

A CASE STUDY.

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Up to the present the investigations carried out at the Burden Neurological Institute into the effect of leucotomy on the creative personality have been somewhat limited since few of our patients had shown any real evidence of a creative urge prior to the operation, and this has been a very great drawback. The use of story-telling and painting tests seemed to show certain differences between leucotomized patients and normal people which were felt to be due to an absence of creative imagination, but it was impossible to be sure that this difference was the result of the operation, or that these people had in fact ever translated their creative spirit into creative action before they became ill (1). It has been of very great interest, therefore, to watch the effect of the operation on a patient at Barnwood House, who, prior to her illness, gave tangible evidence of this spirit in the shape of poems, prose and other dramatic work.

X— is a young woman, aged 32, a Hungarian by birth; she was brought up very strictly, and has undoubtedly been neurotic and obsessional since adolescence and possibly even earlier. Her first breakdown occurred when she was 16, shortly after she went to live in another mid-European country. As far as can be gathered the cause of the breakdown was attributed to overwork; but there is also evidence to show that parental conflict was also a potent factor. Her father was domineering and puritanical, and strongly disapproved of women taking part in any activities outside the home, and it was very much against his wishes that she studied at high school, or went to ballet classes. She had very little freedom—at the age of 17, for instance, she was not allowed to go to the cinema, unless accompanied by both parents, and it was insisted that she sit between them throughout the performance for fear of molestation! Her mother, on the other hand, tried to restore the balance, and one suspects that she was over-lenient and arranged for the girl to undertake various activities in defiance of father, and often unknown to him. This account of the patient's history is no doubt biased, as it was only possible to obtain information from mother and patient, but undoubtedly much conflict existed, and at the present time the parents are separated.

X— is described by her mother as having been a very shy, highly imaginative child, who never seemed to want a lot of friends. X— herself says that as far back as she can remember she wanted to write books and plays, and that as a child she often composed poetry; she thought her desire to write was partly the wish to do as other members of her family had done, especially her father and cousin. I think it must be emphasized that her urge to write was probably motivated by defiance of, and identification with, her father as well as an urge to express herself in creative work.

Since coming to England in 1938 she has written many poems, some of which have been published and broadcast, and she had already started on a book and a play, when in March, 1947, she finally became so preoccupied with her phobias and obsessions that she was unable to work any more. The following poems are example of her work:

“Du Sprachst Von Deiner Heimat.

“ Aus : Blumen fur Zdislaw.

*“ Du sprachst von deiner Heimat leise
An mich gebettet wie ein Kind
Ich lauschte der und, ernst, der Weise
Die draussen Stöhnend sang der Wind.*

*“ Die Nacht hielt sanft die dunkeln Arme
Die duftend sie auf mir gesenkt
Und wie ein Licht trug ich die warme
Rotnelke, die du mir geschenkt.”*

"Weinbergschnecke (1942)

" Das dünne Haus glanzt wie ein Ohrgehänge
Aus hellem Gold. Aus seinem Innern, sacht,
Schraubt sich die Schnecke wie aus einem Schacht
Und streckt sich, gelblich, gänzlich in die Länge.

" Die anmutvollen Fühler, zag entfacht,
Erspähen wie in Staunen das Gedrange,
Der dünnen Tannennadeln, deren Menge
Den Waldgrund polstert, tief wie eine Nacht.

" Das Kriechtier gleitet auf dem feinen Holze
Mit Sicherheit und jenem zarten Stolze,
Mit dem ein kleiner Kahn vorüberzieht . . .

" Die Sterne, die verstreuten Silberkörner,
Tanzen ihm einen Lichtkranz um die Hörner,
Den es in seiner Augen Spiegel sieht."

It seems certain that before leucotomy she did strive to express herself in creative work, and that she did in some measure achieve recognition that some of her poems were worth while. It could be said, of course, that she was driven by the urge to emulate or outdo her father quite beyond her capacity, and that her mental illness, and finally her willingness to undergo leucotomy, provided a method of escape from this powerful drive. Nevertheless, it must not be forgotten that in spite of her difficulties, and maybe in spite of a limited capacity, she did produce some work of a fairly high standard.

From March, 1947, onwards the patient gradually became more and more pre-occupied with her phobias and could not go upstairs, nor go out, nor be alone; and having reached the stage when life had become unbearable both for herself and for those around her, and having made no progress either by psychoanalysis (which she broke off on two occasions) or other treatment, she finally decided to have the operation of prefrontal leucotomy. This was performed on 16 August, 1947; the patient's recovery was uneventful and was accompanied by many of the usual post-operative sequelae; she was slow at first, stayed in her bath until the water became cold, had to be prodded to dress or move, and was incontinent occasionally during the first five weeks; with regard to this latter she first expressed no interest, but later she became conventionally "ashamed of myself"—but she showed no feeling of shame or embarrassment, and appeared to be rather amused about it. She complained of ravenous hunger, and said that at first she was so hungry that she had to rush into the dining room and start eating right away—she could never have enough to eat. After the seventh week she said she was still hungry, but her desire for food was not so compelling, and she hoped she would never feel like that again.

The tests described in the earlier paper (1) were given to this patient after the operation, unfortunately they could not be given pre-operatively, and before setting down the results of these tests I would like to quote Hutton's definition of creative activity.

" I would define creative activity as that form of activity which results in the actualization or realization of some object or event which only comes into being because the creator having first conceived it in his imagination, deliberately transforms his idea or vision into fact. The motives of such activity must be, as of course the motives of all activity are, emotional, and as such, associated with judgments of value on the part of the creator. In his imagination he conceives desirable objects or events, which had they real existence would satisfy his real needs, but which while they have only an immaterial existence in his phantasy, tend merely to tantalize and stimulate, impelling him to translate his ideas into facts. This, however, he can only do provided he has sufficient technical knowledge and practical ability, and the necessary persistence and sustained effort.

" There are therefore at least four factors involved in creative activity :

" (1) Imagination.

" (2) Emotional motives and associated judgments of value.

" (3) Technical knowledge and practical ability.

" (4) Sustained effort and persistent application."

TEST NO. 1.

Harrower-Erickson Multiple Choice Rorschach.

This graph follows quite closely the type of graph we have come to expect from our leucotomized patients, i.e. a high percentage of 9 and 10 responses indicative of poverty of association and refusal or inability to formulate anything.

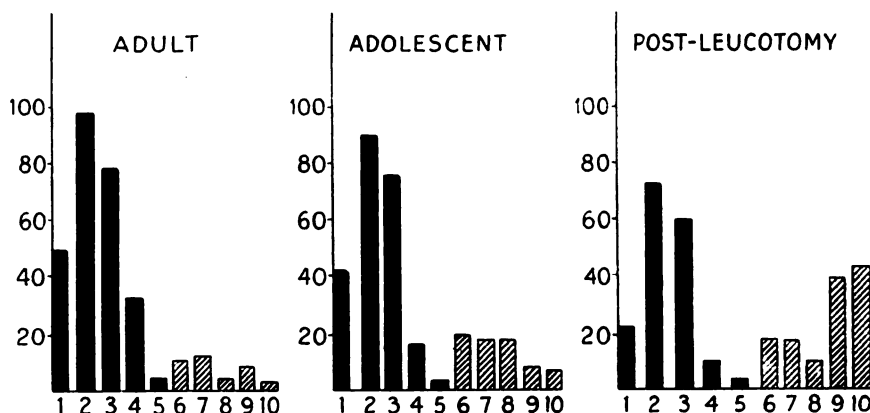


FIG. 1.—Harrower-Erickson Multiple Choice Rorschach. Group results.

TEST NO. 2.

Story Telling.

The patient is strongly urged to "make-up" a story, but the results are extremely limited, especially for one whose profession is a writer—in addition the stories are all "true."

It was also suggested to the patient that she should write around these sentences, using not English, but German, but this she declined to do, saying that language made no difference, and that she would write exactly the same in German.

(1) I was sunk in the depths of misery ; never had I felt so unhappy as I did at that moment.

" When my fiance was killed, I was sunk in the depths of misery ; never had I felt so unhappy as I did at that moment."

(2) The joy I felt at that moment is indescribable.

" When my fiance arrived unexpectedly, the joy I felt at that moment is indescribable."

(3) All right I'll tell you about the most terrifying experience I have ever had.

" All right, I'll tell you about the most terrifying experience I have ever had ; when I was a small child, the restaurant at the ' Black Sea ' caught fire. . . . My mother got terribly frightened . . . and so on . . ."

(4) There ended one of the most exciting adventures that any human being can ever have experienced.

" There ended one of the most exciting adventures that any human being can ever have experienced ; I saw them *all* fully drunk . . ."

(5) It was the funniest story I have ever heard.

" It was the funniest story I have ever heard M'selle, you have lovely eyes . . . yes . . . especially your left one . . ."

(6) You have committed one of the worst crimes that any human being could commit.

" Miss L— you have committed one of the worst crimes that any human being could commit."

(7) It was the loveliest thing that had ever come my way.

" When I first met my (late) fiance . . . it was the loveliest thing that had ever come my way."

(8) Night after night I lay awake, eating my heart out with remorse remembering what I had done.

"Night after night I lay awake, eating my heart out with remorse remembering what I had done. . . . Alas, I did, and for something which was not even . . . bad."

"It is all true."



FIG. 2.—Drawings utilising 12 straight lines and 6 curved lines. Normal group.

TEST No. 3.

Line Drawings.

Four weeks after leucotomy the patient was asked to make a drawing, using 12 straight lines and 6 curved lines. She sketched quickly a headless nude without any relation to the number of lines required. This drawing can, of course, be interpreted as a projection of her ideas concerning herself, i.e. her preoccupation with her body and her sense of loss associated with her "head." It is interesting that here she made no attempt to utilize the required number of lines.

Six weeks after leucotomy the patient was asked to do the same test—the results can be seen below, and again they are very typical of the leucotomized patient's efforts. (a) In a first attempt she says, while drawing, "I know I am

being naughty," which I interpreted as "I could do better if I liked." (b) It was then insisted that she make another effort to combine the lines and curves into a picture, and this resulted in her drawing "mountains and trees"—the lines and curves are scarcely different from (a) and there is still no evidence of any ability to integrate the discrete parts.

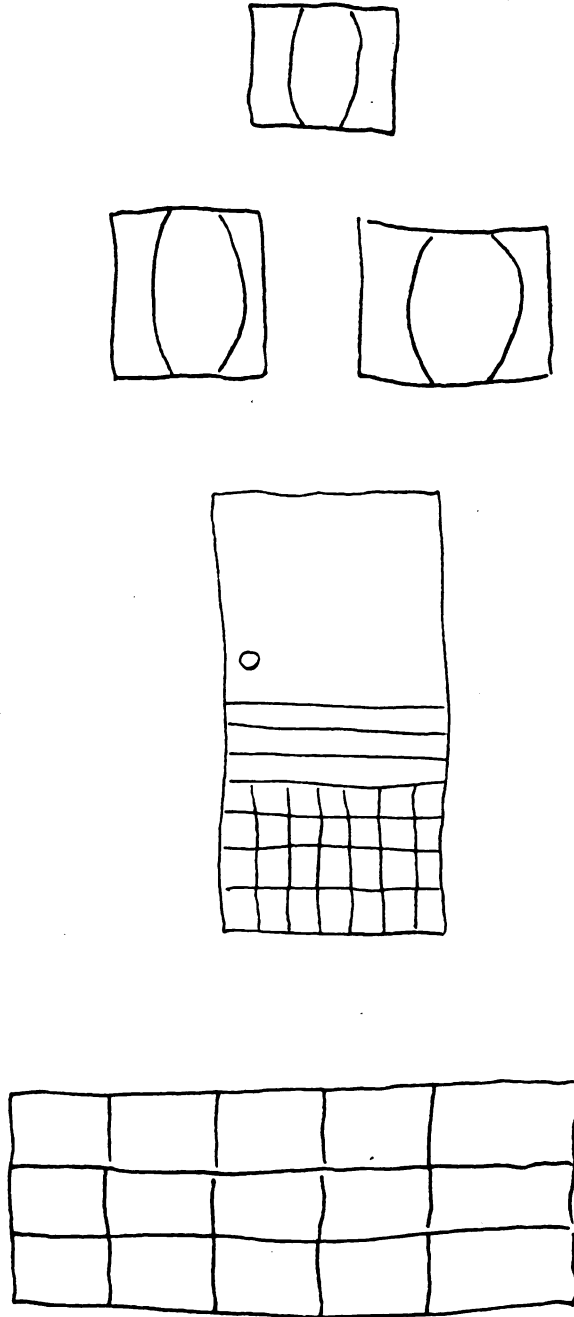


FIG. 3.—Drawings utilising 12 straight lines and 6 curved lines. Post-leucotomy group.

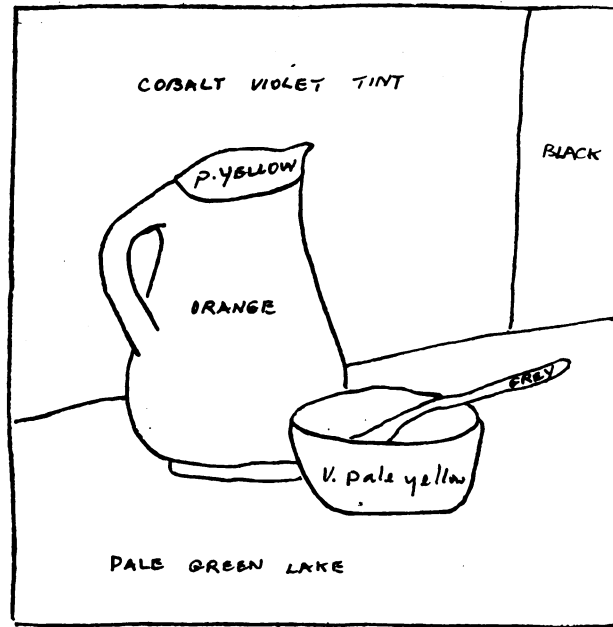


FIG. 4a.—Coloured model to be copied as exactly as possible.



FIG. 4b.—Blank model for 'improvement.'

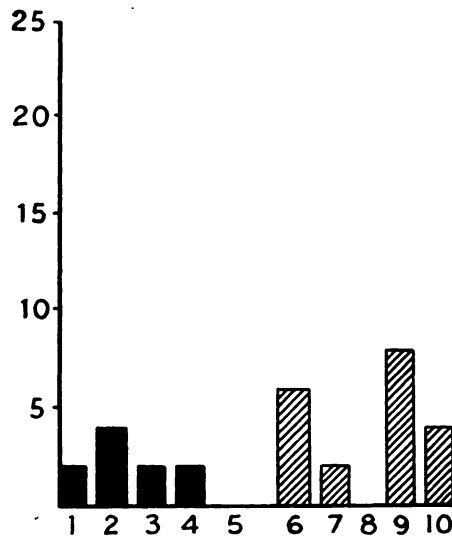
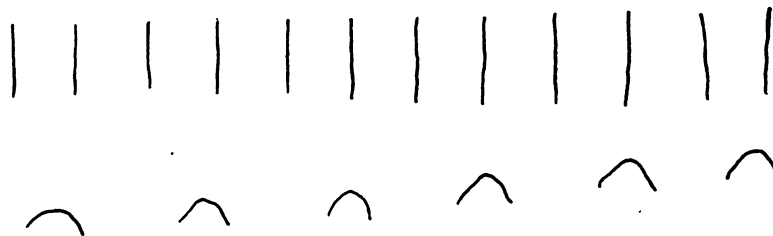


FIG. 5.—Harrower-Erickson Multiple Choice Rorschach. Post-leucotomy. Miss X.

(a)



(b)



Fig. 6.—Drawings utilising 12 straight lines and 6 curved lines. Post-leucotomy. Miss X.

TEST No. 4.

Drawing and Painting Test.

Four weeks post-leucotomy the patient was given the drawing " Jug and Bowl " to copy—this she did, enlarging the size of her reproduction considerably. Her " Improvement " to this drawing was the addition of some shading and some " stripes " to the curtain. Unlike many of our " leucotomy " paintings, this patient did not copy the painting well—she did not bother to get the exact shade of colour, nor did she trouble much about the application of the paint. Her " improvement " of the painting was again the addition of shading and the stripes to the curtain—otherwise she did not paint the picture but merely outlined the objects in the same colour as the stripes. A few faint marks were put in the background, which she said could be wallpaper, but she made no effort to complete the design.

Up to the present this leucotomy painting differs from most of the other leucotomy paintings which we have collected—there is application of shading and a complete break away from the original colour scheme. Nevertheless her " improvement " of both the drawing and painting is very limited and does not go beyond the addition of shading and striping the curtain. Incidentally she is the first of our leucotomized patients to have studied drawing and painting in adult life—though as she says, she found she was no good at it, and finally gave it up.

In addition to these tests, a full scale Rorschach Test was given on two occasions before the Rorschach Multiple Choice Test. The Rorschach showed much perseveration and limitation of ideas. Several of the Thematic Apperception Test pictures were also given the patient, and again the constriction of thought is very obvious.

It is interesting that in her responses to the Raven Projection Test the patient each time refers either to a film she has seen, a book she has read, or to herself, and to her recent activity of " painting a vase " (Test No. 4). The patient's responses to these tests are printed so that the reader may himself see the constriction of thought, poverty of association and literalness of the material.

The Raven Matrices was given on two occasions, namely 4 and 8 weeks after leucotomy—and the second occasion showed a marked improvement from a score of 29 to a score of 43, which could be considered average.

The Shipley-Hartford scale for mental deterioration showed a Conceptual Quotient of 124, which is well above any pathological level.

ADDITIONAL TESTS.

Rorschach.—Four weeks' after leucotomy.

- I. (1) Looks like an inner organ, I don't know—yes that could be the bit of a spine—is it anything?—better like this—that's all I can say.
- II. (1) Oh that—I don't know—rather funny with the red—do they all have red, I don't know—I can't think of anything—yes I think from the beginning that that looks like a woman's organ—a little—and of the red—couldn't be a little bit like menstruation—I don't like the word.
- III. (1) Oh, this is rather funny—this ink too, I've got no imagination any more since the operation. Like two people here facing each other—what the red is I don't know—I feel tired already—these look like feet—I didn't use to feel tired—these two people are cut off in the middle—that's all I can say I don't know what these red are—these are 2 men exactly the same I don't like men they are old.
- IV. (1) I don't like it I got used to the red now and suddenly all so black—first of all so black, and then I get used to 3 colours.
- V. (1) That's not nice either—just a pair of the other thing—I'm afraid that's all I have to say.
- VI. (1) Well they all remind me of anatomy, different organs—kidneys, I always say kidneys. I like to eat them—very easy, sexual intercourse—I suppose people think of other things—I don't know what to do with these things.
- VII. (1) This is rather funny, not nice, I don't know what it looks like.

- VIII. (1) Gosh, that has rather a lot of colours, rather nice, a pair of animals, and that I don't know, and that I don't know, is it always my imagination that reminds me of sexual things or only me? they are mice—ugh—what are these animals doing here?—could be a child—then I turned it this way and it looked like mice.
- IX. (1) I wanted to laugh, I don't know why consciously silly stuff I think—but possibly I'm right—I said sexual organs over most of them.
- X. (1) Oh that's complicated, are these crabs here, this could be dogs, two animals here, don't know what they are called—if I had seen these things before I could have told you lots of things, perhaps I'm lazy, I don't know, each of them could be likened to an animal—snakes there.

ADDITIONAL TESTS.

Raven Projection.—6 weeks after leucotomy.

The Road.—To Hell—to the Infernal—where I want to go—much more fun there than in Heaven. It's very hot—not burning hot—summer frock heat—a lot of dancing—I'm thinking of a film I saw many years ago—beautiful girls dancing around—things out of Greek mythology (what happens there). You don't need to worry very much (what like about it) the feeling of leisure—I'm tired of being with good people—you can relax—no one is going to tell you to get out of bed—I shall stay in bed for the first few days after getting out of here.

(Dislike about Hell?) Might be too hot.

(What do about it.) Go and have a cold shower in a beautiful garden on the outside of Hell.

The Box.—First thing I thought of—the bride—my Mother read the story to me some time—there's something terrible about this box—why made—well it was made for things not for brides—winter clothes. Just to puts lots of things in historical things—it never occurred to me that it could irritate the owner—perhaps I am the owner—I think of the bride again—perhaps he couldn't open it—anything might happen—I don't know who the owner is—he wouldn't be irritated by the box.

The Girl.—(What imagine she is doing.) She's painting a vase (patient had done painting test previous week)—I notice her lashes, long lashes (what interested in.) She looks rather the school type—might be a photo of myself looking like that. Her eyes again attract attention—she's very scholastic. (what thinking) How can I get out of my school uniform and be less schoolish (what is her real work) She's sportish I think—I've never been sportish. (patient sits facing a tennis racquet and balls.) She seems the type who likes precise things—unartistic, practical, quick, lively—just the type I am not. (what dislike) I'm afraid I can't think of anything—she likes what she's doing—she's got lovely lashes—she's not artistic. (Who will see her work) her room or class? if in her room—nobody—or the maid. coming in with her coffee—I've just finished coffee when you came—or the tutor. (what will they think) that she will bother and when she starts will go on till she has finished—will do her best—not like me—she's a good worker. (what will she think) that she tried her best—that it could be better—but she's satisfied—she might really write . . . (what sort of people does she like) sporty people—practical, lively, different from her (what company does she prefer) men's—(what sort of company dislike) dreamy people . . . she looks so practical that I can't take her out of this . . . (what annoys her and makes her angry) contradiction—I don't like it—nobody likes it (in what way) if she does this or that people telling her that she's done too much, or not enough, or something . . . I've had so much of it. (what does she do when angry) then she contradicts even more—she doesn't keep it in as I would—she's not a neurotic—she plays a game, and forgets it. (what frightens her) Nothing—she's not a neurotic—well—a landmine perhaps, (when she gets tired, what worries her) she's not worried—she is lying down and resting. (She sees or hears something funny) an army joke (what sort) silly . . . not daring . . . (what does she enjoy most) games, dancing, ballroom dancing, men (She dreams she gets what she wants)—long sports socks (given a £1,000) I don't know what she would do, she's so different from me . . . or she is what I would like to be . . . a part of me looked like this at 15 . . . it's died out now . . . she'd start a business, sport or needlework, she would

do something with it . . . I would dream . . . she might be all that I am not (wakes and finds she's been dreaming) This girl doesn't dream, does she? . . . doesn't worry too much about it . . . says, I've dreamt, that's all (Is she satisfied with things as they are) As much as a person like that can be . . . takes things for granted . . . I feel life is terribly senseless (aim) first to finish her girl's game—her real life's aim is to get something useful and to do it well . . . she sets about it quickly and energetically—she will make a good nurse or tutor. (What do you like about the person you have described) her lashes—and she's so determined . . . if she ordered herself to get out of bed she would . . . not like me. I feel so lost and that I shall fall out of bedroom window (patient has lately moved upstairs by herself) (what dislike about her) She's too broad in the back a bit heavy in the chest . . . but rather nice . . . not the type who would ask what sense there was in life . . . deep down I wanted to die after the operation . . . I hoped perhaps it was more serious than it really was . . . I also want a man that I am in love with. . . . I've a nice boy-friend . . . but I'm not in love with him . . . if little things were different, perhaps, for instance, I was a little hurt. . . . he did not like the way I kiss . . . he told me very nicely . . . (what do you think of your description) must repeat . . . she is all that I am not . . . everything opposite to what I am.

So far, then, the material gained from the various tests does show us a great limitation in imaginative thought. What is more interesting, however, is the patient's own spontaneous ideas concerning this aspect of her personality. The following are extracts from her conversation, and these suggest that she feels a sense of loss :

- 3 weeks after leucotomy . (What about your writing?) " Later on at present since the operation, I feel I've no imagination, but I am sure it will come back again."
- 4 weeks after leucotomy . " I've no imagination any more since the operation—
during Rorschach test if I had seen these things before I could have told you a lot of things—perhaps I am lazy—I don't know."
" Is it always my imagination that I see sexual things, or is it only me."
- Passing the hall table on . " They can't be for me of course, because I'm no
which are a pile of longer here (patient had moved to another part of
letters hospital) " I don't get many letters now, at one time I used to have a lot of letters " (Do you write many now?) " No—and if I do—2 pages, why and I am stuck—but never mind, it will come back—or even if it doesn't it won't matter."
- Apropos of the story tell- . " In everything I have to create I have to be left quite
ing test free. I must not be forced in any way—at school I often found it difficult to write essays." (What about now—how do you feel about your writing?) " It might take some time—I might change my style—I think it will come—in my worst times sometimes I used to write some things—it was always a refuge—I turned very much to writing when the boy I loved was killed . . . I shall work more . . . at something heavier—so that I can reach one good piece of work, although Rilke, who is the poet for me, never reached Shakespeare or Goethe. I have lived so much in my work, that if I could write something really good, which I think good, I would think, this is what I have lived for. I feel a little more friendly towards work now—I've felt a little more these days. Why I really thought I wouldn't be able to work is that I connect that
- 4 weeks after leucotomy

- electric feeling with my emotions--and then if I don't get that feeling any more . . . but that is perhaps a stupid idea. . . .
- 5 weeks after leucotomy . " Everything is different—before I had 2 fears—one was the real fear of being alone and going upstairs, and the other the fear of being afraid and making a fool of myself—now I am remembering, the fear rather than feeling it."
- (How do you feel since your operation ?)
- After walking through the gardens of the hospital " I feel pleased that to-day I made the journey alone—though when I passed the gate leading to the open road I felt a little bit strange." (One of her phobias that of throwing herself under a bus.) " But it soon passed and I did not get that ' electric shock ' (What do you mean ?) " The sort of feeling which I used to get starting in my head and going all over my body—now I wonder if I did not experience that ' electric shock ' whether I shall ever feel the same about my creative work—I wonder if something has been lost—I would hate to think so—it would not be worth it—I was told beforehand about a violinist who had the operation and who is now playing better than she ever did—well, I understand that of course, if she is less tense she can let herself go more, but it is not quite the same as composing, which is something which you make up yourself."
- 6 weeks after leucotomy
- 9 weeks after leucotomy . " I'm rather better with reading now, but it's my lack of feeling about my work that does worry me occasionally—*when* I remember it."
- Apropos of leisure
- Apropos of drink . " I react quickly to alcohol—I'm afraid of drink—I'm afraid to let myself go—I don't know how I'll be now, but I don't really like it. It's unaesthetic to be drunk."
- Apropos of the operation " Afterwards I took in little details of the window, if flowers or patterns on the eiderdown or screen I would count them—follow the lines—I was quite-obsessed by it, but it didn't worry me and I asked myself—what kind of a game are you playing."
- Apropos of dreams . " I had some rather bad nights, and then for two or three nights I kept waking up after dreams—but I didn't get the same feeling."
- 9 weeks after leucotomy
- Apropos of work . " I forget sometimes that I work—but now it means nothing to me—very far away as if it meant nothing to me."
- Apropos of work . " I wonder if a man like Rilke—if he had had an operation like I have—would have gone on writing—or whether the finer emotions would have gone—I don't think the operation of appendix gave me the same feeling—*really—I have* no feelings—I did not realize I was so far away from life then as I do now—as if in a cloud." (Do you feel far away now ?) " I am slowly coming back now. Letters from my boy now. When I read them they left me cold—now, when I read them again, I can't think why they left me cold." (Do you feel more about them now ?) " Well it was more the realization that he had taken the trouble to do it—he is not really a letter writer."
- 9 weeks after leucotomy . " I hope I am still going to be an artist—but perhaps if I haven't the wish to do it, it won't be such a loss—it's better that it went since March and not with the operation." (Patient had said before that she felt something towards her work even in her worst times.)
- 9 weeks after leucotomy " I would still like to find out what had caused me

this relapse in March." (Do you find it difficult to write?) "I did find it hard to write, and I know it did not come without effort, but even great writers have experienced that—Thomas Mann, the writer, had great difficulty in writing, yet he wrote a lot."

I think it is possible that we may have underestimated the cost of creative work to this personality. Nevertheless, assuming that this is great, no obsession phobia or physical illness prevented her from producing *some* work of a fairly high standard and it remains to be seen whether leucotomy is also an "also ran."

SUMMARY.

Following observations made on previously leucotomized patients who seemed to be lacking in creative ability, a detailed study has been made of a patient who, prior to the operation, had shown real evidence of creativity.

1. The study is so far limited to a period of nine weeks after leucotomy.
2. Evidence so far gathered suggests that:
 1. Creative imagination is much reduced and almost non-existent.
 2. Emotional motives and associated judgments of value are not apparent.
 3. There is some decrease in effort and application.

The salient feature of this study is the patient's intellectual appreciation of these deficiencies.

CONCLUSION.

Up to the present it would seem that the effect of leucotomy has been to eliminate the "creative spirit" from this personality. It remains to be seen whether this is one of the lasting effects of the operation, or whether it is merely a temporary effacement, and whether in time, a spontaneous resumption of creative activity will take place, and if so, on what level.

Thanks are due to Dr. M. Harrower for permission to use her Expanded Multiple Choice Rorschach Test.