

## The Root of the Problem: Anosognosia (Ā-nō'sog-nō'sê-ā)

*"This is not surprising, since the brain, the same organ we use to think about ourselves and assess our needs, is the same organ that is affected in schizophrenia and bipolar disorder."*

E. Fuller Torrey, commenting on the high prevalence of poor insight in persons with serious mental illness. (*Schizophrenia and Manic Depressive Disorder*, 1996, page 27)

Sitting around the table with me were two nurses, a therapy aid, a social worker, and a psychiatrist. We were in the middle of our weekly clinical team meeting, discussing whether or not we thought Matt was well enough to be discharged from the hospital.

"His symptoms have vastly improved," began Maria, his primary nurse. "The hallucinations have responded to the medication; he's calmer and no longer paranoid."

"Both his mother and father are ready to have him come home again," added Cynthia, Matt's social worker, "and Dr. Remmers has agreed to see him as an outpatient."

"Sounds like we've got all our ducks lined up in a row," the team leader, Dr. Preston, said, capping the discussion and scribbling a note in Matt's medical chart.

"Only one thing troubles me," Cynthia interjected hesitantly. "I don't think he's going to follow through with the treatment plan. He still doesn't think there's anything wrong with him."

"He's taking his medication," I observed.

"For now. But he's really stubborn and so defensive. I don't think that will last more than a week or two after he hits the sidewalk." I had to agree with Cynthia's prediction, but I didn't share her view as to *why* he wouldn't take his medication on the outside.

"What makes you say he's defensive?" I couldn't help asking.

Nearly everyone around the table burst out laughing, thinking I was being facetious.

"No, really. I'm serious."

The resident assigned to the case, Dr. Brian Greene, jumped into the discussion. "Well, he doesn't think there's anything wrong with him. As far as Matt's concerned the only reason he's here is because his mother forced him into it. The man is full of pride and just plain stubborn. Don't get me wrong, I like him, but I don't think there's anything else we can do for him as long as he's in denial. No one's going to convince him that he's sick.

He's just going to have to learn the lesson the hard way. He'll be back before he knows what hit him."

Dr. Preston, recognizing that Matt's discharge was a forgone conclusion, ended the discussion saying, "You're probably right about that and about the fact that there's nothing more we can offer him here. When he's ready to stop denying his problems, we can help. Until then, our hands are tied. Brian, you're meeting with Matt and his parents at three o'clock to go over the plan. Any questions?" After a moment's silence Matt's medical chart was passed around the table for each of us to sign off on the discharge plan.

***"All I need to do is get a job; there's nothing wrong with me."***

During the first few years of my brother's illness, before I went to graduate school to become a clinical psychologist, I often thought he was being immature and stubborn. Asked about what his plans were after being discharged from yet another hospitalization, he ritually answered, "All I need to do is get a job; there's nothing wrong with me." His other stock answer was, "I am going to get married." Both desires were natural and understandable, but unrealistic given his recent history, the severity of the illness, and his refusal to accept treatment. Someday perhaps he would realize his desires, but it was very unlikely unless he was actively involved in the treatment recommended by his doctors.

It was exasperating talking to him about why he wasn't taking his medication. Having limited experience with the illness, the only reason for his adamant refusal that I could think of was that he was being stubborn, defensive, and, to be frank, a pain in the rear. I was lucky that I thought of my brother only as being stubborn. Because, like many children of people with serious mental illness, Anna-Lisa often wondered if her mother didn't love her enough to want to get better. It took her mother's suicide to educate Anna-Lisa about what was really happening. And, for myself, it was only after I started working in the field and had met many more people with serious mental illness that I stopped giving such theories much credence. It just never made sense to me that the pervasive unawareness and odd explanations given by people like Matt and my brother could be explained simply as having an immature personality or a lack of love. But you don't have to take my word for it. Let's look at the research for a more objective answer to the question of what causes poor insight and refusal to accept treatment.

### **Research on the Causes of Poor Insight**

I have considered three different causes of poor insight in the seriously mentally ill. It could stem from defensiveness. After all, it makes sense that someone who is seriously ill

would be in denial about all the potential and promise for the future that had been taken by the disease. On the other hand, perhaps it's simply the result of cultural or educational differences between the mentally ill person and the people who are trying to help him. Often, differences in subculture and values are blamed. For example, Anna-Lisa always believed that her mother's poor insight wasn't denial so much as a preference for the interesting and fantastic world her illness provided her. When she was symptomatic, the world was a magical place filled with adventures to be had and mysteries to explore. Anna-Lisa never wanted to question her mother's delusions because she feared that by talking about them, she might take them away and somehow cause her mother even more pain. And finally, the third cause I have considered is that poor insight into illness stems from the same brain dysfunction that is responsible for other symptoms of the disorder.

Historically, psychoanalytic theories predominated to explain poor insight in schizophrenia. Although the literature is rich with numerous case studies suggesting that poor insight stems from defensive denial, the question had never been tested in controlled studies until recently.

***Everyday defensiveness is not responsible for the gross deficits in insight that are so common in these patients.***

Two of my doctoral students, Chrysoula Kasapis and Elizabeth Nelson, took different approaches to this question in their thesis research. Dr. Kasapis examined the overall level of defensiveness in the patients she studied while Dr. Nelson looked at the issue of stigma. Neither approach to the question found anything of significance. Highly defensive patients were generally no more likely to have poor insight than those with little or no defensiveness. Similarly, how stigmatizing patients perceived their symptoms to be had little effect on how much insight they had into their illness. Everyone gets defensive from time to time and some are more prone to denial than others. The same holds true for people with serious mental illness. However, everyday defensiveness is not responsible for the gross deficits in insight that are so common in these patients.

Cultural differences between the examiner and patient may also play a role at times in mislabeling someone as having poor insight. In other words, the patient may be well aware of most if not all aspects of his mental illness, but his sub-culture might label it something else. Consequently, he would not use the label "mental illness" to describe himself. Instead he might say, "I have a nervous problem," or, in the case of religious beliefs such as those common to some Caribbean countries, "I am possessed by evil spirits." The sub-culture of the afflicted person needs to be addressed in any study of insight.

*It's ironic, but many patients with poor insight into their own illness are excellent at diagnosing the same illness in others!*

Related to the issue of cultural influences is the question of patient education. Has the patient ever been told that he or she has an illness? If so, has he or she been taught how to identify and label symptoms of the disorder? In my experience, most patients with poor insight have been told about the illness they have, yet either claim they haven't been told or, if they recall being told, adamantly disagree, claiming that their knowledge is superior to that of the doctors making the diagnosis. It's ironic, but many patients with poor insight into their own illness are excellent at diagnosing the same illness in others!

The answer to the question of whether half of all people with serious mental illness don't know they are ill because they have no information about the illness is actually obvious when you step back for a moment. If you had heartburn that was bad enough for a friend or relative to convince you to see your family doctor, who then diagnosed the problem as heart disease and explained that the pain was angina, you would stop referring to the pain as heartburn and start calling it angina. You would then make an appointment with a cardiologist and cancel your next appointment with the gastroenterologist. Why, then, do so many people with schizophrenia and bipolar disorder fail to do this? Why do they persist in calling their pain "heartburn" despite all evidence to the contrary?

### **A Concept of Self that is Stranded in Time**

In our paper published in 1991, my colleagues and I proposed that poor insight in people with serious mental disorders is a consequence of, to coin a phrase, a broken brain. We came to believe that pervasive lack insight and the accompanying illogical ideas offered to explain being hospitalized stemmed from neurological deficits. At that time we hadn't yet considered a neurological hypothesis to explain poor insight in bipolar disorder, but we felt there was good reason to believe that what we were seeing in patients with schizophrenia was indeed a consequence of brain dysfunction rather than stubbornness, defensiveness, or ignorance about mental illness in general. The fact is that the brain circuitry responsible for recording and updating self-concept is not working properly in such patients.

My self-concept includes, among other things, the following beliefs about my abilities: I can hold down a job; if I went back to school, I believe I would be a competent student; I believe I have the education and experience to be a therapist, and I am generally socially appropriate when I interact with others. What are some of the beliefs you hold

about yourself and your abilities? Do you believe that you can hold down a job? What if I told you that you were wrong, that you were incapable of working and might never find employment unless you swallowed some pills I had for you. And, by the way, you would have to take those pills for a very long time, possibly for the rest of your life. What would you say to that? Probably the same thing my brother once said to me when I told him he would never hold down a job again unless he took his medication faithfully: “You’re out of your mind!” If I said that to you, you would likely think I was joking, and after I convinced you that I was dead serious, you’d come to believe I was crazy. After all, you know you can work; it’s an obvious fact to you. If I involved other people, including relatives and doctors, you might start to feel persecuted and frightened. That is exactly the experience of many people with serious mental illness whom I have interviewed. Their neuropsychological deficits have left their concept of self, their beliefs about what they can and cannot do, literally stranded in time. They believe they have all the same abilities and the same prospects they enjoyed prior to the onset of the illness. That’s why we hear such unrealistic plans for the future from our loved ones.

### **If a Man Can Mistake his Wife for a Hat...**

If you have never talked to someone who has suffered a stroke, brain tumor, or head injury, what I have just said might seem difficult to believe. If so, I recommend that you read *The Man who Mistook his Wife for a Hat*, by the neurologist Oliver Sacks, who is also the author of the book upon which the movie, “Awakenings” Was based. Dr. Sacks has the gift of being able to describe in vivid detail the inner life of people who have suffered brain damage.

Writing about one case, which became the title of his book, Dr. Sacks describes a man who had cancer in the visual parts of his brain and notes that when he first met Dr. P., a music professor, he couldn’t think why he’d been referred to the clinic for an evaluation. He appeared normal. There was nothing unusual about his speech and he displayed a high level of intelligence. However, as the neurological evaluation proceeded, bizarre perceptions emerged. When asked to put his shoes back on, he delayed, gazing at his foot with intense but misplaced concentration. When Dr. Sacks asked if he could help, Dr. P. declined the offer and continued looking around until he finally grabbed his foot and asked, “This is my shoe, no?” When shown where his shoe actually was, he replied, “I thought that was my foot.”

There was nothing wrong with Dr. P.’s vision; it was the way his brain was constructing and categorizing his perceptions that was disturbed. Later, when he was sitting with his wife in Dr. Sacks’s office, he thought it was time to leave and reached for his hat. But instead of his hat, he grabbed his wife’s head and tried to lift it off, to put it on. He had apparently mistaken his wife’s head for a hat! When giving talks about poor

insight in serious mental disorders I often like to say: If brain damage can cause a man to mistake his wife for a hat, it is easy to imagine how it can cause someone to mistake his *past self* for his *current self*.

In the late 1980s I worked extensively with neurological patients, administering psychological tests designed to uncover the deficits caused by their brain damage. I couldn't help noticing the similarities between the neurological syndrome called *anosognosia* (i.e., unawareness of deficits, symptoms, or signs of illness) and poor insight in persons with serious mental illness. Anosognosia bears a striking resemblance to the type of poor insight we have been discussing. This resemblance includes both symptomatic and neurological similarities. For example, patients with anosognosia will frequently give strange explanations, or what neurologists call *confabulations*, to explain any observations that contradict their belief that they are not ill.

One forty-two-year-old man I evaluated had been in a car accident and suffered a serious head injury that damaged tissue in the right frontal, parietal, and temporal lobes of his brain, leaving him paralyzed on the left side of his body. When I met with him about a week after the accident I asked if he could raise his left arm for me, and he answered "yes." When I asked him to do it, he lay there expressionless, unable to move his paralyzed arm. I pointed out that he had not moved his arm. He disagreed. So I asked him to do it again while looking at his arm. When he saw that he could not move his arm he became flustered. I asked him why he did not move it, and he refused to answer at first. When I pressed him, he said, "I know this is going to sound crazy, but you must have tied it down or something."

Anosognosia has been with us for as long our species has enjoyed the benefits of consciousness. More than 2,000 years ago L.A. Seneca, writing on the moral implications of self-beliefs, described what appears to be a case of anosognosia following hemianopia (blindness caused by brain damage): "*Incredible as it might appear...She does not know that she is blind. Therefore, again and again she asks her guardian to take her elsewhere. She claims that my home is dark.*" How could someone not realize she was blind? And why, when faced with the evidence, would she seek to explain away the blindness?

***When one's conception of who one is gets stranded in time, one can't help ignoring or explaining away any evidence that contradicts one's self- concept.***

The man who had been paralyzed in the car accident could not understand that he could no longer move the left side of his body. It didn't fit with what he believed about himself (that his arm and leg worked fine), so he couldn't help trying to explain away any evidence to the contrary. He was just like the blind woman who did not understand that

she was blind, and more easily believed an alternative explanation (the house was dark) than the truth. Every day someone with a serious mental illness utters similar explanations to buttress his belief that there is nothing wrong with him. When one's conception of who one is gets stranded in time, cut off from important new information, one can't help ignoring or explaining away any evidence that contradicts one's self-concept. And so, many chronically mentally ill persons attribute their hospitalizations to fights with parents, misunderstandings, etc. Like neurological patients with anosognosia, they appear rigid in their unawareness, unable to integrate new information that is contrary to their erroneous beliefs.

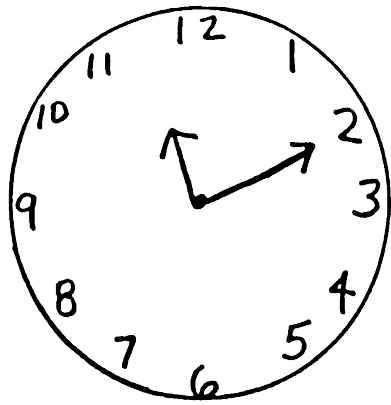
One final similarity between neurological patients with anosognosia and the seriously mentally ill involves the patch-like pattern of poor insight. Pockets of unawareness and awareness often coexist side by side. For example, the anosognosia patient may be aware of a memory deficit but unaware of paralysis. Similarly, we have seen many patients with schizophrenia who are aware of particular symptoms while remaining completely unaware of others.

Damage to particular brain areas can result in anosognosia. Studies of anosognosia, therefore, provide a practical starting point for hypothesizing about the brain structures responsible for insight in persons with serious mental disorders. Neurological patients with anosognosia are frequently found to have lesions (i.e. damage of one kind or another) to the frontal lobes of their brain. Interestingly, research has shown that these same areas of the brain are often dysfunctional in people with serious mental illness.

In one study of neurological patients at Hillside Hospital in Queens, New York, conducted in collaboration with Dr. William Barr and Dr. Alexandra Economou, I compared patterns of unawareness in three groups of patients suffering damage to three different regions of the brain. This study was funded by the Stanley Foundation and had as one of its goals identifying the brain dysfunction most likely to produce awareness deficits. As expected, patients with frontal lesions were more likely to show problems with insight into their illness than patients with left posterior damage. Let's look at an example.

George, a seventy-one-year-old man who had suffered a stroke, was asked to draw the clock on the left side of the figure that appears below. Before drawing the clock, he was asked, "Do you think you will have any difficulty copying of this picture?"

George was instructed to use the following 4 point scale to answer the question: 0 = no difficulty, 1 = some difficulty, 2 = much difficulty, and 3 = cannot do. He answered "0" and said he would have no difficulty. The right side of the figure shows the drawing he made after exerting great effort.

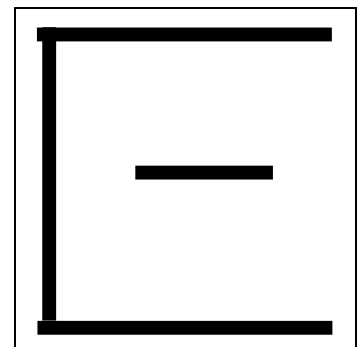


More striking even than his inability to recognize that the stroke had left him unable to perform such a simple task is what happened next. When asked if he'd had any difficulty drawing the clock, he answered, "No, not at all." Further questioning revealed that he could not see or comprehend the differences between his clock and ours. When it was pointed out to him that his numbers drifted past the circle, he became flustered and said, "Wait, that can't be my drawing. What happened to the one I drew? You switched it on me!" This is an example of a confabulation. Confabulations are the product of a brain "reflex" that fills in gaps in our understanding and memory of the world around us. Almost everyone confabulates a little. For example, have you ever heard someone stop in the middle of recounting something that happened to them and say something like "Wait, I was lying. I don't know why I said that? It didn't happen that way!" This is an example of an instance when someone realizes he has confabulated and corrects himself. Confabulations are constructed memories and/or experiences that are especially common in people with brain dysfunction. However, in such individuals, you don't usually get the self-correction because they don't understand what has just happened. George wasn't lying when he said I had switched the drawing on him. It was the only thing that made any sense to him and so, for a moment, he believed that was what happened.

***He was operating under beliefs that were linked  
to his past self rather than his current self.***

In his book *The Principles of Psychology*, William James wrote: *Whilst part of what we perceive comes through our senses from the object before us, another part (and it may be the larger part) always comes from our own mind.* There are few better examples of James's insight than the one I have just given you. George "saw" his drawing using his sense of vision. But his perception of the clock, the image of the drawing that was processed in his brain, was something altogether different from what his eyes saw. George had a concept of himself, a *self-schema*, that included the belief that he could easily copy a simple drawing of a clock. You have the same belief as part of your self-schema. You might not consider yourself artistically endowed, but you believe that you could produce a reasonable facsimile of the drawing if asked to. In a sense, this belief was stranded in George's brain, disconnected from his visual senses and left unmodified by the stroke he had suffered. He was operating under beliefs that were linked to his *past self* rather than his *current self*. He *saw* the numbers drifting outside his lopsided circle, but he *perceived* the numbers to be in their proper place inside a symmetrical circle. Our brains are built to order, and even help construct, our perceptions.

Here is a simple example of what I am talking about. Answer this question: What letter appears in the box you see to the right? If you answered "E" you saw what the majority of people who are given this task see. But in reality, you did not *see* the letter E. What you saw is a line with two right angles (a box-like version of the letter "C") and a short line that is unconnected to the longer one. Yet, you probably answered E because you *perceived* the letter E. The visual processing and memory circuits of your brain closed the gap between the lines so you could answer the question.



To prove that poor insight in serious mental disorders is neurologically based, however, my colleagues and I needed more than observed similarities with neurological patients. We need testable hypotheses and

data that are confirmatory. Knowing that patients with schizophrenia frequently show poor performance on neuropsychological tests of frontal lobe function, we hypothesized that there should be a strong correlation between various aspects of unawareness of illness and performance on these tests of frontal lobe function. Dr. Donald Young and his colleagues in Toronto, Canada, quickly tested and confirmed our hypothesis. They studied patients with schizophrenia to examine whether performance on neuropsychological tests of frontal lobe function predicted the level of insight into illness, and the result showed a strong association between the two. Of particular note is the fact that this correlation was independent of other cognitive functions they tested, including overall IQ. In other words, poor insight was related to dysfunction of the frontal lobes of the brain rather than to a more generalized problem with intellectual functioning. Taken together, these results strongly support the idea that poor insight into illness and resulting treatment refusal stem from a mental defect rather than informed choice.

But just as one swallow does not make a summer, one research finding does not make an indisputable fact. The next step in determining more definitively whether poor insight into illness is a consequence of frontal lobe dysfunction is to replicate the findings of Young and his colleagues in a new group of patients. As it turns out, the finding that poorer insight is highly correlated with frontal lobe dysfunction has been replicated many times by various research groups (see table below). The list of replications I give here will undoubtedly be added to by the time you read these words, as I am aware of yet unpublished results that also confirm the hypothesis. Repeated replications by independent researchers are infrequent in psychiatric research. The fact that various researchers have found essentially the same thing as Young and his colleagues speaks to the strength of the relationship between insight and the frontal lobes of the brain. A few studies have not found this relationship, but in those cases methodological flaws in the design of the research are likely the reason.

### **Executive (frontal) dysfunction and poor insight**

- Young et al. *Schizophrenia Research*, 1993
- Lysaker et al. *Psychiatry*, 1994
- Kasapis et al. *Schizophrenia Research*, 1996
- McEvoy et al. *Schizophrenia Bulletin*, 1996
- Voruganti et al. *Canadian Journal of Psychiatry*, 1997
- Lysaker et al. *Acta Psychiatr Scand*, 1998
- Young et al. *Journal of Nervous and Mental Disease*, 1998
- Bell et al. Chapter in: *Insight & Psychosis*, Amador & David, Eds. 1998
- Morgan et al. *Schizophrenia Research*, 1999a & 1999b
- Smith et al. *Journal of Nervous and Mental Disease*, 1999
- Smith et al. *Schizophrenia Bulletin*, 2000
- Laroi et al. *Psychiatry Research*, 2000
- Bucklet et al. *Comprehensive Psychiatry*, 2001
- Lysaker et al. *Schizophrenia Research*, 2003
- Drake et al. *Schizophrenia Research*, 2003
- Morgan and David (review) in *Insight and Psychosis* 2 Edition (Oxford University Press)

There is also an emerging body of literature linking poor insight in schizophrenia and other psychotic illnesses to functional and structural abnormalities in the brain, usually involving the frontal lobes. A review of these brain-imaging studies (e.g., using MRI, CT

and PET scans) can be found in *Insight and Psychosis*, Amador XF and David AS (Editors), Oxford University Press, 2005.

The research discussed above, and other newer studies that link poor insight to structural brain abnormalities, lead us to only one conclusion. In most patients with schizophrenia and related psychotic disorders, deficits in insight and resulting non-adherence to treatment, stem from a broken brain rather than stubbornness or denial.

If you are dealing with a mental health professional who is holding on to the outdated idea that severe and persistent problems with insight are a consequence of “denial” (i.e., a coping mechanism), ask him or her to look at the “Schizophrenia and Related Disorders” section of their *DSM-IV-TR*, page 304:

### “Associated Features and Disorders

A majority of individuals with Schizophrenia have poor insight regarding the fact that they have a psychotic illness. Evidence suggests that poor insight is a manifestation of the illness itself rather than a coping strategy... comparable to the lack of awareness of neurological deficits seen in stroke, termed *anosognosia*.”

Now, if the person you are trying to educate is extremely resistant and also a careful reader, he or she may say something like, “Yes, but I also see that Dr. Amador was the co-chair of this section of the *DSM*, so he just wrote what he already believes. It doesn’t prove anything!” If that happens, have the person read the introduction to the last revision and he will learn that every sentence in this version of the *DSM* had to be *peer reviewed* before it was added. Peer review in this context involved other experts in the field receiving the proposed text along with all the research articles that supported the changes my co-chair and I wanted to make. *All changes had to be supported by reliable and valid research findings*. So, although the field has been slow to give up outdated theories about poor insight in these disorders (thinking it’s denial rather than anosognosia), we are making progress.

### **How can I know whether I am dealing with Anosognosia versus Denial?**

Often, I get asked the question: “How can I know whether I am dealing with Anosognosia versus Denial?” There are three main things you should look for:

- 1.) The lack of insight is severe and persistent (it lasts for months or years).
- 2.) The beliefs (“I am not sick.” “I don’t have any symptoms.” etc.) are fixed and do not change even after the person is confronted with overwhelming evidence that they are wrong.
- 3.) Illogical explanations, or confabulations, that attempt to explain away the evidence of illness are common.

Ideally, you would also want to know if neuropsychological testing revealed executive dysfunction. But regardless of whether the problem is neurologically based, or stemming from defensiveness, or both, the most important question is: How can you help this person to accept treatment? That is the focus of the rest of this book and the cause of the severe and persistent “denial” may be less important than how you choose to deal with it.

But before we move on to that topic, one last comment about anosognosia will be helpful because many people despair that they will never be able to help their loved one if the denial is in fact a symptom of the illness.

### **A Broken Brain Is Easier to “Fix”**

The bottom line to all of this research is that more likely than not, a broken brain is creating barriers to insight and acceptance of treatment in the mentally ill person you’re trying to help. But that is no reason to despair. There are two immediate ways in which you can use this knowledge to benefit your loved one and yourself. First, when faced with the frustration of trying to convince him or her to get help, remember *the enemy is brain dysfunction*, not the person. This shift in your thinking can go a long way toward lowering your level of frustration, increasing your effectiveness, and building a

collaborative relationship with the person you are trying to help. Secondly, this knowledge can be used to rekindle hope that you will be able to help your loved one accept the help that's being offered. Hope? If you're like most people, the research I reviewed above may have left you feeling more pessimistic or confused than optimistic! After all, brain damage is irreparable, isn't it? If poor insight is another symptom of brain dysfunction, then what is there to hope for?

A common myth is that personality traits like stubbornness or defensiveness are far easier to fix than deficits caused by brain damage. In fact, however, it is far more difficult to change a person's personality than to teach him how to compensate for some forms of brain dysfunction. So, although the notion that brain dysfunction can cause poor insight may at first lead you to feel powerless, it is actually grounds for renewed hope.

Rehabilitation is possible following many types of brain damage, not because brain cells are repaired but because functions can be re-routed to other, undamaged parts of the brain. In such cases doctors carefully assess the deficits caused by the lesions and create a plan to compensate for the loss of ability. This is the usual practice following strokes, brain tumors, head injuries, and other causes of central nervous system damage. In fact, rehabilitation specialists are trained specifically for this task, which is frequently referred to as *cognitive remediation*.

One such patient I worked with had suffered a head injury as the result of a bicycle accident. David, a twenty-four-year-old messenger, would have escaped his collision with a taxicab in New York City completely unscathed if he had been wearing a helmet. However, he had not been wearing a helmet, and the resulting brain damage left him with moderate impairments in short-term memory. For example, he could not remember where he parked his car once it was out of his sight, or why he had gone to the grocery store or the bank by the time he got there. Remembering the names of people he had just met, appointments, and other bits of new information we all need to function day-to-day, was seemingly impossible for David. His long-term memory was fine, however. He remembered the birthdays of close friends and relatives, details of places and events from his past, and other information that had been stored before the accident. As you might imagine, recording new information into long-term memory was now much more difficult for him because he often could not hold the new information in his short-term memory long enough to encode it or file it away. One might worry that David was doomed to live the rest of his life befuddled and confused, like an absent-minded professor who would forget his head if it weren't connected to his neck. But, like the absent-minded professor, David had other cognitive skills and character traits that could be recruited to help with his memory problems.

First and foremost, he was motivated for rehabilitation. He was frustrated that he could not remember things and wanted to get better at it. Second, he could focus his attention and concentrate for short periods of time without any problem. His short term visual memory was relatively less impaired than his verbal memory. So, although he could not remember a list of words he had read ten minutes earlier, he could easily recall pictures and shapes. And, once something got into long-term memory it usually stayed there. With a rough understanding of his abilities and disabilities, we devised a plan to help David improve his memory. He learned to use memory aids, or mnemonics, to improve his short term memory.

Since he could focus and had the ability to remember visual information, he was taught to visualize the information (words) he wanted to remember. Remembering where he parked his car was easy when he used this strategy. Rather than trying to remember row letters and parking space numbers, he would create a map of the parking lot in his head and visualize where his car was in the square or rectangle he saw in his mind's eye. By visualizing the lot from above, he could locate his car with ease. I also helped him to

develop the habit of carrying a notepad in his pocket and writing down anything he needed to remember. To counter the problem of David's forgetting to look at his reminder list, we set his watch alarm to beep every 30 minutes. Whenever he heard the beep he remembered, after a little practice, to look at his reminder list. David also learned to visualize names and words to help him remember. Having just met someone named Tom, he visualized a tom-tom drum. Carol was transformed into a group of Christmas carolers, a friend's newborn infant named Elizabeth became the Queen of England, John a toilet, Jack a car-jack, etc.. To remember to meet a friend at a McDonald's at five o'clock, he pictured five golden arches. After a while, he got so good at visualizing that he would often make a game of it, challenging others to see if they could come up with an image to match a name or phrase.

This approach is highly relevant to the task of helping the seriously mentally ill develop awareness of his or her illness and the new skills needed to become willing and active participants in treatment. In the chapters that follow, you will learn how to evaluate the nature and severity of the awareness deficits your loved one has, and to devise a plan for helping him to compensate for these deficits. With this method, you can help him develop the kind of insight he needs to cope effectively with the illness and accept treatment. Accomplishing this can be much easier than you might think.