. Sometimes she will use general signs for PAST and FUTURE, but she cannot break this down further. She will sometimes sign FINISH to indicate “all-done” or “all-over” but not to establish the past tense. Her stories have no sequential organization to them. She jumps back and forward in time without any logical reason and does not appear to understand she is doing that.

3. Spatial organization. Juanita does not make correct use of the visual field, organizing information spatially. In her story, she established the town of Framingham in one place but never referred to it again only to use the same spatial location to talk about Puerto Rico. She attempted to list family members on her fingers but repeated the same finger for different people, moved the people on to different fingers, skipped fingers and never referred back to anything she established. She can use very simple sign directionality (YOU-GIVE-ME, YOU LOOK-AT-ME) and she will “give the finger” to a person set up in space, but after establishing a person in space, she “drops” them. This is equivalent to the pronoun “he” disappearing from an English sentence. She does not use more complex spatial modifications like I-GIVE-TO-EACH or I-GIVE-TO-ALL. She has difficulty indicating plurality. She does not use space to indicate more than one. She does not sign, for in-

stance, 7 CHAIR or CHAIR 7 (seven chairs) or even use the sign for chair with a classifier marker to indicate many. If she indicates plurality at all, it would be by signing CHAIR repeatedly. She rarely uses a classifier. She can only count to 12 and cannot manipulate numbers.

4. Syntax. She does not use the ASL topic-comment structure. She does not establish subjects and then comment on them. She does not use pronouns or use any consistent subject-verb-object (I GIVE-YOU BOOK) or object-subject-verb (Book I-GIVE-YOU) structure. Because of the absence of time, space, and grammatical features, she cannot give an organized narrative or story. She is quite difficult to understand, even for fluent signers, until one gets to know her and learns her limited repertoire of topics. Juanita has a small number of concerns, which she repeats regularly.

5. She mixes sign with gesture and pantomime. For example, when talking about cutting up vegetables or dancing, she will act it out. Because she relies so heavily upon gesture or nonverbal communication, English translations are very approximate.

Overall, her communication appears to resemble a series of pictures presented in the present tense, organized loosely as a kind of collage. Her language is almost a stream of consciousness (i.e., Picture, Picture, Picture) with minimal organizing principles. While she incorporates sign in brief phrases or sentences, and even an occasional English word (e.g., fingerspells R-I-C-E), her language is almost completely devoid of grammar. In particular, her sign order (syntax) is confused and key grammatical features are missing. By inference, we assume her thinking is similarly unstructured.

Does this language problem represent a thought disorder? Is Juanita psychotic? Although Juanita’s narrative is confused, what’s most striking is the lack of formal grammar. Hearing persons who are psychotic can be very disorganized but they do not typically lack language markers such as tense or time vocabulary. Their sentences will usually contain subjects and verbs, if not other structures. Their vocabulary might be simple or extensive, depending mainly on what their vocabulary was like before they became sick.

A highly educated psychotic person is likely to still have a rich vocabulary. When you listen to a psychotic hearing English speaker, you do not imagine he/she does not know English. You recognize that his/her thinking is *off*. A fluent signer watching Juanita, by contrast, will immediately recognize that she is a poor user of sign language.

Can Juanita's language pattern be accounted for in another way? Might it stem from her cognitive limitations such as her mental retardation? Juanita has had cognitive testing numerous times, and the results have been reasonably consistent. She tests in the mildly to moderately mental retardation range using nonverbal intelligence tests. Her cognitive functioning is fairly uniform, suggesting global impairment (mental retardation) rather than specific learning disabilities. We know from cognitive testing that Juanita's brain has difficulty putting things in order by time or space. We know from looking at her sign language use that she has trouble telling a story sequentially and in manipulating the signing spatial field. This brain pathology likely contributes to her language difficulties. However, psychological assessment cannot tell us what caused her language problems, only that she has language and other cognitive problems.

Another important diagnostic clue is that Juanita's problem is *developmental*. She did not have better language skills and then lose them. This fact weighs against the conclusion that her thinking is caused by mental illness or an acquired aphasia. If we observed a dramatic decline in language functioning, this would certainly suggest a psychiatric or organic disorder.

Juanita's behaviors give us other diagnostic clues. Her emotional expression is appropriate. Her behaviors can be impulsive and dangerous but they are not bizarre. Indeed, even her disruptive behaviors are remarkably predictable after you get to know her. Most importantly, she appears to have a quality of "relatedness" with people. She forms friendships. She has appropriate relationships with staff. When you interact with her, you have a sense of a very simple or childlike person, but one who has a stable personality structure and behavior pattern. She does not "feel crazy."

The cognitive limitations as demonstrated by psychological assessment, the language problems as demonstrated by detailed linguistic analysis, the fact that

her problems are developmental, and the absence of disorganized behavior or inappropriate affect together lead to the conclusion that her language dysfluency is not likely to be due to mental illness. *To conclude that she is mentally ill, we need evidence besides her language difficulties, and the evidence is not there.*

#### Other Language Examples

Even though Julia has mental retardation, her language sample is fairly representative of what we see in patients we have come to conceptualize as "language dysfluent due to language deprivation." For example, here is a sample of language from another patient of near average intelligence.

Question: YOUR FAMILY. DEAF. HEARING. WHAT? EXPLAIN. (Tell me about your family? Are they hearing or deaf?)

Patient: HEARING, MY FATHER LIVE (wrong handshape for live) MY FATHER LIVE M-A-S-S. (points right) B-E-V-L-Y, NEAR BOSTON (points right) MOTHER LIVE LIVE MOTHER W-O-R-C-T-E-R W-O-R-C-T-E-R M-A-S-S (points right, same as before.) BROTHER BROTHER T-O-M- T-O-M LIVE, M-A-N-A-I-E-D FIELD NEAR P-A-T-R-I-O-T FOOTBALL FOOTBALL THROW-FOOTBALL (points right, same as before) S-T-A-D-I-U-M (points right again) THROW-FOOTBALL

So far this patient is not communicating well but he is understandable. He is using short sign phrases and sentences. He repeats signs unnecessarily, uses an incorrect handshape for a common sign (LIVE), uses signing space incorrectly (placing BOSTON and WORCESTER, which are at different parts of the state, in the same signing space, and then puts the stadium in the same place), and of course misspells the English names for two cities (which is a reflection of English language skills.) He does not give the English name for the football stadium in Foxboro, Massachusetts, but correctly identifies it as the place that the Patriot's team plays. When he signs, FOOTBALL FOOTBALL THROW-FOOTBALL S-T-A-D-I-U-M THROW-FOOTBALL, he is basically naming or identifying the stadium. His meaning

is clear even though his vocabulary is poor. The segment appears to represent ASL language deficits but not a thinking disorder. Shortly afterward, however, we find this language segment:

Question: YOU HERE HOSPITAL FOR-FOR?  
(Why are you here in this hospital?)

Patient: E-X-GIRLFRIEND CRISIS, LIKE S-E-P-H-I-C T-A-N-K, MOVE TRUCK, ROUND, LEAKING, FOSTER HOME CHURCH. I VOLUNTEER PROGRAM. (looks down at striped, colored koosh ball he is holding) GREEN. MERRY CHRISTMAS. HAPPY NEW YEAR. HOTEL WEDDING THINK MAYBE PARTY.

In this segment, he is unable to make himself understood, and staff have to probe to obtain a coherent story from him. It is not clear what he is talking about. Most notable is the “loose thinking.” He jumps from talking about his girlfriend and something that happened involving a septic tank and a truck to memories of foster home and church. He then gets distracted by the green stripe on the koosh ball and associates to Christmas, New Year, and a party at a hotel. This segment does not illustrate just impaired language. It also illustrates tangential thinking and loose associations. It is suggestive of psychosis, though one needs additional data before drawing conclusions.

In another interview (not videotaped), the interviewer showed the patient a series of pictures that showed a person putting laundry into a washing machine and the machine overflowing with sudsy water. The pictures occur in a sequence representing a simple story, and the patient was asked to tell the story. The patient began by describing/miming clothing being put in a washer, and then she switched to an apparent dialogue between a parent and a child. The parent scolds, FIGHT. STOP. FIGHT. The child responds, I-LIKE ICE-CREAM. This is a tangential association from the pictures. Describing the picture of the washing machine overflowing, she laughed and signed OVERFLOW, NOT PAY-ATTENTION. OVERFLOW. At another point, shown a picture of a man sitting in a chair reading a newspaper, she signed RELAX WAIT TIME 30 MINUTES. In both sentences,

the subject or topic is missing. Grammatically correct sentences would be *WATER SOAP MIX OVERFLOW. MAN NOT PAY-ATTENTION* and *MAN RELAX WAIT TIME 30 MINUTES*. Also, in the best ASL, the 30 Minutes would have started the sentence.

Beyond the language behavior, however, the patient demonstrated some significant nonverbal behaviors. She was highly distractible and used some nonsensical comments. For instance, at one point she looked past the interviewer to the electric socket on the wall behind him, pointed at it, and appeared to be miming getting an electrical shock. She looked away frequently and her eyes darted around wildly. At one point, she glanced at her stomach, pulled up her shirt to show her stomach, and signed “BABY,” then a classifier handshape that may have meant umbilical cord, then “MOTHER FATHER” while looking very frightened. Her affect was exaggerated and grossly inappropriate for either a deaf or a hearing person. At an earlier point, asked how she feels, she signed HAPPY MUCH, but her facial expression was one of sadness.

There is evidence here of language dysfluency related to both deprivation and psychosis though the overall presentation makes the psychosis more salient. We see evidence of thought disorder in her inappropriate affect, tangential comments, extremely high distractibility, and nonsensical and bizarre comments. Language deprivation is seen in her impoverished vocabulary, short and simple sentence fragments, and lack of pronouns. Her signing was also mixed with gesture and pantomime, something that deaf language-deprived people frequently display.

In the next example, a deaf patient signs the story of a relay race he observed. There are four players on the team. They run around a track and pass a baton to each other. Finally, one crosses the finish line.

He begins by gesturing *passing baton* and fingerspells R-E-Y, apparently intending *relay*. He then signs 4, 4 PLAYER (indicated with left index finger pointing to floor on right thigh; right hand U-handshape fingertips to floor diagonally and forward of the right knee) PLAYER PLAYER (signing “AGENT” touching his own body). He gestures again *passing baton*. He signs PLAYER 4, points in spatial locations, but creates a visually confused picture.

He signs 4, then uses the right closed 5 handshape, drops it down as if gesturing “GO”, changes to the right index finger and pulls it into an X handshape as if gesturing a gun going off, then, using the G handshape, signs ZOOM and mouths *pow* two times to indicate the gun going off. He is showing the starting gun going off. He then uses a five-clawed handshape, fingertips to floor, as in MARCH, (wrong handshape and palm orientation) to represent the classifier of runners moving around the track. He then uses two C-handshapes to create a pipe (baton) and then gestures a runner handing it off to another runner. However, his hands get tangled up as he strives to gesture the baton passing. He cannot quite represent it on himself. Finally, he signs, COMPETE COMPETE COMPETE DON’T KNOW. He signs LINE at his own chest and then leans forward to show a runner breaking through a finish line. He signs WIN, then SEE AGAIN SEE AGAIN, and an additional gesture/sign that is not clear. He mouths *over*.

This depiction of a relay race is organized and logical. However, it is poorly told. There are a very limited number of signs actually used. He uses PLAYER when he means RUNNER. Classifier handshapes are used incorrectly. He relies mainly on gesturing, embedded in a story with some signs, but even his gesturing is awkward. He does not really show what passing the baton from one runner to another would look like. He attempts to use the spatial field of the signer, but his placement of the runners is visually confusing. There are no real sentences. The viewer can guess his meaning based on pieces of information. He is not using facial grammar. His body movement is used inconsistently and unclearly to indicate shifting characters.

All these reflect language impoverishment. There is nothing crazy or illogical in his depiction of the story, but he lacks the vocabulary and language structure to articulate it.

Another patient was a 30-year-old deaf male, also from a third world county, who, as far as staff knew, had no formal education. He communicated with family members using a combination of home sign and gesture. The Unit’s best Deaf communicators could not easily understand him. His brother communicated with him better than anyone, using the same home

signs and gestures, but even there the communication was imprecise. We videotaped him telling a story. His communication is almost entirely mime and gesture.

Staff: NAME YOU WHAT? (What is your name?)

Patient: (Name sign T on forehead) T-O-M-A-S.

Staff: WORK BEFORE YOU? (Have you worked?)

Patient: GHANA FLY FLY ME (*Puts on leg braces starting at the foot up to the hip.*) WORK GHANA (*putting on and strapping leg braces foot to hip and adjusting the straps, tightening and cinching at the waste and shoulder harness.*) CRUTCHES (*making crutches step by step process in intricate detail.*) CRUTCHES WORK WORK FINE WORK CRUTCHES ME SMART (*making the handles, screwing on wing nuts by hand, adjusting, measuring the length, hand screwing*) ME THUMBS-UP GOOD WORK SMART HOSPITAL (*unconventional sign G handshape making shape of the Cross on upper left arm*) (*putting on and strapping leg braces, foot to hip and adjusting the straps, tightening and cinching at the waist and shoulder harness, using cane to walk*) LEARN (*throws cane away*)

This mostly mimed sequence is logical and organized. The patient is recounting the story of making crutches. He shows how they were made in detail. He repeats himself and adds comments like ME SMART (i.e., I know how to do it). While his signing skills are very poor, his visual-gestural communication skills are excellent. This presentation does not suggest psychosis.

On the unit, this man was frequently seen “talking to himself.” He sat at the window, gesturing and mumbling to himself, and other deaf people could not understand him. A psychiatrist (new to deafness) who walked by, saw the patient communicating to himself, could be forgiven for interpreting this behavior to be evidence of psychosis. But is talking to yourself normal for a deaf person who grew up without a formal language system and without the experience of linguistic communication with people outside his immediate family? We do not know. How can we judge what is normal for a person with a life experience that is so abnormal? We certainly do not have enough data to

be confident about such an inference. Our conclusion has to be that there is not enough here to suggest psychosis. We need more data before drawing such a conclusion.

#### Language Dysfluency: Language Deprivation vs. Thought Disorder

Our knowledge of differential diagnostic assessment between language dysfluency caused by mental illness and language dysfluency caused by language deprivation in deaf people is still rudimentary, but we can advance this knowledge by first recognizing the issue. Observation and study conducted with deaf inpatients at the Deaf Unit at Westborough State Hospital and review of prior literature, especially the important contributions by Thacker (1994, 1998), suggest some guidelines.

The language skills of deaf persons who are language dysfluent related to language deprivation will vary enormously. The most severely language deprived will communicate with visual–gestural systems, including home signs, and no formal language at all. At the other extreme will be deaf persons with a great deal of sign vocabulary and some grammatical features. The language deficits seen will reflect inadequate learning. Vocabulary is poor with sign and sign features formed incorrectly or used with the wrong meaning. Basic elements of clear communication, such as the topic–comment structure, or the presence of clear referents (who did what to whom), or time vocabulary and indicators, may be missing or used inconsistently and incorrectly. In the absence of grammar, signs may be repeated unnecessarily. Isolated signs or short sign phrases will be present rather than full sentences. Even the correct grammatical use of the signing spatial field, which one might suppose would be natural to deaf persons, is likely to be impaired. The person may act out scenes, like the patients described above acting out the process of passing a baton in a relay race or constructing crutches, but this is not the same as using the grammatical features of ASL to construct a story in the visual field.

We have also observed a number of language-dysfluent persons refer to themselves in the third person. They will say, for instance, JOE ANGRY rather than ME ANGRY.

A deaf person who is a native, competent user of ASL and who is language dysfluent because of a thought disorder will not make these types of language errors. Although language skills that deteriorate markedly from a previous level are important clues of possible thought disorder, psychotic persons do not lose their native language. Rather, they may make loose or bizarre connections between one idea and another. Their ability to attend to and follow through on a task may suffer, and they can become easily distracted. They may get caught up with the structural qualities of signs (such as handshapes or sign locations) rather than the meaning of signs (i.e., clanging). Most likely, along with language dysfluency, one will observe a disconnection between thought, emotion, and behavior that one would not expect to see in deaf persons with language deprivation only.

The real diagnostic dilemmas will occur, of course, with deaf persons who are language deprived and may also have a thought disorder. Some symptoms such as concreteness and poverty of content are clearly related to both causes. A neologism or made up word may be easy to confuse with a home sign that only a few persons understand. Impoverished vocabulary may look a lot like thought blocking. Inappropriate dress and behaviors may be related to inadequate development of social and personal care skills as well as mental illness. Behavioral problems frequently occur in both conditions. Eye contact behavior is highly dependent upon cultural and personal experience. It is very difficult to enter the conceptual world of a person with severe language skills and to begin to imagine what is normal and healthy for someone with such an abnormal life experience. Behavior such as “talking to oneself” is ambiguous. It also requires an exceptionally high level of sign language skill to even break down the nature of the signing errors that are occurring.

Loose and tangential associations are harder to categorize. Both language deprivation and mental illness can prevent a person from telling an organized story, giving a clear account of who did what to whom over time. Generally, the “looser” and more bizarre the connection between ideas, the more this suggests a thought disorder. Recall the deaf patient, presented earlier, who gave a coherent and organized account, in mostly visual–gestural communication, of how he built

leg crutches. His “language” had almost no formal grammar, but his account was organized and sequential, and his affect and interpersonal relatedness was normal. By contrast, the deaf patient who jumped from talking about pictures being displayed to miming getting a shock from the electronic wall socket to showing her stomach and conveying something about an umbilical cord and a baby, all the while with poor eye contact and very strange facial expressions, was clearly psychotic.

We have also seen that clinicians should be slow to make inferences about hallucinations and delusions, especially when they are not directly observed or are nonbizarre. There are so many potential problems in translation between languages and conceptual worlds that great humbleness is called for in the clinician.

With all these difficulties, there are still clues that point the diagnosis toward thought disorder rather than language deprivation. Some of these are as follows.

1. Inappropriate (for Deaf Culture) facial and emotional expression.

2. Language content that is not merely off the point but actually bizarre. As noted above, the looser the connection between thoughts, the more this suggests a thought disorder.

3. Nonverbal behaviors suggesting hallucinations (eyes darting, preoccupation with phenomena unseen to the clinician).

4. Guardedness, suspiciousness, and volatility. Clinicians communicating with psychotic persons often feel that the person may explode any moment. There is a sense that they “are not there.” One does not usually experience this with language-dysfluent, nonpsychotic persons.

5. In language-deprived persons, the language problems have been long standing. There was not a point when the person communicated better than now. In thought-disordered mentally ill person, there is usually a worsening of communication skills from a previous baseline.

6. The personal appearance and behavior of psychotic persons are often striking and abnormal for their cultural context. Self-care is often poor. The person may wear clothing inappropriate for the

weather. There is no reason I can think of why a language-dysfluent person who is nonpsychotic would wear winter clothing in the summer, dress only in black, or refuse to take off heavy boots when going to sleep at night. These are behaviors we observed in a deaf man with schizophrenia.

7. In most cases, when a patient’s language is disorganized due to psychosis, the language will improve as psychiatric medication clears up the thought disorder. When the language is disorganized due to language deprivation, medication will not correct the problem.

#### Conclusions: Look for Redundancy in Evidence

Mental status assessment of deaf persons is more complex than that of hearing persons. One reason is because many Deaf people have ASL as a first language and are nonfluent in the spoken language of their hearing community. They are language minorities as well as cultural minorities, and culturally informed assessments need to occur (Glickman & Gulati, 2003; Glickman & Harvey, 1996). In recent years, this fact is receiving more widespread recognition. Another complication that is rarely recognized by nondeafness mental health specialists is that many deaf persons have experienced severe language deprivation. Language dysfluency is the core characteristic in the large group of deaf persons most commonly referred to as traditionally underserved deaf, and these persons are highly likely to be referred to any specialized educational, rehabilitation, or mental health service for deaf persons (Dew, 1999; Long, 1993; Long et al., 1993). In these settings, someone will inevitably be asked to provide a clinical assessment, and this person will come face to face with the diagnostic dilemmas associated with language dysfluency. As we saw, it is exceptionally easy for competent mental health clinicians without extensive training in deafness to assume that language dysfluency is due to a thought disorder.

The opportunities for misjudgments about deaf patients are many. They include misunderstandings related to conveying the concept of hallucination, culturally naive and biased determinations about apparent delusions such as paranoia, and failure to recognize and evaluate carefully for the possibility of language

deprivation. For clinicians with no knowledge of ASL, additional sources of error are embedded in the issue of whether the interpreter is skilled in mental health interpreting and whether the interpreter and clinician know how to collaborate on this task (Karlin, 2003; Stansfield, 1981; Veltri & Stansfield, 1986). Because the likelihood of diagnostic error is so great, it is recommended that clinicians be conservative in their evaluations. That is, clinicians should hesitate to draw conclusions about psychosis unless the data are unambiguous (e.g., a bizarre delusion, a readily observable hallucination) or there are multiple indicators of psychosis (Gulati, 2003). Clinicians should be especially careful not to draw conclusions based solely on the patients' language. Gross (and in this day and age unforgivable) errors occur when basing these judgments upon the spoken or written language of the deaf patient, but the same care needs to be applied when analyzing the quality of the patients' signing. When an interpreter is being used, clinicians should discuss with the interpreter how the interview questions are being translated and the kind of language output the patient is producing. Interpreters cannot diagnose thought disorders, but they should be able to discuss with the clinician the nature of the patients' communication skills.<sup>5</sup>

On the Westborough Deaf Unit, the majority of patients are language dysfluent (Black, 2005; Black & Glickman, 2006). As people without intact full language, they often develop behavioral problems or, as mental health clinicians say, behavioral *disorders*. These *traditionally underserved deaf* persons are highly likely to make up a significant portion of the clientele served by identified deafness mental health and rehabilitation programs, and they are highly likely to present the greatest clinical challenges. Treatment models in which an interpreter is placed in a hearing treatment center will most likely fail with such clients, and the staff, unfamiliar with this kind of language dysfluency, will not understand why (Glickman, 2003).

For decades now, Deaf people and their advocates have fought for the recognition of ASL and genuine communication inclusion of signing Deaf people. Although this battle is far from won, we have an even greater challenge, which is to find ways of educating and serving signing deaf people who are not fluent

users of any language. On the Westborough Deaf Unit, staff see everyday the terrible implications of growing up deaf without full access to natural sign languages like ASL. When these patients are referred for psychiatric crises or severe mental illness, their problems will be confounded by the implications of this language deprivation. This paper addressed some of the implications for assessment, but the implications for treatment and for preventing the problem are just as compelling.

## Notes

1. All the patients presented in this paper have had their names and details from their histories changed to protect confidentiality.

2. Her signing and gesturing is transcribed as literally as we can though the transliteration into written English is itself very difficult and problematic because ASL lacks a written form and Juanita is not communicating in clear, standard ASL. Conventions used: *Italics* indicate mime or gestural communication. CAPITAL LETTERS indicate signs. W-O-R-D indicates fingerspelling. ? indicates viewers' guess of what she means.

3. Technically speaking, the language-deprived deaf person does not have intact language. Therefore, it is misleading to speak of ASL as their best language. This person has no full language. On the other hand, these persons' signing skills are usually vastly better than their English language skills. We want to judge their language abilities based on the language they are closest to using well and not repeat the mistake of drawing conclusions from a second language, such as English, where their skills can be even more impoverished.

4. This clinical problem is complicated enough, but one also must acknowledge that there have been *political* barriers to addressing this issue well. For the past 30 years, the political need to validate ASL as a language guided socially aware clinicians and teachers in the deafness field. Along with Deaf people themselves, deafness professionals have rejected the mistaken belief that ASL is a substandard communication system, a kind of elaborate gesture, or a simplification of English. In the social and political context in which professionals have needed to affirm ASL and Deaf Culture, it has been difficult to recognize that many deaf people are not, in fact, fluent users of ASL, that they are language impaired or *language dysfluent* in their best language, ASL. Further complicating the difficulty of making such judgments is that so few hearing clinicians are truly fluent in ASL. Most hearing people in the deafness field communicate in more English-like variants of sign, and this is also true of many deaf clinicians working at the Masters and Doctoral levels. For non-ASL fluent signers, especially if they are hearing, to make judgments about language dysfluency in deaf people looks a great deal like the old prejudicial judgments about deaf people not having a language or having "poor language." It echoes the

oppressive dynamic in which hearing people, who were poor communicators in sign, made negative judgments about the poor “language” skills of deaf people. After all, it is fair to say that these hearing signers are also language dysfluent in ASL. Their problems, however, are those of persons trying to master second languages, not those of persons without mastery of the first.

5. See Karlin (2003), Pollard (1998), Stansfield (1981), and Veltri and Stansfield (1986) for more on this. Discussions with interpreters about the patients’ communication abilities should always occur in private, not with the patient present.

## References

- Altshler, K. (1971). Studies of the deaf: Relevance to psychiatric theory. *American Journal of Psychiatry*, *127*, 1521–1526.
- American Psychiatric Association. (1994). *Diagnostic and statistical manual of mental disorders* (4th ed.). Washington, DC: Author.
- Black, P. (2005). *Language dysfluency in the deaf inpatient population*. Unpublished doctoral dissertation, Fielding University, Santa Barbara, CA.
- Black, P., & Glickman, N. (2006). Demographics, psychiatric diagnoses, and other characteristics of North American deaf and hard-of-hearing inpatients. *Journal of Deaf Studies and Deaf Education*, *11*, 303–321.
- Bowe, F. G. (2004). Economics and adults identified as low-functioning deaf. *Journal of Disability Policy Studies*, *15*, 43–49.
- Critchley, E. M. R., Denmark, J., Warren, F., & Wilson, K. (1981). Hallucinatory experiences of prelingually profoundly deaf schizophrenics. *British Journal of Psychiatry*, *138*, 30–32.
- Denmark, J. (1994). *Deafness and mental health*. London: Jessica Kingsley.
- DeVinney, J. (2003). My story. In N. Glickman & S. Gulati (Eds.), *Mental health care of deaf people: A culturally affirmative model* (pp. xxi–xxxvi). Mahwah, NJ: Lawrence Erlbaum Associates.
- Dew, D. W. E. (1999). *Serving individuals who are low-functioning deaf* (IRI-25B). Washington, DC: The George Washington University Regional Rehabilitation Continuing Education Program.
- Duffy, K. (1999). Clinical case management with traditionally underserved deaf adults. In I. W. Leigh (Ed.), *Psychotherapy with deaf clients from diverse groups* (pp. 329–348). Washington, DC: Gallaudet University Press.
- Evans, J. W., & Elliott, H. (1981). Screening criteria for the diagnosis of schizophrenia in deaf patients. *Archives of General Psychiatry*, *38*, 787–790.
- Evans, J. W., & Elliott, H. (1987). The mental status examination. In H. Elliott, L. Glass, & J. W. Evans (Eds.), *Mental health assessment of deaf clients: A practical manual* (pp. 83–92). Boston, MA: College Hill Press.
- Feu, M. D., & McKenna, P. J. (1996). Auditory hallucinations in profoundly deaf schizophrenic patients: A phenomenological analysis. *European Psychiatry*, *11*(Suppl. 4), 296–297.
- Feu, M. D., & McKenna, P. J. (1999). Prelingually profoundly deaf schizophrenic patients who hear voices: A phenomenological analysis. *Acta Psychiatrica Scandinavica*, *6*, 453–459.
- Glickman, N. (2003). Culturally affirmative inpatient treatment with psychologically unsophisticated deaf people. In N. Glickman & S. Gulati (Eds.), *Mental health care of deaf people: A culturally affirmative approach*. Mahwah, NJ: Lawrence Erlbaum Associates.
- Glickman, N., & Gulati, S. (2003). *Mental health care of deaf people: A culturally affirmative approach*. Mahwah, NJ: Lawrence Erlbaum Associates.
- Glickman, N., & Harvey, M. (Eds.). (1996). *Culturally affirmative psychotherapy with deaf persons*. Mahwah, NJ: Lawrence Erlbaum Associates.
- Gulati, S. (2003). Psychiatric care of culturally deaf people. In N. Glickman & S. Gulati (Eds.), *Mental health care of deaf people: A culturally affirmative approach* (pp. 33–107). Mahwah, NJ: Lawrence Erlbaum Associates.
- Harmon, M., Carr, N., & Johnson, T. (1998). Services to low functioning deaf and hard of hearing persons. In M. Kolvitz (Ed.), *Empowerment through partnerships: PEPNET '98* (pp. 290–300). Knoxville, TN: University of Tennessee, PEPNET.
- Hoffmeister, R., & Harvey, M. (1996). Is there a psychology of the hearing? In N. Glickman & M. Harvey (Eds.), *Culturally affirmative psychotherapy with deaf persons* (pp. 73–98). Mahwah, NJ: Lawrence Erlbaum Associates.
- Karlin, T. (2003). “Umm, the interpreter didn’t understand”: Interpreting for individuals with thought disorder. *Views*, *20*(4), 1–11.
- Kitson, N., & Thacker, A. (2000). Adult psychiatry. In P. Hindley & N. Kitson (Eds.), *Mental health and deafness* (pp. 75–98). London: Whurr.
- Long, N., Ouellette, S., Long, G., & Dolan, K. (1993). Service provision issues with traditionally underserved persons who are deaf. In O. M. Welch (Ed.), *Research and practice in deafness: Issues and questions in education, psychology and vocational service provision* (pp. 107–126). Springfield, IL: Charles C. Thomas.
- Long, N. (1993). Historical overview of services to traditionally underserved persons who are deaf. *American Rehabilitation*, (Winter).
- Mathay, G., & LaFayette, R. H. (1990). Low achieving deaf adults: An interview survey of service providers. *Journal of the American Deafness and Rehabilitation Association*, *24*, 23–32.
- National Association of State Mental Health Program Directors Medical Directors Council. (2002). *Reducing the use of seclusion and restraint. Part III, lessons from the deaf and hard of hearing communities*. Alexandria, VA: National Technical Assistance Center or State Mental Health Planning (NTAC).
- Pelak, V. B., & Liu, G. T. (2004). Visual hallucinations. *Current Treatment Options in Neurology*, *6*, 75–83.
- Poizner, H., Klima, E. S., & Bellugi, U. (1987). *What the hands reveal about the brain*. Cambridge, MA: MIT Press.

- Pollard, R. (1998). Psychopathology. In M. Marschark & M. D. Clark (Eds.), *Psychological perspectives on deafness* (pp. 171–197). Mahwah, NJ: Lawrence Erlbaum Associates.
- Stansfield, M. (1981). Psychological issues in mental health interpreting. *RID Journal*, 1, 18–31.
- Thacker, A. (1994). Formal communication disorder: Sign language in deaf people with schizophrenia. *British Journal of Psychiatry*, 165, 818–823.
- Thacker, A. (1998). *The manifestation of schizophrenic formal communication disorder in sign language*. Unpublished doctoral dissertation, St. George Hospital Medical School.
- Torrey, E. F. (2001). *Surviving schizophrenia*. New York: Quill.
- Veltri, D., & Stansfield, M. (1986). Assessment from the perspective of the sign language interpreter. In H. Elliott, L. Glass, & J. W. Evans (Eds.), *Mental health assessment of deaf clients: A practical manual* (pp. 153–163). Boston, MA: Little, Brown and Company.
- Vernon, M., & Daigle-King, B. (1999). Historical overview of inpatient care of mental patients who are deaf. *American Annals of the Deaf*, 144, 51–60.

Received February 23, 2006; revisions received November 11, 2006; accepted January 5, 2007.