

A Flagging Flasher¹

Felicity heard about George years before he met him. A pair of colleagues treated George for his exhibitionism using Wolpe's systematic desensitization method almost ten years before Felicity and he met. Apparently, there had been a slight reduction in the frequency of his exhibitionistic acts following the systematic desensitization, a reduction which lasted for about three months. But the frequency of 'flashing' had quickly returned to its former rate -- a rate that varied between one and four or more times per day when he was not incarcerated. A psychiatrist characterized George as the most malignant and intractable case of exhibitionism ever recorded in the literature.

From the time when he was treated with the desensitization, George had been carried by the psychiatrist of the team, who had tried 'every known form of therapy' with George, ranging from intensive psychotherapy to aversive conditioning. Since the psychiatrist was moving his practice, he transferred the case to another psychiatrist who, upon reviewing the treatment provided this man, determined that the only thing that hadn't been tried yet was something out of Felicity's bag of tricks. Consequently, George was referred to Felicity for treatment.

Felicity listened to George's story. The man was clearly desperate. He disliked his compulsion to exhibit himself, and not just because it regularly landed him in jail. He had accepted every kind of indignity in order to free himself of his actions. He had even accepted his wife playing the role of custodial officer. To prevent his misdeeds, she accompanied him everywhere, including to and from work. He still managed to elude her daily in all sorts of clever ways in order to perform his act.

Unlike most exhibitionists Felicity had known, George did not give himself the justification that he only wanted to give pleasure to the ladies to whom he exposed himself. His psychotherapy and his frequent experiences in court had disabused him of that idea. Besides, the treatments he had received also included covert sensitization -- a modern way of treating exhibitionists. In this method he had been induced to image the guilt and shame he felt in court when his unacceptable acts were being described in detail in public. As soon as he was feeling the guilt and shame strongly enough, he was then required to exhibit himself to a female staff member. This 'cold' exhibitionistic act, repeated many times, had not reduced his exhibitionistic frequency a bit. It was not that he wanted to do the act, nor did he report much pleasure or arousal in it. He felt compelled to do the act.

Believing, on the basis of the tests administered to George,

¹ Written by Doug Quirk, date unknown.

that there was a negative, anxiety-mediated, arousal at the root of his compulsive actions, Felicity started George on Quirk's stimulus conditioned autonomic response suppression (SCARS) method (described in greater detail later). Galvanic skin resistance (GSR) electrodes were attached to George's right hand to record moment to moment changes in his palmar sweat response - - as one way of measuring activity of the autonomic-emergency-stress-anxiety nervous system. Meanwhile, George was shown pictorial slides, mostly representing people in various stages of undress, usually in public or looking as though they were embarrassed by being thus unclothed. The purpose of the pictures was to evoke in George ideas related to mild embarrassment associated with being seen by others in various ways 'exposed' to public scrutiny -- the feelings usually associated with shame. Strange and contradictory as this may seem, the idea was to desensitize or decondition (get rid of) his uncomfortable arousal or shame. Every time, as soon as the GSR recorded a 1,000 ohms increase (less sweat) beyond its former levels, the slide George was looking at was changed. In this method, slide change (not slide content) was used as if it were a 'reward' for the increase in skin resistance (less sweat, more 'comfort') as measured by the GSR. The idea was to train George's physiological anxiety responses toward comfort in the situations represented by the slides -- hopefully to reduce the associated uncomfortable feelings he might experience in such situations.

His wife continued to accompany George everywhere, as she had for the past many years. The treatment seemed interminable to George. It actually lasted three months, at the (maximum) frequency of three sessions a week. There were thirty-five sessions in all. There was no discussion of his exhibitionistic acts. As the treatment was reaching its planned end, Felicity was surprised when, upon inquiry, George said that his exhibitionistic acts had stopped about a month previously. Of course Felicity was a little sceptical, but he thought he would not press the issue too much as George would eventually be in court and in jail again if he was not telling the truth.

Treatment was concluded according to plan, and follow-up visits were arranged monthly. At the first follow-up visit, George reported that there had been no 'flashing' now for a bit more than two months. As if to confirm this, George had attended the session not wearing manacles and without an escorting correctional officer waiting for him. Felicity congratulated him, another appointment was made for a month away, and they parted.

Just before the next planned session, George phoned Felicity in a panic. He said, "It's happened again." There was genuine despair in his voice. Felicity suggested that they could talk about it at their planned session in a few days time. When George appeared for that appointment, he carried on his face a mixture of self-depreciation and wonderment. He said he had

indeed exposed himself on the one occasion a few days earlier, but he had not felt compelled to repeat the action since. Felicity decided to respond in a matter-of-fact and supportive way, and he encouraged George to 'forget about it'. George thought Felicity was out of his mind and told him so. Felicity shrugged and said, "Probably."

Of course, George could not know what was behind Felicity's lack of concern. Felicity had observed two interesting things about people who were undergoing the SCARS procedure which he had used with George. First, if the frequency of sessions was such that there was less than 48 hours between sessions (i.e., sessions held daily), it tended to take almost a half again as many sessions to complete the basic anti-anxiety treatment task as it did if there was at least 48 hours between sessions. He had concluded that what is called 'short-term consolidation' of learning requires about 48 hours. So, with those people seen daily, short-term consolidation of the learning from one session was not yet complete before the learning from the next session was introduced. This may have been why treatment was 'slowed down' in these cases.

Second, he had noticed something else which was more relevant to George's current situation. Following completion of this kind of treatment, at about six week intervals, many people reported a temporary recurrence of their symptoms. The recurrence was often accompanied by an increased intensity of reported anxiety or distress. Felicity had concluded from this observation that long-term consolidation of learning must take about 6 weeks. He thought that new learning must be stored in temporary memory for a while. At some point in time (perhaps after 6 weeks), the brain's executive function decides that the new learning is appropriate, and that it should become part of the long-term habit storage system. At this point, the new learning is probably 'dumped' into the more or less permanent organization of behaviour, which is called personality. But the existing structure of habits in the personality would be somewhat inconsistent with the new learning, for example, from treatment. Consequently, the personality would have to re-adjust itself and its motivational force fields to accommodate the new learning. This action should involve a general disruption of the organization of the personality system. This disruption might well be experienced as distress, and might well allow old habits to re-appear temporarily, particularly if they were anxiety-related.

Given this way of looking at the process of consolidation of new therapeutic learning, Felicity was not surprised to observe a periodic re-emergence of symptoms. And, in fact, it was even reassuring to him when it occurred. But it had been about two months -- that is, more than six weeks -- since George and Felicity had terminated their treatment work together. Didn't that bother Felicity? Not really. Felicity had no idea at all

about when to start counting off the 6-week intervals. With the benefit of 20/20 hind-sight, Felicity was ready to argue to himself that the treatment had really been completed when George, unbeknown to Felicity, had stopped exposing himself. And that had now been about three months ago, or an interval equal to two six-week long-term consolidation periods.

Although troubled by Felicity's capricious nonchalance about his criminal behaviour, George accepted the reassurance that Felicity was not worried and went home. They completed their follow-up interviews together a little short of the planned two years. There were no further incidents reported during that time, and George remained out of court and out of jail.

As if to tell Felicity that the termination of the follow-up was premature, just after it was completed and almost exactly two years following the last incident, George phoned Felicity again in a panic. "It's all over me again," he moaned. Felicity invited him in for another interview.

George looked scared and despondent when he appeared for the session a couple of days later. Felicity asked him what had happened. He said his wife had stopped accompanying him everywhere about a year perviously, since he had not exposed himself for a long time. He was driving home from work on Friday. He saw a woman walking on the side walk. He parked in a lane way ahead of her and, when she passed the lane, he stepped out and exposed himself. But he was not sure that she had seen him as she did not react in any way. He drove on until he reached a shopping mall. He parked and got out of his car, found a couple of women and exposed himself again. He was sure they saw him this time. Then he felt overwhelmed by panic. He leaped into his car, drove home as fast as he could, ran in and hid under the bed.

Felicity wanted to laugh at the image this account painted in his mind, but the fact that he was still unsure about why this incident had occurred sobered him. He asked George whether he was suffering from any infectious illness -- he was not. He could see that George had not aged appreciably. He asked if he had been imbibing alcoholic beverages in any unusual quantities -- he had not. He asked if George was under any other acute source of stress -- he was not. He asked if George had been particularly tired. That would have exhausted Felicity's intelligence about the conditions under which old habits are inclined temporarily to re-emerge. George acknowledged that he had been particularly tired. The incident in question had occurred while he was driving home on the Friday evening having just completed a week of double over-time shifts at work. Fatigue, and the above other factors, can reduce usual conscious controls, and can reinstate old habits temporarily.

Felicity breathed a sigh of relief and told George to go home and get some rest. George shook his head and stared at Felicity in disbelief. There was no doubt Felicity was mad.

However, mad or sane, he felt he could trust Felicity, and he did as he was told. Over the next few years, Felicity had periodic contact with George about matters concerning his family -- George and his wife had appointed Felicity as their family psychologist. During this time there were no further incidents of exhibitionism reported.

Eight years passed, and Felicity received yet another frantic phone call from George. "It's all over me again." He rushed over to see Felicity that day and reported that he had just exposed himself again on his way home from work. Felicity inquired into the above issues once more. There was nothing noteworthy in George's responses to the questions. There had been some family stressors during the past year, but nothing that Felicity considered to be relevant to the re-emergence of the old habit after so long a time.

The better to think about the problem, Felicity went to light up a cigarette and he offered one to George. George declined the offer politely. Felicity was taken aback by this refusal. He remembered George to have been almost as heavy a smoker as he was. He thought George shared with Felicity one of the latter's lifelong objectives, namely, to burn up the products of those awful tobacco companies, usually one at a time in order to extend the period of the tobacco companies' suffering. He asked George when he had quit. George reported, with some pride, that he had quit three days earlier. Felicity gave a snort of disgust. "Get out of here!" he laughed. George was confused. What had he just said? Did Felicity want him to start smoking again? Was smoking a part of whatever had 'cured' his exhibitionism? Seeing George's sense of bewilderment, Felicity explained. The third day after quitting smoking is the point of maximum physiological stress and emotional disruption. The nicotine is just about out of the system, but there remains enough to create an increased craving for the poison. George was simply suffering a particularly strong physiological stress reaction, which would be gone by the next day.

George left. Although there have been further contacts about family matters, there has been no report of any exhibitionistic act. The last incident is now about 12 years old. In his own peculiar way, Felicity imagines there might be another recurrence in maybe four more years -- to represent the steady strengthening of the new habit and the decline of the old.

A Wired Pyro

Hugh was an arsonist. He had set fires all over the city in which he lived. In setting each fire, he felt 'in control' of the social world which he felt ostracized him, and he obtained a kind of exhilarating excitement in the sense of 'getting back' he felt over the things he burned. However, he did not experience any sexual excitement, nor was he excited by the ensuing activity

when the fire trucks and fire fighters arrived -- such as that noted in the reports of (rare) pyro-erotic cases. In fact, he rarely waited around to see that part of the sequence of events.

Hugh's psychological test performances were quite different from Harry's and Hector's. The DDT scores were within 'normal' limits. But the tests did reveal a high level of anxious tension which, in his case, seemed to be projected and experienced mainly internally in his viscera ('guts'). It was as though internal tension accumulated within him in a manner which seemed similar to that of most pyro-maniacs. When tension reached an intolerable peak intensity he seemed to feel the need to create a colourful and intense experience (a fire) to relieve the tension.

Because Felicity concluded that the anxious tension targeted the internal parts (viscera), he thought it might be appropriate to use a desensitization method targeting the bodily autonomic response most directly. So, viewing Hugh's behaviour as though it was a compulsive act similar to George's, Felicity started Hugh on Quirk's method of stimulus conditioned autonomic response suppression (SCARS).

There were thirty-five half-hour treatment sessions using the SCARS procedure. By half-way through this treatment, Hugh seemed calmed down and he reported that the fire-setting behaviour had stopped. His calmness and comfort grew through the rest of the treatment. He claims to have set no more fires in the intervening twenty years, and he has not been arrested or charged in that time.

A Crohn's Cronies

One day, a friend, Penny, phoned Felicity. She asked if she could see him on a professional basis. When she arrived, she looked depressed and distraught. Felicity was alarmed and asked her what was the matter. She said she had to come to grips with her mortality as her doctor had just told her she was going to die.

Felicity felt like using some obscenities. He refrained and asked her please to fill him in. She said she had been suffering acute pain in her lower abdomen and she had consulted her physician about it. He had run a series of tests on her and then had called her in. He had informed her that she had Terminal Ileitis.

Felicity asked her what that meant to her. She said that, as far as she knew, 'terminal' meant it would result in death, and she understood that 'ileitis' meant the dread killer was Crohn's disease. Felicity asked Penny what else her doctor had told her about this condition. She said he had told her that she would be started on cortisone, and that if the disease progressed she would have to have, possibly repeated, surgery to try to halt the progression. Felicity was unable to contain himself any more. He swore using some 'street' invective. Then he apologized to Penny. He said: "I'm truly sorry you got in the

hands of a twit, Penny. Let me explain what all that is about. The phrase 'terminal ileitis' refers to swelling or inflammation (-itis) of the part of the body called the 'terminal ilium'. The terminal ilium is the last little part of the small intestine before it connects with the large intestine or colon. It is called 'terminal', in healthy people too, because it is the last little part of the ilium. Terminal Ileitis, or swelling of that part is called Crohn's disease. It is not fatal. Crohn's disease, for the patient, is a source of pain and anxiety. Crohn's disease, for the surgeon, is a wonderful source of income. What may make Crohn's disease dangerous, and perhaps even fatal, is the treatment it receives from the physician.

"The chemo-therapy is usually cortisone. Cortisone is a naturally occurring stress hormone produced by the adrenal cortex, and its effect is, among other things, to settle down arousal or activation of the immune response of the body. When it is given as an exogenous substance (as a medication) it tends to lull the immune system. That reduces the irritability of body tissues, usually reduces the swelling (or 'itis') and thus usually reduces the pain. Over long maintenance use, it also lulls the immune system such that it may not respond well to infection. Infection may then spread, and that can be dangerous.

"If the chemo-therapy is not working well enough, the other choice available to physicians is mutilative surgery. The surgeon may go in and cut out the affected (NOT infected) part of the small intestine. If the pain recurs, he may go in again and again to cut out more and more of the intestine -- IF the patient allows him to do so. Of course, as the intestine is thus shortened, it becomes harder and harder for the body to retrieve nutrients from the food it receives, and that may make the person weaker and weaker, and less able to cope in a robust way with the strains of living. Also, each time the surgeon cuts into the body it represents a serious and stressful insult to the system, as well as causing injury to which the body may react with other kinds of conditions. "So what am I saying to you? Don't do it! Let's, please, think this thing through together." For reasons Felicity never understood, Penny had always liked and trusted him. She was shocked at her misunderstanding of what the physician had told her. She was relieved by what she now had heard. But she was fearful that on this occasion Felicity had things wrong. She pleaded for some confirmation of what he had told her. So, together, they looked up some medical texts to be sure Felicity was right.

Once she felt she had confirmed and understood the information she had received, she asked what they could do about her condition. They started with 'the basics'. Inflammation or swelling of any tissue occurs when the body's immune system identifies a substance or object as being foreign. For example, some respiratory system cells can react to environmental substances (allergens) as if they were dangerous when they are

not; some skin cells can stimulate the reaction if they become infected, and thus may form pimples; and some intestinal cells can produce that reaction to some kind of food or substance in the intestines, as in Crohn's disease.

There are several parts of the immune system's reaction. Fluid is pumped into the area, causing swelling, which may be painful. The blood vessels dilate or expand (causing redness or inflammation) to allow an increase in the number of white cells which can get at the area to attack and kill any infection. The suffix 'itis' refers to the swelling and inflammation.

The immune system is activated by the autonomic nervous system, which stimulates and orchestrates it. The autonomic nervous system, in turn, has been activated by the brain, which has identified some 'danger' within the system it regulates and controls -- the whole body. The brain and autonomic nervous system, being nervous tissue, can learn to recognize and react to dangers, apparent or real. Similarly, they can be taught to stop reacting to unreal dangers.

Is there any real 'danger' there for the body to react to? Perhaps, but it is likely there is none. If there was something there which really threatened the body's survival, within at most weeks, either the danger would have been dealt with by the immune response, or the uncontrolled danger or infection would have spread pretty widely and the person would be dreadfully sick or dead. By the time the inflammation has been there for, let's say, six months something other than an active or infectious agent is 'causing' the continuation of the symptoms. What could that something be?

Although some kinds of chronic diseases seem to travel in families, any genetic factor involved tends to provide only a weak pre-disposition to 'react' in the way defined by the disease. The effect of a weak genetic link rarely insures the development of the illness -- this is not always true, witness a straight hereditary disease like Huntingdon's Chorea. But let's talk about the emergence of a disease as if it were the overflow from a cup. There may be some sediment filling the bottom of the cup from a genetic factor. Then there is some amount of 'fill' in the cup from the amount of the irritating substance (poison, infection or allergen) available to the person -- too much may fill the cup because the system can't deal with it, although that too is rare. The third, and last, thing which is poured into the cup is the available 'reactivity' of the target kind of tissue -- this is usually a general bodily 'reactivity', but it may be specific to the particular tissue. This 'reactivity' is probably best represented by the reactivity of the person's immune system or, which is the same thing, the reactivity of the person's autonomic-stress nervous system. If these three things added together produce 'enough' total reaction, the cup may overflow or the threshold of the illness may be exceeded, and the illness develops.

Now, we can't easily alter the person's genetic inheritance. By living under reasonably sanitary conditions we can usually control the amounts of poisons or infections getting into our systems -- that's what public health is all about. But the thing we really can control is the 'reactivity' of our stress systems. That is why cortisone is used to treat so many immune diseases, like Crohn's disease. It damps down and lulls the immune reactivity. But it also suppresses the immune response making it hard for the body to rally to fight off infections. There is another way.

The other way is to help the immune system to get some rest. That not only lulls it a bit, but it also keeps it fresh and ready to deal with poisons, infections and allergens if it needs to. This other way, unfortunately, is not understood by physicians. It involves training the autonomic nervous system into a peaceful and restful state. The standard ways to do this are called stress or anxiety desensitization methods. And there are several of them. To deal with a physiological response within the body, perhaps the best method is Quirk's stimulus conditioned autonomic response suppression (SCARS) method (described in several other stories).

Penny decided to try SCARS. Galvanic skin resistance (GSR) electrodes were attached to her right hand. She was shown sets of slides related generally to classes of anxiety which she reported on a Fears Survey Schedule. Every time her GSR response increased (less sweat) by at least 1,000 ohms, the slide she was looking at was changed to serve as a 'reward' for her body having 'calmed down' by a small amount. There were thirty-five half-hour sessions. She was on cortisone at the beginning of this treatment programme, so that it was impossible to tell when the inflammation stopped. About two-thirds of the way through the SCARS programme, she stopped using the cortisone. There was no pain, nor has she had any more bouts of pain in the 15 years since this treatment was completed. It seems to have terminated her terminal ileitis.

A Pyloric Retread

And then there was Paul. Paul had developed kidney failure. A suitable donor was found, and he had a kidney transplant. Unfortunately, the body's immune system identified the donated kidney as foreign tissue and started to attack it. That is, organ rejection started to take place.

His physicians did the usual thing. They put him on quite massive doses of cortisone to lull the immune system, hoping the transplanted organ would start to be recognized as a personal belonging after a while. The organ rejection continued and the cortisone levels were increased.

At this point, Paul consulted Felicity. He asked whether some method of psychotherapy might help to limit the organ rejection. Felicity agreed it wouldn't hurt to try. They

started on a programme of SCARS, as described with Penny just now. By half-way through the programme, the indications of organ rejection were weaker and the cortisone was cut back. By the end of the programme, the indications of organ rejection had stopped and Paul was off all cortisone. He remained healthy during the next five years of occasional contact.

Did the cortisone finally turn the trick? Did the body just stop trying to reject its new organ? Did the SCARS treatment help? Felicity doesn't know. Of course, you know. Whatever position (belief) you happen to hold, the SCARS method was at least like chicken soup -- it may not have helped, but it couldn't hurt.

A Misplaced Plaque

Priscilla collapsed one day at home. She was taken to the hospital where, after a number of tests, she was diagnosed as having Multiple Sclerosis. Cortisone was prescribed to help her body function more effectively, and she was released home. But then she began to fall down and lose consciousness. She was subjected to a C.T. Scan and an EEG. The C.T. Scan showed that the plaques on her nerve fibres, which are thought to represent the underlying pathology in Multiple Sclerosis (MS), had progressed to her brain. The EEG results showed that she was subject to epilepsy. The events in which she fell and lost consciousness were diagnosed as grand mal epilepsy.

Dilantin and Phenobarb were prescribed to deal with her epilepsy. However, even although the dosages were increased greatly, the seizures continued. She had to be admitted to hospital from time to time, both due to MS 'episodes' in which she lost control over her body and could not move, and due to injuries suffered in falling during her epileptic seizures.

The neurologist was concerned because the seizures could not be controlled with medication. So he referred Priscilla to Felicity to see if he could reduce the rate of occurrence of the seizures. The referral and the case appeared to be a fairly straight-forward task of seizure frequency reduction. So Felicity used Sterman's SMR training method for the purpose. He connected EEG electrodes to Priscilla's scalp near the C3-C4 sites, and began training Priscilla's brain toward an increased production of sensorimotor rhythm (SMR). This was done by providing whistling 'feedback' contingent upon SMR production -- this means the whistle was turned on when SMR was present and off when SMR was absent. This procedure has been described in several other stories. There were twenty-five sessions of SMR training. The seizures stopped a quarter of the way through this training, and they continued to be absent when the anti-convulsant medications were withdrawn. This was all that had been expected or hoped for. And it did prevent seizures, and thus reduced the risk of injury. But something else happened too. Although the losses of functioning -- in vision and muscle

coordination -- did not reverse themselves, there were no more of the attacks or 'episodes' by which MS progresses, and there was no further deterioration of her physical and mental functioning. Fifteen years later she remains able to function at the same relative levels at which she was functioning at the end of this treatment. And there have been no further seizures or MS episodes, although she has remained off the anti-convulsants and the cortisone. How come? Felicity can only guess. **A Nervous Nervosa**

In a way, Pam presented a treatment problem similar to Priscilla's. Pam was a pretty young lady in her early twenties. The only thing which marred her beauty was that she was terribly skinny -- emaciated, in fact. The trouble was that she was afraid to eat. When she was referred to Felicity she had been diagnosed as suffering from anorexia nervosa.

Like so many so-called diagnoses, anorexia subsumes a lot of different kinds of conditions. The risk with most of them is that the patient will become dehydrated or starved and will die. Pam had spent a great deal of time in hospital where the main effort, other than investigating her, had been to keep nutrients going into her to prevent her from dying. There was still no satisfactory way to account for her anorexia.

Felicity did his usual thing of administering and scoring a number of psychological tests. Once more, the Differential Diagnostic Technique (DDT) provided the main useful information. This test was described in Chester's case, and has been referred to often in the foregoing. The test showed that Pam had a particular problem in perceiving visual angle, seen in handling straight-line as compared to curved-line figures. And the size of the discrepancy was such that it could not properly be accounted for on the basis of commonly recognized personality problems. It occurred to Felicity that the problem in the perception of visual angle implied by these test findings suggested that Pam had an irritative focus in her brain, in the area of the 'drive centre'. Although you might think this finding is becoming a bit boring, in this case it seems likely that the part of the 'drive centre' implicated in Pam's partial seizures might be the satiety centre. That is, if electrical short-circuiting was repeatedly triggering electrical activity in the satiety centre, Pam's body would constantly feel as though it had already eaten, was satisfied and required no food. If this strange hypothesis was valid, then using Serman's method to train her brain to increase its output of sensorimotor rhythm (SMR) might prevent the short-circuiting so that she would no longer feel as though she was stuffed with food and she might start eating. The idea at least warranted a test.

Pam went through a total of twenty-two half-hour sessions in which she received a whistling sound whenever her EEG showed any SMR activity from the C3-C4 sites, and silence when there was no SMR activity there. Her time-integrated SMR production rose from

about 8 percent during the first sessions to about 50 percent during the last sessions. By the 15th session she had started eating and was recovering some weight. By the last session, her weight was approaching her normal weight at about 115 pounds. She reported that her appetite had returned and that she enjoyed eating again. What happened? Is EEG-SMR training a way to develop aesthetic sensibilities to create one who appreciates good food?

A Vascular Vagary

Pat was suffering from intense headaches. The referring physician said that she was having migraine attacks. Felicity checked out the other possibilities to account for her headaches. There was no reason to suppose she was having sinus or tension headaches. Certainly she was having the visual disturbances and the nausea which often go along with migraine.

Green had structured a method to help people learn to increase their skin temperature as a specific treatment for Migraine and for Raynaud's disease (patches of cold skin). Pat agreed to try a bit of skin temperature biofeedback training.

Migraine is supposed to be a vascular disorder -- affecting the blood vessels. What is supposed to happen is that the blood vessels start to spasm -- to tighten closed and then loosen open quickly, like a tremor of the muscles of the blood vessel walls. Although, in principle, the dilated or open condition of the blood vessels is generally the healthy way for them to be, the pain of migraine is thought to come from the rapid opening or dilation of the blood vessels in this 'tremor'. To achieve a healthy state, the task is to get the blood vessels to remain relaxed and open.

Now, in a standard temperature environment, the only thing which alters the skin temperature is the volume of blood in the peripheral blood vessels (just under the skin). If the blood vessels near the skin dilate, the volume of blood flowing through them and getting near the skin surface increases and the skin temperature rises. Among other things, this allows the body to release heat from the skin surface to the environment, and it is why some people have warm skin. If the blood vessels near the skin contract or tighten up, the volume of blood reaching them and getting near the skin surface is reduced and the skin temperature declines (gets lower). Among other things, this allows the body to conserve its heat, and it is why some people have colder skin.

The only way to increase skin temperature is to increase the volume of your blood near the skin. This can be done by training the peripheral blood vessels to dilate and to remain dilated. If a person who is prone to migraine can do that, the migraines usually stop.

Pat had a thermistor (a temperature pick up) affixed to the palmar surface of the middle finger of her right hand. This

allowed her skin temperature to be monitored continuously on the biofeedback unit. In the usual procedure, the person is asked to listen to a continuous tone which varies in pitch as the skin temperature varies. Usually, the biofeedback machine provides lower pitch tones as the skin temperature increases, and vice versa. The continuous analog feedback of the tone allows the person to 'find out' what thoughts and the like help to raise the skin temperature. Then, if a migraine aura (indication that an attack is about to happen) occurs, the person can then think the relevant thoughts, raise the skin temperature and prevent the migraine attack. That is, training with continuous feedback results in discontinuous voluntary self-regulation whenever it is required.

But Pat wasn't aware of any aura to warn her that a migraine attack was about to occur. And once it had begun, she forgot everything she had learned and was 'locked into' her headache. Voluntary self-regulation was not likely to work well for her. Instead of giving her continuous feedback, she was given discontinuous and contingent feedback. Contingent feedback means that she only got the 'reward' of feedback if and when her skin temperature did what it was supposed to do -- in this case, when it rose. Contingent rewards for any kind of response tend to increase its habit strength. The result is that suitable kinds of discontinuous and contingent feedback eventuate in continuous production over time of the automatic learned response. This seemed to be a more satisfactory approach to Pat's problem -- that is, to train her in habitual and automatic re-regulation rather than in voluntary self-regulation.

A digital counter was placed in her view while she was attached to the skin temperature unit. She was told that Felicity did not want to disturb her relaxation by talking to her. So every time a new count appeared on the digital counter, that was to be his way of saying 'good for you'. Felicity monitored the silent skin temperature unit. Each time Pat's skin temperature increased successively by one-tenth of a degree Fahrenheit, Felicity pressed the remote counter control and increased the count by one. If the temperature dropped down again (for any reason), Felicity waited until it had recovered by at least a half degree and then he started again pressing the counter button to give her counts for temperature increases. The number of counts and the starting and ending skin temperatures served as the treatment record.

During the first few half-hour sessions, Pat's skin temperature started at about 70 to 75 degrees Fahrenheit, and it remained under 80 degrees. She would get as many as sixty to ninety counts as the skin temperature fluctuated up and down. By half way through the 20 sessions, she would start at around 75 to 80 degrees and her skin temperature would rise to 90 to 95 degrees. Her counts tended to run up around two hundred counts

in the session. By the last few sessions her skin temperature started around 90 to 95 degrees and would increase to 95 to 99 degrees, and her counts declined again to about sixty to ninety in a session. As training progressed, the skin temperature rose more and more during successive sessions. In addition, her initial skin temperature, recorded at the beginning of each session, began to rise steadily over time. That certainly suggested that her skin temperature habit was being established upwards.

Meanwhile, her migraines simply stopped. None was reported after the third training session. She reported no further headaches when Felicity met her some three years later. And when he shook her hand it was warm.

A Gnarled Knuckle

Felicity has not yet been privileged to treat a patient with cancer. Other psychotherapists, such as the Simonton and Mahrer, have had that opportunity, with remarkable recoveries reported. It makes perfectly good sense that cancer ought to be both preventable and curable with properly devised psychotherapy. This statement is based on a number of reasons related to the real (i.e., non-viral) causes of cancer. However, to talk about that without any stories to support the talk, would surely tax your credulity beyond the point of its survival.

But then, there is arthritis. Like cancer patients, few arthritics will pursue treatment by a psychologist. After all, with both cancer and arthritis, you can see and feel the physical swellings of the body parts. There are 'real' physical things there, so how could 'the mind' have anything to do with it? Of course, this way of thinking has very little to do with what psychotherapy and Psychology are really about.

The so-called body and the so-called mind are really not separate parts of the person at all. They are one. The body refers to the anatomy and chemistry of the body, and the mind refers to the way they work. Perhaps you could say that the mind refers specifically and particularly to how the brain works -- but then the brain controls and regulates how everything works and everything the rest of the body (and itself) does. Psychology has to do with the living (functioning, doing, reacting) body. In contrast, the anatomy and chemistry are virtually the same whether the body is alive or dead -- which is why physicians can be trained, and post-mortems undertaken, on cadavers. For present purposes, let's pretend the body is still living.

Patrick was referred to Felicity because of a stomach ulcer which was flaring up repeatedly. The referring physician thought he might be unduly anxious, perhaps due to psychological traumatization from a traffic accident in which he had been involved. There was some traumatic anxiety identifiable in the tests the psychometrist administered. It might be worth

treating. But he was more interested in seeing if the ulcer could be healed. Then he met Patrick and he was no longer interested in either of those issues. Patrick's hands were absolutely deformed by arthritis. He could do almost nothing with them. The direction of his fingers was at about a forty-five degree angle with the plane of his hand. His knuckles were swollen to easily twice their normal size. He did not bother to comment on his arthritis to Felicity. After all, what could a psychologist do about that?

Now Felicity understood Patrick's point of view and did not even try to contradict it. Heck, even the research on arthritis seemed to suggest it was not a psychosomatic disorder. In fact, Felicity knew that in one study by a psychiatrist it had been shown that the swelling experienced in arthritis occurred before, and not after, the pain. So, the study was used to conclude that the swelling caused the pain (an assumption in itself), not the other way around. And so, at best, arthritis was seen to be a somata-psychic disorder and not a psychosomatic disorder. Makes sense, right? It does not.

Nobody in his right mind would think of the pain in arthritis as causing the swelling. That is not what makes arthritis a psychosomatic disorder. The psychological causes come long before that. Although this is not necessary, the process usually starts with some kind of injury -- from a fall or whatever. The injury results in a sensation of pain at or near a joint. Every time the person moves, the joint moves and the person hurts some more. Now nobody likes to experience pain. The body starts at once to do whatever it can to stop pain. If the pain comes from a joint, the body protects itself (automatically) by trying to stop the joint from moving -- to reduce the pain. (Among other things, that's what creates a limp -- limping prevents quick joint movement.)

Now, the best way to keep a joint from moving, other than tying a splint across it, is to tighten the muscles all around the joint to hold it still. Muscles pull across joints, and when they are tightened all around it they compress the joint somewhat. But the person keeps moving around and the compressed joint keeps moving too (even if only a little). That creates more pain, which results in tighter muscle tension. Eventually, the lubricating fluid between the bone surfaces of the compressed joint may be squeezed out, and the two bones start rubbing together. This produces more pain -- and possibly joint degeneration from the friction of rubbing the two hard surfaces against each other.

Notice that the pain from the original injury has probably stopped long ago when the injury healed (probably in days, months at most). But the pain is being perpetuated from time to time as a result of the muscles around it having become defensively or self-protectively tensed or tightened. The self-protective tensing of the muscles around the joint is the 'psychological'

cause of what is to follow.

When the brain experiences pain (whether from the original injury, or from the tense muscles, or from the friction between the joint's surfaces) it automatically activates the autonomic nervous system. That, in turn, automatically activates the body's immune system -- the brain assumes there is an injury requiring both attack on any infection and repair of the injury. The immune system pumps fluid into the area of the joint, creating swelling and thus more pain -- and more defensive muscle tension. Now the joint becomes swollen and therefore more painful, and arthritis may be diagnosed. But that's not all it does. The immune system also sends growth hormone from the brain to the affected site. Its job is to stimulate growth of the (assumed to be damaged) tissue.

If there is no damage to the tissue, but the body's immune system keeps acting as though something is wrong (e.g., if the poison nicotine keeps attacking the lungs without actually damaging them), the continuously stimulated cell growth may eventuate in cancer. If there is some damage that the growth hormone cannot reach (as when the joint surfaces are compressed together) it may stimulate growth of cells around the area. Bone cells are living tissue too, and bone spurs may be stimulated to grow around the affected joint -- causing more pain (and so forth). That is, the body's immune system does several things, all having consequences.

If one can simply train the muscles around an affected joint to relax, the lubricant and the growth hormone can get between the bone surfaces, lubricate them and stimulate bone surface growth for re-generation to occur. Of course, when the muscles relax, the reduced muscle tension and pressure on the joint surfaces reduces the pain experienced, and this helps reward the learning of muscle relaxation as well. At least that's the theory.

It seemed clear to Felicity that Patrick needed some anxiety desensitization. First, he needed it to be rid of the anxiety traumatically-conditioned in his traffic accident. Second, he needed it to reduce the viscerally-projected anxiety and tension which might be keeping his ulcer going. And, third, he needed it to reduce the autonomic reactivity which might be keeping his hand muscles tense and the immune system trying to fight the supposed injury in the knuckles. But which kind of desensitization should be used? The visceral projection of tension (which did seem to be occurring according to his Rorschach) affecting the ulcer might suggest the use of the galvanic skin resistance (GSR) mediated method of stimulus conditioned autonomic response suppression (SCARS) which has been described elsewhere. However, the involvement of the skeletal-striate muscles in the arthritis might suggest Wolpe's reciprocal inhibition therapy (RIT) method since it uses trained relaxation

of the skeletal muscles. Felicity decided to go the latter route.

He trained Patrick in deep muscle relaxation, taking special care to focus on relaxing the hands gently. Then he asked Patrick to picture a variety of scenes in his mind while remaining relaxed. The scenes were presented in pairs, with each pair followed by the request that Patrick raise one of his fingers, one to four, to indicate whether discomfort had decreased, increased, remained the same or been absent across the two items of each pair. At successive sessions, the hand used for this finger-raising signal was alternated to allow both hands to be exercised in this way. The scenes Patrick was asked to picture included the usual sequence of traffic images which have been described in other stories. He was also asked to visualize scenes in which he became impatient, irritated and, finally, angry (to address the usual factor underlying ulcers), and scenes in which he felt mild and then severe pain, became ill and was finally admitted to hospital (to address autonomic function).

Felicity had no choice. He had to watch Patrick's hands to await his finger signals. That allowed Felicity to examine the arthritic swelling carefully at each session. There were forty sessions. By the twentieth session, there was some reduction in the knuckle swelling and the fingers were twisted to a noticeably smaller angle. By the end of the treatment, no ulcer pain had been reported for a long time, the fingers pointed straight out from the hand, the knuckles looked to be only slightly thicker than 'normal' knuckles would be, and Patrick was beginning to use his hands almost normally, even for quite fine finger work.

Felicity saw Patrick on several occasions for non-professional reasons over the next three years. His hands looked normal, and he seemed to be using them in normal ways -- and he said they were fine. But, presumably considering the effects on his arthritis to be a result of 'spontaneous recovery', Patrick's physician did not refer any other patients at all to Felicity. Was Patrick the only case of arthritis Felicity has treated? He was not. However, the few others Felicity has seen did not exhibit visible changes except for the fluidity and ease of their movements. But, then, their arthritis was not something Felicity was privileged to examine or treat directly. In Patrick's case, his hands could be seen.

A Racked Back

Felicity can't count the number of people he has seen with back pain. In almost every case, simple relaxation training relieved the pain, at least temporarily. The point is that almost all back pain is a result of self-protective muscle tension. That's what supports chiropractic and a large part of massage therapy -- the body's defensive tension is temporarily altered and the person feels better for a while. But the pain returns when the person re-establishes the defensive muscle

tension. In Felicity's practice, if the defensive muscle tension is relieved, and then is perpetuated as a new habit by being connected to associated stimuli, the pain does not seem to recur. Consequently, if Wolpe's systematic anxiety desensitization (RIT) was used, the back pain usually vanished for the remainder of Felicity's contact.

But what of conditions such as degeneration of the vertebrae? Pierre had suffered from back pain for years. His physician had Xrays taken which showed that a couple of his vertebrae were severely degenerated. He assumed that this condition was permanent since bone substance had been lost. He therefore was extra careful with his back, ensuring that he never strained it by any heavy lifting or other hard work. Felicity could certainly understand the wish to avoid any work, heavy or otherwise.

But Pierre consulted Felicity on another matter. He had a phobia about flying. This posed a problem for him as he had a good deal of travelling to do associated with his work. He didn't want to drive because that would mean sitting for long periods of time in one, rather tense, position. He wanted to feel comfortable flying to his various destinations.

Wolpe's systematic desensitization (RIT) method was used to deal with his flying phobia. Pierre was taught the art of deep muscle relaxation. When he was deeply relaxed, he was asked to picture all sorts of scenes associated with flying. The scenes started with him at home thinking about phoning to arrange a flight, then phoning to arrange it, then packing for it, and then calling a taxi. He was asked to picture himself in the taxi at various distances from home on the way to the airport. He was asked to picture arriving at the airport, checking in at the flight counter, walking to the waiting room, waiting, and then boarding the plane. He was presented scenes in the plane involving finding his seat, sitting down, strapping himself in, looking around inside the plane, and looking out of the window at the airport activity. He pictured the plane moving out to the runway. Then he was asked to picture arriving at his destination, with the plane rolling up to the terminal, then landing, then approaching the field for a landing. Finally, he was asked to picture the original take-off, and various stages in the flight.

This long series of presentations took some thirty-five sessions. By the time he had learned to relax, he reported his back pain was gone. It remained absent. Toward the end of the treatment programme, he arranged to have another series of back X-rays taken because there had been no back pain for a long time. He was worried that the spinal degeneration had progressed to the point that he could no longer 'feel' the injury to his back. The X-rays showed that nearly all of the spinal degeneration was gone, and that the vertebrae were re-generating themselves. He had another X-ray some six months after the desensitization was

completed, and there was no longer any degeneration visible. And he had remained free of pain throughout that period of time.

If pain remains longer than six months, it is not due to a physical injury, as such. Body tissues simply renew and regenerate themselves when that which is keeping them 'injured' is removed. In most cases, the thing that 'keeps' them that way is defensive or self-protective muscle tension.

A Sore Eye At Sis' Psoriasis

How about psoriasis? Patsy had always had patches of scaly, dry, itchy skin all over her body for as long as she could remember. Every kind of pill and ointment had been tried with no noticeable benefit. She was referred by her psychiatrist for behavioural treatment for her social anxiety. She was always embarrassed around people, and she tried to stay away from others as much as she could. On inquiry, it was clear that the main reason for her social embarrassment was her appearance. She thought other people would be disgusted by the look of her psoriasis and, anyway, from her point of view it marred her attractiveness -- so what was the use? While talking with her psychiatrist, they had concluded that, since nothing could be done to get rid of the psoriasis, it would be best to deal with her social problem as though it was a social anxiety.

Felicity thought he would be pretty self-conscious too if his skin looked like Patsy's. The skin condition was too widespread over her body to be susceptible to the mirror-gazing procedure, described elsewhere to condition inhibition of self-image. He didn't know much about psoriasis, and his attempts to find useful literature on it suggested to him that few other people knew much about it either. However, it had to be some kind of an immune response so that moderating the autonomic nervous system's reactivity ought to influence it somewhat. And that approach would also be consistent with the anti-anxiety treatment he was being asked by the patient to undertake with her.

He connected galvanic skin resistance (GSR) electrodes to the palm and back of her right hand. For half-hour sessions, he showed her pictorial slides selected to represent the areas of phobia or fear depicted in her responses to a Fears Survey Schedule. Each time her GSR level increased (less sweat, more 'calmness') by at least 1,000 ohms, the slide she was watching was changed as a 'reward' for getting more physiologically comfortable. The procedure used was stimulus conditioned autonomic response suppression (SCARS) which has been described in several other stories. There were thirty-five treatment sessions in all.

By half-way through the treatment, Patsy was reporting an increase in the itchiness she felt, but the patches of psoriasis were a little less noticeable. By three-quarters of the way through the treatment, the itchiness had diminished, some of the

scaly skin was peeling off and fresh, pink skin was visible at the sites. By the time the treatment was terminated, although she claimed to have a couple of small patches of psoriasis (which also seemed to be healing) in places hidden by her clothing, none were visible. Moreover, she did not appear self-conscious, she reported feeling comfortable around people and she had joined a couple of recreational groups with other women.

Was this a cure of the psoriasis? Who knows? Felicity has not seen Patsy or the few other people he has treated for psoriasis since completion of their treatments. Since all had claimed that this was the first time in their adult lives they had been free from psoriasis, it seems likely to Felicity that they would have returned to see him if the psoriasis had recurred.

An Anti-Histaminic Auntie-Body

It was mentioned earlier in this chapter that allergies are a product of three things: perhaps a genetic predisposition which, if present, is immutable, the availability of the noxious substance or the allergen in the environment, and the stress-related reactivity of the target cells which react to the allergen. There is little that anyone can do about a person's existing genetic inheritance and, aside from living in an environmentally controlled glass house, there is little that can be done about the seasonal presence of allergens. In fact, the allergists' and homeopaths' use of diluted doses of the allergen to desensitize the sufferer's allergic reactivity is really an 'in vivo' process of stimulating a limited, sub-clinical reaction to allow the body to habituate non-reactivity. That's right, they set out to unlearn the immune-allergic reaction. And this method does not work all that well with many people for a number of specifiabile reasons.

Felicity has treated several people's allergies by systematic desensitization (Wolpe's RIT or Quirk's SCARS method) or hypnotic procedures. These may be boring. A story about a person treated by a more 'modern' (NLP) technique might be more interesting.

Primula had suffered from hay fever and asthma for many years, sometimes accompanied by itchy skin. These were reactions to cats, house dust and tree or grass spores. She was uncomfortable inside or outside, or anywhere near cats -- which she adored.

Felicity pointed out to her that there was no real 'danger' from any of her three allergens. She acknowledged that, but said she nevertheless reacted to them. Felicity pointed out that, since there was nothing dangerous about them, her brain must be making a mistake in maintaining its vigilant readiness to react to their presence with reactivity of the target allergic cells in her body. She agreed. He asked her how they might get her brain to react to these allergens as though they were harmless. She

didn't know.

He asked Primula to tell him, if she knew, what it was about cats that she sensed or received and reacted to -- any picture of what it looked like from the recesses of her mind would be fine, no matter how 'silly' it may seem. She said she imagined that what she reacted to about cats looked like little spirals -- like curly hairs, except they spiralled to a point like a cone. They were black, and the point on their ends would catch onto skin or mucous tissue and irritate it by tickling. Felicity was pleased, and he asked her to put that image up on a shelf. He then asked her what else she could think of which was small, looked like that, but had no unpleasant effect on her at all -- in fact, she liked it. After some thought, she said she thought of tiny cone-shaped sea shells which had black mother-of-pearl all over them. Felicity was delighted and he asked her to put that image up on the shelf too.

He then asked Primula what particles of the house dust that afflicted her looked like. The image was of little irregular black things with hairs coming off them which could stick to tissue and irritate it. The similar but pleasant and non-irritating image was of particles of smooth black coal dust from a particular fireplace which she had liked as a child. Those were put up on the shelf. Then he asked about tree and grass spores. They looked to her like tiny green balls with little spines out from them which would stick into tissue and irritate it. The similar but pleasant and non-irritating image was of little green sparkles which one might spray on a Christmas tree and that would stick there to make the tree bright. Those were also put up on the shelf.

She was asked to close her eyes and picture herself in a room divided in half by an impenetrable, transparent plexiglass screen stretching from ceiling to floor and from wall to wall. Closed doors from a common hall accessed each half of the room. She was asked to watch from her partitioned off half of the room while little black, cone-shaped spirals from a cat were released in the other half of the room. How did she feel? "Fine." She was asked to arrange for a frame, like a picture frame, to be put around the area containing the spirals. Then she was asked to compress the frame with its contents to the size of a picture frame, and then to push the frame and its contents back against the far wall. She accomplished this image. Then she was asked to arrange for a whole lot of tiny black, cone-shaped, mother-of-pearl covered sea shells to be flung lightly into the frame with the spirals of hair. As the sea shells moved toward the frame, air currents sucked the air out of them so that when they reached the frame the spirals of hair were sucked into them and gobbled up. She said she could really see that happening and had already anticipated that occurrence.

When the spirals of hair were thus imprisoned, she was asked to watch herself entering through the door into the other half of

the room, pausing and looking around. She was asked to say how she in the other half of the room appeared to feel. She said that she appeared to feel just fine. She was asked to watch herself in the other half of the room walk up to the frame to look closely at it. How did she feel? She felt OK. She watched herself in the other half of the room, as she reached out, touched and caressed the black things in the frame. How did she feel? She reported no feeling at all. She was asked to walk into the other half of the room, join herself in there, and do the same things. How did she feel. No feeling at all was reported. Felicity was delighted. He suggested that she take a handful of the black shells, put them in her purse and take them home with her as a souvenir. She giggled as she complied in her mind with that idea.

The same procedure was then done, first using the black spiny house dust neutralized by the black shiny coal dust particles, and then using the green spiny spores neutralized by the green shiny sparkles for the Christmas tree. She claimed no distress at all picturing herself in the other half of the room after each of these exercises. She even said she had fun doing the procedures.

In the year which has elapsed since this procedure was undertaken, Primula claims never once to have suffered from any allergic responses, neither hay fever, nor asthma, nor itchiness. This has been true although she has spent a lot of time in houses with cats, in dusty houses and walking outside on the grass and under trees. Was this a 'cure'? In the case of allergic responses, Felicity is inclined to believe that it was 'a cure'. The method seems quite directly to correct the error made by the brain in reacting to the allergens as if they represented danger.

The problem many people might have in accepting this as a real treatment method is likely to be that the brain would be thought to be incapable of detecting the presence of the allergen consciously. How, then, could it learn to react differentially to the presence of the allergen? The problem here is that most people assume that the brain is only capable of learning responses of which it is conscious. The error in this idea is demonstrated by observing that a cat (only) allergy responds to a cat but not to a dog, even if the person cannot detect consciously whether there is a cat or a dog in the house. The body makes the discrimination, mediated by the brain which triggers and orchestrates the immune reaction.

A Dietetic Diabetic

Of course, diabetes is a horse of a different colour. It is also said to be a chronic disease for which there is no cure. All the term 'chronic disease' means is that it does not yield to 'initial cause' analysis -- the only kind of approach to people's problems physicians are trained in or understand. That is, for medicine it is 'chronic' and has no cure. Fortunately, these

days we are not restricted to medical means for treating problems. So, what physicians are unable to understand and cure, may well be cured by methods used by other disciplines. Moreover, Felicity is one of those people who, if you tell him there is no cure for something, he will not rest until he has found at least one cure. And, if there is one cure, there will almost certainly be more than one which might be found.

So, when Paula came to see Felicity saying she had diabetes, he immediately began to ruminate about how he might find a way to cure it. Of course, that wasn't why Paula had come to see him. She had accepted, as if it was fact, what she had been told by her physician, namely, that there was no cure for diabetes. What she came to see Felicity about was her stress reactivity. She had been told by her physician that the reason why she was unable to control her blood sugar, in spite of good dietary habits and energetic exercise, was because she was suffering from chronic stress. Perhaps a psychologist could help her to reduce her stress reactivity, and thus help her to control her blood sugar.

Paula pushed the right button in Felicity's soul. She spoke of the strict diet she had been given, and with which she had been complying. All of Felicity's sympathies were aroused. Some people like to taste good food. Felicity is ravenous about it. He takes the time to pass it quickly over his palate so that he can get to the next delicate morsel as soon as possible. And the thought of skipping desserts and sugary goodies is quite unacceptable to his gluttonous view of life. So he had to find some way to get Paula over her diabetic disadvantage. But how?

Her diagnosis was Diabetes II. Like her father and her grand mother, she developed her elevated blood sugar in her late fifties. She had been told that there was a strong genetic link in Diabetes II, and so she assumed that her 'disease' was an inherited one. That seemed to be an end to the question about whether or not it could be cured -- it could not. Now Felicity knew that all the genetic factor would do would be to create a pre-disposition to the development of the condition. He realized that it was possible that excessive use of sugars might potentiate the pre-disposition. But a pre-disposition to what?

Unlike Diabetes I where insufficient insulin is produced and exogenous insulin (medication) usually has to be taken, the problem in Diabetes II has more to do with the utilization of the available insulin at the level of the cells. The insulin production may be low, but there is enough present if it could be utilized to help the cells metabolize sugar. How was it that the body could not utilize its insulin?

He noted that Diabetes II, or late onset diabetes, usually starts at about the time of the involuntional period -- the time of life called the menopause in women. Now insulin is a hormone. At that time of life a lot of bodily hormones tend to become less available to the body in both genders. Moreover, the production and utilization of most hormones tend to be triggered and

facilitated by other hormones. The idea that a reduction of hormonal stimulants, to maintain the effects of other hormones, might be a relevant issue seemed justified by the observation that the other main time during which Diabetes II tends to be stimulated is during pregnancy. During pregnancy, the body's hormones undergo major changes. Felicity asked Paula to have her physician obtain assays on various blood hormones.

Although the hormone assays showed that several of her hormone levels were well below normal, her physician was unwilling to prescribe hormone supplements to see if they might have any effect on her insulin utilization. Felicity was not discouraged. Paula's body used to utilize its hormones adequately. How could it be induced to produce and utilize enough of this hormone again?

The master endocrine gland, the pituitary body, is located in the brain. That suggested that the triggering sequences for most of the endocrine system might be capable of being re-regulated habitually by the brain. For this reason, and to address to the referral request, twenty-two sessions of Quirk's stimulus conditioned autonomic response suppression (SCARS) were used. Her subjective sense of stress and anxiety declined appreciably.

But that might respond to only half of the problem. The endocrine organs are chemical factories which produce chemical hormones. It might be necessary to provide the body with some of the chemicals needed to produce the required substances. That suggested the probability that nutritional supplements might be needed. Felicity poked around in the nutritional literature.

Paula started taking 200 micrograms of chromium (replacing that with magnesium when the chromium started making her 'feel sick') which, as in many people, seemed to bring her blood sugar down somewhat and to help stabilize it. The literature suggested the use of a number of other substances (such as an amino acid, arginine, to stimulate insulin production and aid fat metabolism) which were unavailable. He did manage to locate one of these substances for her, called Vanadyl Sulfate. Like most diabetics, she was monitoring her blood sugar daily. Whenever her blood sugar started to rise, she took a couple of the Vanadyl pills. In this way, she managed to keep her blood sugar from fluctuating too greatly and only moderately above 'normal' limits. But her blood sugar level was not yet normalized.

At first Felicity was annoyed that he was unable to find out what would happen if Paula's diminished hormone production were increased by medication. Then, while listening to Paula talk about her life, something she said kept running through his mind. She noted that her sexual appetites were lower than in the past and that her sexual activity had declined to the point of virtual non-existence. It occurred to him that reduction of sexual activity might itself reduce the stimulation of at least the sex hormones. He asked whether her sexual activity could be

increased. Later, she reported that although her husband had accepted the idea of increased activity at first, the activity remained sporadic. In response to a question about how that might be corrected, she thought she might regulate it herself and increase its frequency and consistency. Within a few weeks of commencing daily self-stimulation activity she reported that her blood sugar had stabilized itself within the upper limits of the 'normal' range.

Was this a 'cure'? Felicity doesn't know. The above results having held for several months, Felicity's contact with Paula ceased and he does not know whether the effect remained. Sadly, learning about how the body works and how its conditions can best be treated is slow since most of the available research funds tend to be gobbled up by medical studies. Oh well, perhaps some day ...

Chapter 16

A Quick Look at Brain Damage

Introduction -- Impairing Impairment

This is a volume about psychotherapy. So what on earth has brain damage to do with that? The answer you might expect is that some psychotherapists try to help people 'live with' impairments resulting from their brain damage. Of course, Felicity won't do anything normal or expected -- probably intending to exercise his temperamental obstinacy. So, just for the fun of it, let's look into whatever lunacy he has in store for us now.

A Wobbly Wonder

While walking down the wide hospital corridors, Tracy staggered so much that she bumped into both walls within any stretch of ten feet. Her psychiatric diagnosis was also schizophrenia. That wasn't the problem. She was brain injured. Of course, 'organicity' (I suppose that's a city made up of organs, though it doesn't say what kind of organs) was added to the diagnosis to represent the neurological condition. The history she was able to give offered no clear indication about her past or about any injuries she might have suffered. But there was no doubt she was a 'mal-coord'. Felicity thought it might be fun to try to treat this schizophrenia with a strange

method too.

About the time that Tracy was admitted to the Behaviour Therapy Unit, Felicity happened to get lost down in the out-patient department. While trying to find his way out, he opened a door and looked into a room. The room turned out to be one of those observation rooms with a one-way screen. Sitting on a table in front of the screen was a funny-looking board on which there were 100 push-buttons arranged in 10 rows by 10 columns. There was a wire from the board to a twenty-pen pen-recorder. Felicity's sharp mind needed only ten minutes of cocked-headed contemplation of this contraption to deduce that it was probably an interaction recorder for group therapy -- where the observer could hold down a button, for example, in row 6 and column 3 (causing appropriate deflections in two of the pen-recorder's pens) to indicate that, for the period of time of the pens' deflections, person 6 was talking to person 3. The thing that interested Felicity most about this equipment was that it had about a half an inch of dust collected on it. It took only another five minutes of what for Felicity passes as thought, for him to figure out that the equipment had not been used for at least a short time.

So it was that when, several days later, he was interviewing his new patient, Tracy, he put her mal-coordination together with the equipment he had so recently seen and he beamed a triumphant smile toward the not-too-attentive-looking hapless lady he had just received under his tender care. After doing a few tests to document her impoverished coordination and gleaning what little information she could afford him, he dismissed her back to the Unit and hurried off to try to find the out-patient department again. By chance, he found it. By chance also, he found someone there who looked about as lost as he was, asked this person (probably a patient) if he could borrow the interaction-recording device and, receiving the person's permission to take anything he wanted, he scooped up the equipment and ran back to his office. Once there, he locked the door, dusted off his wonderful new stolen property, and hid it under his desk. The days passed and he was unable to discern any posse out to catch the miscreant. So, looking as though he was doing something completely normal, he secreted his ill-gotten gains under his arm and ran it up to his nurse's room.

He abandoned it there so it would look as though she had stolen it if anybody came looking for it. The next day, he purloined his family's metronome on the way to work and added it to the pile to complete the equipment that would be needed for Tracy's treatment. The nurse was a much nicer person than Felicity had any right to expect. She accepted the new imposition on her time with amazing grace. Felicity asked her to sit with Tracy for two half-hour periods each day, morning and afternoon, to help Tracy with the task he wanted her to do. At first, the metronome was to be set at a very slow rate. It was to be

speeded up slowly at each new session only if Tracy was able to keep time with it fairly accurately. Tracy's task was to push on just one of the buttons in time with the metronome and, as if it might be a reward, to watch the deflections of the associated pair of pens on the pen-recorder. She would be able to see how evenly she timed the pushing of the key, and both the nurse and Felicity would be able to evaluate later how she was doing by looking at the lengths of the lines between pen deflections on the recorder's paper tape.

The treatment began, and Felicity kept track of how Tracy was doing by looking over the paper tape after each session. He could see both the regularity of Tracy's button pushing, its accuracy (from the pens which deflected -- showing which button had been pressed), and the speed of the tapping she was doing (from the distance between pen deflections). As soon as she was doing as well as he thought she should, he asked the nurse to get her to push two side-by-side buttons, alternating back-and-forth between them, starting again at a slow beat from the metronome.

Tracy was about as clumsy as she should have been at the beginning of this task, but she slowly improved and she improved all over again at each new setting of the metronome. When she had mastered an even and rapid tapping between the two buttons, Felicity asked the nurse to get her to tap around a triangle of three buttons, again starting at a slow beat of the metronome. The nurse became a little edgy at this point, remarking that she felt a bit like the person beating the drum to set the rowing rate for the slaves in a Spanish galleon. Nevertheless, she did continue with the task.

As it turned out, it seems that the triangular motion afforded the level of complexity needed by Tracy's brain. As she began to master this intricate three-button manoeuvre, Tracy's overall coordination began to improve. She started walking the halls on legs about as steady as those of a person mildly drunk. She could help a little in combing her own hair. Her speech became less slurred. She had much less trouble finding her words in conversation. And she was able to eat with the rest of the ladies on the Unit, since she became almost accurate in transporting food to her mouth most of the time.

Finally, she satisfied Felicity that she had mastered the triangular movement at a reasonable rate of speed. By this time, her gait no longer looked at all drunk, she was eating with some delicacy, she was combing her own hair with modest success, and she was even seen to clap her hands just like a normal person in response to some entertainment she was watching. She seemed like any ordinary person. However, Felicity had learned to doubt his own judgement about people's normalcy. The question in his mind was whether her schizophrenic symptoms were now more clearly visible, being less masked by her 'organic' mal-coordination.

She was presented at conference at Felicity's request. Those attending the conference were asked to determine the

symptoms most needing treatment at this time. The conference concluded that she had recovered from her schizophrenic illness and her 'organicity' and that she could be discharged. While sharing farewells with her when she was leaving the hospital, Felicity felt robbed of the opportunity to treat her schizophrenia. But she didn't seem to share his disappointment. Felicity could never understand people. Follow-up interviews were held over a period of only six months since she planned to move out of the vicinity. However, during that time she remained well-coordinated and appeared to function adequately without medication or continuing psychotherapy. Did Tracy recover? And, if she did, how? Was she putting on an act? Only a person living in some remote place can answer these questions, and perhaps she doesn't know either.

An Uncertain Certainty

Trina was a girl in her mid-teens who had been blind from birth. Her parents brought her to see Felicity because, as they put it, 'she was afraid of the darkness in which she lived'. Felicity had to meet this girl. "How," he thought, "can a person fear the dark when it is the only thing she has ever known?" His question was answered as soon as he saw Trina. She was markedly uncoordinated, presumably related to cerebral palsy (CP).

A blind person has to organize the world in which he/she lives by organizing her movements (kinaesthetic muscle sensations) and her contacts (tactile sensations) in and with it. Trina's lurching and poorly coordinated actions would necessarily create highly unpredictable contacts with the things around her and thus an image of unpredictable relationships among those things in space. The result would have to be a high level of uncertainty and thus ambiguousness in her world. And ambiguity is the universal source of fear -- everybody experiences fear in ambiguous situations.

Felicity did not know what he could do to help her to feel less anxious since his methods used visual images. But he thought he might be able to diminish the spasticity of her movements. The hypothesis he had was that irritability of her brain (see later) might account for her spastic movements. If that were true, then reducing the brain's irritability might correct the spasticity of her movements. She might then be able to organize her world better by means of movement and touch, and the fear of 'her darkness' should subside. Actually, Felicity had tried, with some success, to reduce the spastic movements interfering with Tom's life -- another CP patient Felicity had treated a year or so earlier.

Sterman's biofeedback treatment method, which had been used with Chester, was started with Trina. Two EEG electrodes were attached near the C3-C4 sites on her scalp. Then, every time any sensorimotor rhythm (SMR) was recorded in the EEG, a whistling sound was turned on automatically, and it lasted as long as there

was SMR activity being recorded from the sites. There were about ten half-hour sessions, during which Felicity observed some learned increase in the amount of SMR activity in Trina's EEG.

After about the tenth session, Trina reported some strange sensations. Her mother took her to her physician. He examined her and declared to them that Trina could now 'see' -- that she had 20/200 vision (meaning that she could see at 20 feet what the normal person can see at 200 feet). Everyone was shocked at this unexpected development. But the expected joyous consequences were not to be. Indeed, it looked as though this silver lining was little more than a cloud.

Trina had been told she could see. Therefore, she concluded, it was no longer necessary for her attend the school for the blind. But she could not see. Her eyes, never having been fixated by light, roamed randomly around in their sockets. It is true that, as they passed any particular patch or shape of colour around her, she could distinguish the patch of colour -- as different from another patch of a different colour or shape. But her eyes had not imprinted the skills of fixation on an object, tracking an object, focusing on an object or even accommodating to the amount of light -- skills learned in the first weeks of life. And now, not having had these skills imprinted at the early 'easy' age, they would be hard, if not impossible, to learn at this age.

Moreover, if Trina had been fearful of the darkness in which she lived before, she was now even more fearful of Felicity who had done this thing to her. She would not continue to visit Felicity to see if her eyes could be trained to perform their normal functions -- which would permit her not only to have vision, but also to see. And she was in her mid-teens, an age at which young girls tend to begin to become independent of their mothers. She only felt a more intense need to rely on her mother, thus increasing her sense of inner conflict.

All Felicity could do under the circumstances was to feel a great sense of remorse for his part in creating the new distress this young lady was experiencing, and to instruct her mother in methods by which to train her daughter's eyes to serve her in the task of seeing. Since there was no further contact with the family, Felicity has remained remorseful for his part in creating fear in her but, hopefully, wiser.

This story can hardly be left without some kind of an explanation. Is it intended to imply that some magic or a miracle occurred? It is not. Although the following 'explanation' can hardly be stated as having established validity, it does provide a kind of plausible understanding of the events described.

First, some definitions are needed. Focal epilepsy refers to epilepsy affecting a specific area or group of nerves in the brain. Non-focal or general epilepsy refers to epilepsy affecting a wider area or a large number of nerves in the brain.

Status epilepticus refers to a fairly constant state of epileptic discharge or of 'short-circuiting' in the brain. It is possible that a general form of status epilepticus might be occurring in Trina's brain as a result of the widespread nature of her CP symptoms or, say, a birth injury. This could well be initiated from a focal discharge affecting a specific set of nerve tracts, such as those leading to the visual cortex from the eye. This, in turn, might continuously interfere with the transmission of nerve impulses, such as retinal impulses, thus effectively preventing vision. This might happen, for example, if the foetus came equipped, or developed, weak access to neural inhibition for at least that specific area. This might be one way to account for blindness in some people whose eyes and optic nerves are intact, but who are said to suffer from 'nerve blindness'.

If this explanation is valid, then trained increase in sensorimotor rhythm (SMR) in the EEG might result in an increased access to neural inhibition throughout the brain. This, in turn, might prevent the uncoordinated brain activity underlying the CP symptoms. At least, that was the idea Felicity had in starting out to treat the CP symptoms with EEG-SMR training. What may have happened before the desired effect was achieved, however, is that the threshold amount of neural inhibition, required to prevent the focal epileptic activity on the optic tract, could have become available to block the irritative interference with visual tract transmission, so that vision was no longer prevented. If this latter effect were to be achieved, vision might develop, even if for the first time.

It will be noticed that the above story is replete with 'ifs'. That was intentional. It is rather hard to verify exactly what is going on in the brain in its moment-to-moment functioning. Since its functioning is mainly comprised of invisible electrical activities which, unlike engineered electrical circuits, cannot be controlled to observe what happens under varied conditions, it is hard to specify exactly what is taking place at any given moment. The only way yet available to discover what might be going on within the brain is to find ways to control the stimuli going in through the sensory tracts and to observe the effects on the system in the resulting behaviour. The abbreviated interval of time available in Trina's case, along with the occurrence of an unpredicted event (vision), prevented any effective test of the above hypotheses. How's that for science fiction!?

A Magnificent Magnification

Terry was seen at a hospital. He was referred for a psychological assessment to measure his degree of impairment and disability. Several years prior to this contact, he had been in a serious traffic accident. His skull had been crushed in the impact and the neurosurgeons had cut out some of his damaged brain and had inserted a steel plate to replace the crushed

section of the skull. When he appeared at Felicity's office, he was limping heavily with his right leg, and his right arm hung limply at his side with the wrist and fingers bent slightly inwards. His conversation was slow and laboured since it was hard for him to find the words he wanted to use. He could not read any more, at least not well enough to do any questionnaire tests. He wrote in a clumsy way with his left hand, but he made so many spelling mistakes that what he wrote was hard to understand. There was only rather patchy sensation from the right side of his body. And he was subject to frequent grand mal (losing consciousness) and petit mal (fleeting sensory or motor events) seizures. He was clearly putting out massive efforts to continue to function at all.

Terry's brain was damaged beyond repair. He was suffering a severe loss of function as well as periodic debilitation from his epileptic seizures. Felicity wondered why it had been necessary for Terry to be referred to him for the assessment. Dutifully, he undertook some neuropsychological tests with Terry to quantify the impairments and disabilities. Then he phoned the referring physician to provide a preliminary report and to inquire about the reason for the referral -- which would help determine how detailed his report should be. The physician said that he had heard about Felicity and he was hoping that something in Felicity's bag of tricks might help this unfortunate young man. This was an unexpected turn of events and, taken completely off guard, Felicity agreed to see what he could do.

Lashley's Mass Action Hypothesis flitted through Felicity's mind creating a sense of despair. If the amount of impairment of functioning was indeed proportionate to the amount of damaged brain tissue, the massive loss of brain tissue should imply permanent and massive loss of functioning. Certainly, Lashley's hypothesis was accepted by psychologists and, besides, who could doubt such an obviously correct hypothesis. Felicity's 'mind' focused more and more on the word 'hypothesis' (which means 'guess'), and he began to run over in his mind the contradictory evidence which he had encountered. Lots of patients exhibited huge amounts of impairment of functioning with absolutely no 'visible' brain tissue damage -- this was true in many epileptic cases, for example. Also, there were lots of patients who had large parts of their brains removed surgically without any particularly apparent losses of functioning. Perhaps a more accurate reformulation of the Mass Action Hypothesis might be that loss of functioning is proportional to the amount of existing brain tissue whose functions are interfered with by continuing irritative (that is, epileptic) brain tissue. That formulation appealed more to Felicity than the earlier one. At least it might justify trying to do something for Terry.

As in Chester's case, Felicity started a biofeedback programme with Terry, using Sterman's method to train increase in SMR, in order to increase the availability of neural inhibition

to his brain. Two EEG electrodes were attached to Terry's scalp near the C3-C4 sites -- on the top of the head, about equidistant from each other and from the earlobes. The feedback EEG unit was set to recognize and respond with a whistling sound for all recorded occurrences of sensorimotor rhythm (SMR) activity -- electrical activity from this brain site occurring at between 12 and 14 cycles per second and between 10 and 30 microvolts. The purpose of this whistling sound was to provide a 'reward' for Terry's brain for producing the desired SMR activity. SMR is an EEG activity representing neural inhibition in the brain. Neural inhibition is one means by which the brain functionally insulates itself to prevent short-circuiting or epileptic or irritative activity from occurring. It was thought that if his brain could learn to increase its production of SMR, it might prevent both his epileptic seizures and any irritative electrical activity which might be interfering with the functioning of undamaged parts of his brain.

Meanwhile, galvanic skin resistance (GSR) electrodes were also attached to Terry's right (that's right, right) hand to measure changes in the amount of sweat of his hand. He was shown pictorial slides which were changed for each successive 1,000 ohms of increase in his GSR level. Quirk's stimulus conditioned autonomic response suppression (SCARS) method, which was described in Sally's case, was used here to train Terry to limit any intense autonomic-anxiety reactions. The purpose of this treatment was both to desensitize any traumatically-conditioned anxiety which might have been left over from the traffic accident, and to prevent the possibility that any autonomic storms might occur and erase any trained increase in SMR production which might be achieved. The EEG-SMR method and the SCARS method were used at the same time.

Terry learned rather slowly to increase both his SMR production and his GSR baseline. But he hung in there. At first he reported a declining rate of epileptic seizures. Then his mood started to lift. As treatment continued, his limp pretty well vanished, and Felicity noticed that he was using his right hand to do some simple tasks. Quite suddenly he found he could read as he had before the accident. Even more, his spelling suddenly improved. Then he began to write with his right hand so that, by the end of the treatment, he was writing about as smoothly with his right hand as he had learned to write with his left.

What brought about these changes? Again, who knows? It would be nice to think that the treatment served as a test of the revision of the Mass Action Hypothesis which was offered. However, it is possible that the damage to Terry's brain did not account for the impairments of his functioning or for his epilepsy. Although this seems unlikely, it is possible that his epilepsy and his impairments were due to functional (psychological) ways of dealing with anxiety traumatically

conditioned in the accident. If this had been true, then the use of anxiety desensitization (with SCARS) may have corrected the anxiety and thus removed the symptoms created by the anxiety. And, of course, this is mentioned really only to suggest that there may have been any number of other unknown reasons why this simple pair of procedures were followed by such radical changes in Terry's functioning and behaviour.

Still, in terms of the conventions of science, if a treatment is introduced under a given hypothesis, and if the treatment does as it was hypothesized to do, the hypothesis on the basis of which the treatment was undertaken is afforded increased credibility or validity over other possible hypotheses. It may just be that some symptomatic consequences (mal-functioning or impairment of functioning) of some, even irreversible, brain damage may be modifiable or reversible given appropriate treatment procedures. Still, who knows what happened or, for that matter, what is possible? Felicity doesn't. Perhaps due to his normally semi-conscious state, Felicity believes in the unconscious mind which, however, he designates as the, almost limitless, 'realm of the possible'.