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8-2

28 July 1955

MEMORANDUM FOR: THE RECORD

SUBJECT: ADDENDUM TO SUBPROJECTS 8 and 10

1. The purpose of this addendum is to set forth the mutual administrative responsibilities of the contractor and sponsor.

2. The above subprojects represent the research program of [redacted] located at the [redacted] Boston, Massachusetts, covering the period of 9 June 1953 through 15 September 1955.

3. The [redacted] has requested the [redacted] Hospital to submit to them a summary accounting of monies received from the Fund. Also, they requested the return of any unexpended funds received under a grant from the Fund.

4. Title to any permanent equipment purchased by funds granted the Hospital shall be retained by the Hospital in lieu of higher overhead rates.

5. It was mutually agreed that documentation and accounting for travel expenses which are reimbursable by the [redacted] Hospital shall conform with the accepted practices of that Institution.

6. It was agreed that technical reports reflecting the progress of the research program shall be submitted at mutually acceptable intervals.

*Sidney Gottlieb*

SIDNEY GOTTLIEB  
Chief

TSS/Chemical Division

APPROVED:

[redacted signature]  
Chief, TSS

Distribution:  
Orig. & 2 - TSS/CD

Proj. 8-3  
2/11/54

TSS-771-94

25 September 1953

1 1

TSS/CD

4-2524-10

A

Room 2409 - Qtrs. Eye

155-7

B

1 No. 260

TRICHLORO-TERT-BUTYL ALCOHOL

MP76-77<sup>2</sup>

100 grams

1.50

Order From:

B

Note:

Order sent to <sup>B</sup> should contain  
the following statement: "This  
chemical will not be used for drug  
purposes or sold by us for such use."

XXXXXXXXXX NOTHING FOLLOWS XXXXXXXXXXXX

8-4

CERTIFICATE

March 2, 1954

This is to certify that I have today received  
Cashier's check No. M138328 of the [REDACTED]  
[REDACTED] in the amount of \$26,333.33.

B

[REDACTED]  
M.D.

C

March 2, 1954

This is to certify that I have today received  
Cashier's check No. M138329 of the [REDACTED]  
[REDACTED] in the amount of \$526.67.

B

[REDACTED]  
M.D.

C

8-5

MEMORANDUM RECEIPT

#2

FEB 18 1954

DATE

TO:

FROM:

SUBJECT:

I hereby acknowledge receipt of the following:

CHECK # 4138328 IN THE AMOUNT OF \$26333.33  
RECEIVED.

FEB 18 1954

CHECK # 4138329 IN THE AMOUNT OF \$32667  
RECEIVED.

FEB 18 1954

Please return \_\_\_\_\_ signed copy(ies) of this receipt.

[Redacted Signature]

A

SIGNATURE OF RECIPIENT

18 Feb 54

DATE RECEIVED

To \_\_\_\_\_  
FORM NO. 36-66  
MAR 1949

8-6

5 February 1954

MEMORANDUM FOR: CHIEF, FINANCE DIVISION  
 VIA: TSS/Budget Officer  
 SUBJECT: Invoice No. 2, Subproject 3, Project MKULTRA

Invoice No. 2 for Subproject 3 of Project MKULTRA is attached. It is requested that payment be made by two checks in the amounts of \$26,333.33 and \$526.67 made out to [REDACTED] 26,800.00  
 The checks should be sent to Chief, CD/TSS, through TSS/Budget Officer.

SIDNEY GOTTLIEB  
 Chief  
 Chemical Division, TSS

Attachments:  
 Invoice  
 Certifications

Distribution:  
 Addressee - Orig. & 1  
 Comptroller - 1  
 G Exec. Sec'y. [REDACTED] - 1  
 TSS/Budget - 1  
 TSS/Registry - 1  
 TSS/CD - 2

CHECK # 1138328 IN THE AMOUNT OF \$ 26,333.33  
 RECEIVED

FEB 18 1954

A [REDACTED]  
 CHECK # 1138329 IN THE AMOUNT OF \$ 526.67  
 RECEIVED

A [REDACTED] FEB 18 1954

[REDACTED]

CERTIFICATIONS

(1) "It is hereby certified that this is Invoice No. 2 applying to subproject 3 of Project MULLERA, that technical performance by [redacted] is satisfactory, that the work is being accomplished in accordance with the mutual agreement reached with [redacted] that this bill is just and correct and that payment thereof has not yet been made.

C  
C

Date: \_\_\_\_\_

SIMEX COFFINS  
Chief, CD/TSS

(2) "It is hereby certified that this invoice applies to subproject 8 under Project MULLERA which was duly approved and that the project is being carried out in accordance with the DO/P Memorandum to DCI dated 3 April 1953 and the DCI memorandum to DD/A dated 13 April 1953. Payment is authorized and requested.

Date: \_\_\_\_\_

FEB 8 1954

JOHN W. ...  
Vice ...

[redacted]  
Research Director

A

(3) "It is hereby certified that the scope of the program of subproject 6 of Project MULLERA has been approved.

Date: \_\_\_\_\_

[redacted]  
Exec. Sec'y.

A  
G

I CERTIFY THAT FUNDS ARE AVAILABLE:

OBIGATION REFERENCE NO. 02 44 2

CHARGE TO ALLOWMENT NO. 3-2502-10

AUTHORIZING OFFICER

[redacted]



8-6

Feb. 1, 1954

C  
B



B  
B

Payment due for grant to  
Service charge of 2% for



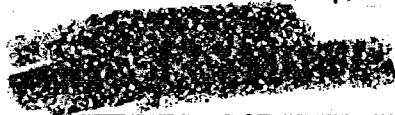
.....\$26,333.33  
.....~~526.67~~  
TOTAL.....\$26,860.00

C



Inv. #2

8-7



August 31, 1953

This is to certify that I have today received  
Cashier's check No. M133785 of the [REDACTED]  
[REDACTED] in the amount of \$13,166.67.

-B



-C

m.D.



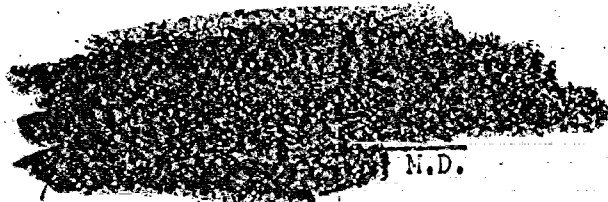
8-8



August 31, 1953

This is to certify that today I have received  
Cashier's check No. M133786 of the [REDACTED]  
[REDACTED] in the amount of \$263.33.

B



C

N.D.



8-9

MEMORANDUM RECEIPT

28 August 1953  
DATE

TO: [Redacted] C

FROM: Budget Office, TSS

SUBJECT: Two checks [Redacted]

I hereby acknowledge receipt of the following:

Check # M133786 in the amount of \$263.33 and check # M133785 in the amount of \$13,166.67 as payment for invoice # 1, Subproject 8 Project MKULTRA.

Please return \_\_\_\_\_ signed copy(ies) of this receipt

[Redacted] C  
SIGNATURE OF RECIPIENT  
DATE RECEIVED

To \_\_\_\_\_  
FORM NO. 36-66  
MAR 1949

MEMORANDUM RECEIPT

28 August 1953  
DATE

TO: [Redacted] C

FROM: Budget Office, TSS

SUBJECT: Two checks

I hereby acknowledge receipt of the following:

Check # M133786 in the amount of \$263.33 and check # M133785 in the amount of \$13,166.67 as payment for invoice # 1, Subproject 8 Project MKULTRA.

Please return \_\_\_\_\_ signed copy(ies) of this receipt

[Redacted] C  
SIGNATURE OF RECIPIENT  
DATE RECEIVED

To \_\_\_\_\_  
FORM NO. 36-66  
MAR 1949

8-10

19 August 1953

MEMORANDUM FOR: CHIEF, FINANCE DIVISION  
 VIA: TSS/Budget Officer  
 SUBJECT: Invoice No. 1, Subproject 8, Project NEULTRA

Invoice No. 1 for Subproject 8 of Project NEULTRA is attached.

It is requested that payment be made by two checks in the amounts of \$13,166.67 and \$263.33 made out to [REDACTED]. The checks should be sent to Chief, CD/TSS, through TSS/Budget Officer.

15,430.00  
C

SIDNEY GOULDERS  
 Chief  
 Chemical Division, TSS

Attachments:  
 Invoice  
 Certifications

Distribution:  
 Addressee - Orig. & 1  
 Comptroller - 1  
 Exec. Secy., [REDACTED] G  
 TSS/Budget - 1 ✓  
 TSS/Registry - 1  
 TSS/CD - 2 ✓

[REDACTED] A

AUG 20 ENTD

8-10

CERTIFICATIONS

(1) "It is hereby certified that this is Invoice No. 1 applying to subproject 8 of Project MKULTRA, that technical performance by [redacted] is satisfactory, that the work is being accomplished in accordance with the mutual agreement reached with [redacted] that this bill is just and correct and that payment thereof has not yet been made.

C

C

C

Date: \_\_\_\_\_

\_\_\_\_\_  
SIDNEY GORLIEB  
Chief, CD/TSS"

(2) "It is hereby certified that this invoice applies to subproject 8 under Project MKULTRA which was duly approved and that the project is being carried out in accordance with the DD/P memorandum to DCI dated 3 April 1953 and the DCI memorandum to DD/A dated 13 April 1953. Payment is authorized and requested.

Date: \_\_\_\_\_

\_\_\_\_\_  
Research Director"

A

(3) "It is hereby certified that the scope of the program of subproject 8 of Project MKULTRA has been approved.

Date: \_\_\_\_\_

\_\_\_\_\_  
Exec. Sec'y., [redacted]

A

C

[redacted]

8-11

[REDACTED]

9 June 1953

MEMORANDUM FOR: CONTROLLER  
ATTENTION: Finance Division  
SUBJECT: Project NEULTRA, Subproject B

C-112

Under the authority granted in the memorandum dated 13 April 1953 from the DCI to the DD/A and the further authority granted in the memorandum dated 17 April 1953 from the DD/A to the Comptroller on the subject, "DD/P-TOS Project NEULTRA", subproject B has been approved, and \$40,290.00 of the over-all Project NEULTRA funds have been obligated to cover the subproject's expenses.

SIDNEY GOTTLIEB  
Chief  
Chemical Division, TOS

PROGRAM APPROVED  
AND RECOMMENDED:

APPROVED FOR OBLIGATION  
OF FUNDS:

[REDACTED] A

[REDACTED] A

Research Chairman

Research Director

Date:            1953

Date:            1953

Distribution:

- Addressed - Orig. & 2
- Exec. Sec'y, [REDACTED] C
- TOS/Subject - 1 ✓
- TOS/Registry - 1
- TOS/CD - 2

[REDACTED] A

[REDACTED]

JUN 19 ENT'D

8-12

August 18, 1953

B [REDACTED]

B Payment Due for grant to [REDACTED]	\$13,166.67
Service Charge of 2%.....	<u>\$**263.33</u>
TOTAL.....	\$13,430.00

C [REDACTED]

Inv #1



8-13

[REDACTED]

DRAFT  
9 June 1953

A

MEMORANDUM FOR THE RECORD

SUBJECT: Project MKULTRA, Subproject 8

1. Subproject 8 is being set up as a means to continue the present work in the general field of L.S.D. at [REDACTED] until 11 September 1954.

B

2. This project will include a continuation of a study of the biochemical, neurophysiological, sociological, and clinical psychiatric aspects of L.S.D., and also a study of L.S.D. antagonists and drugs related to L.S.D., such as L.A.E. A detailed proposal is attached. The principle investigators will continue to be [REDACTED]

C

C  
B

[REDACTED] all of [REDACTED]

B

3. The estimated budget of the project at [REDACTED] is \$39,500.00. The [REDACTED] will serve as a cut-out and cover for this project and will furnish the above funds to the [REDACTED] as a philanthropic grant for medical research. A service charge of \$790.00 (2% of the estimated budget) is to be paid to the [REDACTED] for this service.

B

B

B

B

4. Thus the total charges for this project will not exceed \$40,290.00 for a period ending September 11, 1954.

5. [REDACTED] (Director of the hospital) are cleared through TOP SECRET and are aware of the true purpose of the project.

C

*[Signature]*  
[REDACTED]  
Chemical Division/TSS

A

APPROVED:

*[Signature]*  
Chief, Chemical Division/TSS

[REDACTED]

[REDACTED]

[REDACTED]

PROGRAM

8-13

[REDACTED]

PROGRAM APPROVED  
AND RECOMMENDED:

APPROVED FOR OBLIGATION  
OF FUNDS:

[REDACTED]

Research Casirman

A

[REDACTED]

Research Director

A

Date: \_\_\_\_\_

Date: June 16, 1953.

Attachment:  
Proposal.

Original Only.

[REDACTED]

[REDACTED]

[REDACTED]

PROSPECTUS FOR CONTINUATION OF RESEARCH PROJECT III  
ON L.S.D. - d-LYSERGIC ACID DIETHYLAMIDE TARTRATE.

8-13

To include Study of L.S.D. Antagonists and Related Drugs Such as L.A.E. - Lysergic Acid Ethylamide.

The prospectus for next year is in general a continuation of the L.S.D. project along similar lines to that of this year. Each aspect of the project (biochemical, neurophysiological, sociological, clinical psychiatric) to be continued.

The principal addition in the broad areas of study is that of a psychological section which consists of work not outlined in last year's protocol but which nevertheless has been going on during the year and has brought forth substantial findings sufficient to point out the necessity both of its continuation and expansion.

Each scientific aspect of the project has led to the development of procedures and methods which are now of proved usefulness in the study of lysergic and other similar drug reactions. It is the further application of the methods which have been developed during the past year of experimentation that will be one of the principal focuses of next year's work.

These methods will be applied to the study of related chemicals such as L.A.E. and any other drugs which make their appearance, and to the study of other drugs in conjunction with L.S.D. with the goal of ascertaining antagonistic effects.

We would also like to expand the base of the experiment by applying these methods to the study of patients with functional psychoses not attributable to drug reactions. This will not only test the applicability of the methods on a broader basis but will demonstrate more precisely the degree to which the findings of the studies of the lysergic psychosis can be applied to understanding schizophrenia and other functional psychoses.

The past year's research has dealt to a great extent with determining the symptoms produced by different dosages of L.S.D. and the degree to which these symptoms can be determined by the social situation in which the subject finds himself and by the basic personality and social attributes of the subject himself. For the study of the use of other drugs in conjunction with L.S.D. to ascertain antagonistic effects it becomes necessary to develop more precise measurements of L.S.D. effect than any which we have had heretofore. This constitutes an essentially new field of investigation, namely that of developing quantitative measurements of lysergic effect.

From our background of clinical and social observations of the lysergic psychosis which have been carried on throughout the past year, more precise and objective instruments of measurement will be developed along the following lines: physiological measurements such as polygraph changes and sensitivity to specific physical stimuli such as flashing light; psychological measurements of persistence, motivation lack, distractibility, memory, reality perception, richness of associations; sociological and social psychological measurements such as quality and quantity of verbal production in different structured social situations such as problem solving group discussion and occupational task situations; psychiatric determinations of mental status (which is essentially a continuation of the present method of clinical evaluation).

Part I. Biochemical Studies

These studies were carried out at the [REDACTED] B

B [REDACTED] Director: [REDACTED] C

L.S.D. as a stress agent upon the adrenal cortex.

[REDACTED]

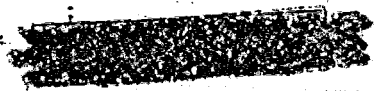
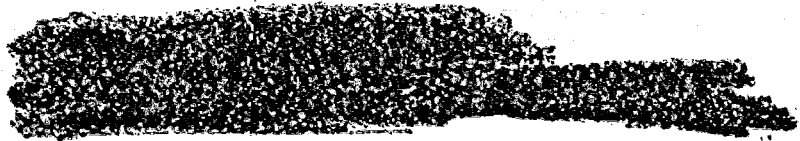
Twelve volunteers were chosen. On the control day, merely the urines were collected at pre-determined intervals, and at 3.00 o'clock in the afternoon, an injection of ACTH, 25 mg., was given to test the responsivity of the adrenal cortex.

The urine was examined as to volume; rate per minute; and, chemically, as to the content of Creatinine (determined in grams per 24 hours); 17-Ketosteroids (determined by milligram per hour); Sodium (determined by milligram per hour); Potassium (determined by milligram per hour); Uric Acid (determined by milligram per minute); Phosphates (determined by milligram per minute).

On the experimental day, the volunteers received L.S.D. early in the morning at a definite hour. The urine again was collected at exactly the same time intervals as on the control day.

Three control experiments were carried out in which glucose was given together with L.S.D.

From the data of the chemical determinations collected, no definite conclusions can be drawn at the present time. Some of the results were not consistent. There seems to have been some technical difficulties, such as errors possibly made by the subjects themselves with regard to the exact time, hour and minute, when they discarded the first morning urine, and also possibly some errors in chemical determinations. However, from the overall picture of the data which lend themselves to evaluation, the impression was gained by the ~~\_\_\_\_\_~~ as well as by ~~\_\_\_\_\_~~ that L.S.D. seems to cause an inhibitory effect upon the adrenal cortex. It is felt that it is of utmost importance to continue these chemical determinations. Some slight changes in the technique are contemplated in order to establish data which will allow a greater consistency, and therefore, better correlation.



Part II. Antidote Experiments

A number of antidote experiments were carried out and more are contemplated for the future.

In the course of these experiments, the impression was gained that the molecular structure of the agent used had a definite relationship with regard to the effect of L.S.D. In some instances, the effect of L.S.D. seemed to have been enhanced, as for instance the experiments with ergotamine, while definite neutralizing effects with other agents were not yet established.

Part III. Lysergic Acid Ethylamide

A new drug, L.A.E., became available for us and we propose to investigate it more thoroughly in the coming year. This drug was developed at the [REDACTED]. Its name is Lysergic Acid Ethylamide. This chemical is closely related to L.S.D. the difference being merely that one ethyl group, C<sub>2</sub>H<sub>5</sub> has been substituted by hydrogen (H) atom.

From the preliminary report of the [REDACTED] we learned the following: 429 experiments were carried out on 28 normal persons and some psychotics. The drug was given in doses of 0.5 to 0.7 milligrams by subcutaneous injection. With this amount, normal individuals experienced a schizophrenia-like condition which was characterized by adynamy, indifference, impaired volition, and phenomena of depersonalization.

In schizophrenics, LAE counteracted paranoid hallucinatory excitation. That is to say, the schizophrenics did not lose their paranoid delusions or hallucinations, but became indifferent to them; a phenomenon which appeared to the investigator as similar to the effect of prefrontal lobotomy, and therefore, he considered the effect of LAE as that of a reversible "chemical lobotomy".

[REDACTED]

On the basis of their observations, the investigators considered LAE as a new kind of "sedative"; a sedative which in its effect is neither related to the group of hypnotica and narcotica of the barbituric or morphine type, nor to the group of the sympathico- or parasympathicolytic chemicals.

The theoretical problem presents itself to the question as to how it is possible that a chemical which, in normal people brings about a disintegration into a schizophrenic-like condition; is, on the other hand, capable of tuning down or neutralizing the excitation of a schizophrenic psychotic.

Other problems present themselves, the most important of which will be the interaction of LAE and L.S.D. It is possible to think that LAE might have an antagonistic, if not to say an antidotic effect upon L.S.D.

Part IV. Physiological Studies

(Combined Physio-psycho-sociological studies)

The physiological changes during a lysergic psychosis may be explored by use of the polygraph. This apparatus makes it possible to study many physiological parameters simultaneously. In addition a tape recording of the verbal interchange between the lysergized subject and the examiner is synchronized with the physiological record. Sociometric classification of interactions (Bales interaction method) is carried out also by an observer and recorded on the polygraph record.

Thus the polygraph procedure can be used to obtain information at the (a) physiological, (b) psychological and (c) sociological level - all funneled into one record.

Analysis is being developed along the following lines: (1) difference between the resting physiological values pre L.S.D. and during lysergic psychosis. (a) Difference between stress physiological values pre and during.

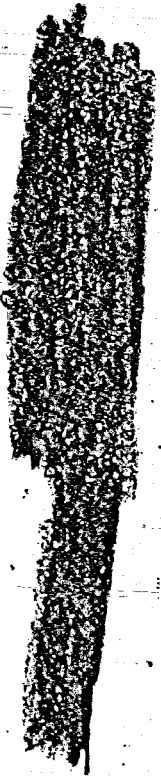
Two classes of stress are used (a) Essentially physical (ice application and flickering light) and (b) psychological stress (psychiatric interview and specific psychological test).

Further analysis related social classification of verbalization during the psychiatric interview with physiological factors. Thus it is possible to determine whether pulse, temperature, respiration, GSR, muscle activity, etc. vary as a function of positively oriented social verbalization, negatively oriented verbalization, or neutral. This study is done both before and during lysergic psychosis.

An interaction chronograph is now being developed by our electrical engineer which will do the following: (1) Record on polygraph paper when subject is talking and when examiner is talking. (2) Accumulate the talking time of each party on an electric clock which can be read at desired intervals. (3) Give crude estimate of decibel strength of talking of either subject or examiner. During a lysergic psychosis it has been noted clinically that blocking of speech is one of the earliest signs of lysergic action. It has already been shown that verbal productivity drops during the lysergic psychosis.

Further psycho-physiological exploration which we think might hold promise would be to determine the nature and degree of psychological stress induced by flickering light in relation to the disorganizing and abnormalizing effect of flickering light upon the E.E.G. It has been observed that a 15 per second low intensity flicker will produce a feeling of great tension or irritability in one subject whereas it will be calming and pacifying to another. This study is also to be done before and during lysergic psychosis.

A number of controlled experiments were carried out to test the autonomic nervous system under the influence of L.S.D. In some instances, polygraphic, electroencephalographic and electrocardiographic tracings were taken.





The number of experiments is not yet sufficient to enable us to arrive at definite conclusions. Some of the contemplated experiments, for administrative reasons, have not yet been carried out.

The autonomic nervous system was tested on subjects who had received L.S.D. orally, in the amount of one gamma, one-half gamma, and one-quarter gamma per kilogram body weight. The greatest number of experiments were carried out on subjects who had received merely one-quarter gamma per kilogram body weight.

When L.S.D. in the amount of one gamma per kilogram body weight was given, the injection of Epinephrine, as compared to the control, showed a considerable inhibition. When one-quarter gamma per kilogram body weight of L.S. D. was given, a number of the subjects showed a definite inhibition of the autonomic nervous system on minimal amounts of Epinephrine and Mecholyl. In these instances, Epinephrine was given in the amount of .025 cc. of a solution 1:1000, and Mecholyl was given in the amount of 2.5 mg. intramuscularly, which is one-quarter of the ordinary amount of 10 milligrams. As we had anticipated, working with those minimal doses of L.S.D., as well as of Epinephrine and Mecholyl, no such inhibition was noted in some cases.

At a recent conference, it was decided that the future experiments should be carried out with L.S.D. in the amount of one-half gamma per kilogram body weight.

The experiments seem to be of significance inasmuch as clinically, autonomic disturbances following the administration of L.S.D. are usually observed.

No experiments, for administrative reasons, have yet been carried out with vagus stimulation and adrenolytic and vagus-blocking agents.

<sup>C</sup> [REDACTED] of [REDACTED] <sup>B</sup>  
at [REDACTED] has just been given a grant to study human subjects  
[REDACTED]

by methods he has adapted to lower vertebrates. Briefly, he will set up  
 B at the [redacted] (now collaborating with [redacted] B  
 B [redacted] two laboratories to study chronically mentally ill  
 patients' response to award conditioning in terms of their ability to  
 develop desired behavior and to continue such behavior over long periods of  
 time.

As soon as this human laboratory is set up and reliable curves of  
 behavior developed in humans in collaboration with [redacted] we plan C  
 to test effect of lysergic acid on the behavior curves.

Part V. Clinical Psychiatric Studies

(1) We will continue as in the past year to make a clinical psychiatric  
 evaluation at the height of the reaction of all subjects who receive L.S.D.

(2) We will make clinical psychiatric evaluations of the effect of  
 drugs in combination with L.S.D. The goal in this aspect of the project is  
 the evaluation of antagonistic effects.

Ideally we feel it is desirable to make several experiments on the  
 same subject. For example: subject with L.S.D. alone; subject with drug  
 under consideration alone; subject with one-half doses of L.S.D. and drug;  
 subject with full doses of L.S.D. and drug; and probably subject with full  
 dose of one and half dose of the other.

This ideal situation is, however, limited by the desire of the  
 subject to have the experiment repeated on himself and past experience would  
 indicate that very few subjects would submit to more than two or three tests  
 during the course of a year. As a result the combinations of drug and L.S.D.  
 will be decided in each instance with reference to the availability of the  
 subject and the maximum utilization of each individual experiment.




(3) We are particularly interested in the psychiatric effects of chemical variants of lysergic acid of which L.A.S. is presently available. There is also interest in combinations of these chemical variants with other drugs, the goal, as in (2) being defined substances having antagonistic effects.

(4) We have some interest in the administration of L.S.D. alone or in combination with drugs and other variants of L.S.D. molecule to patients with various psychiatric syndromes. The goal in this aspect of the work which has wide ramifications is therapeutic psychiatric effects. The observations here as in the aspects above are in terms of variations in the clinical psychiatric picture.

Intensity of Symptoms: The clinical psychiatric pictures are graded according to intensity of symptoms or departure from normal as mild, moderate or severe. The intensity of individual symptoms are also graded on a scale of four - zero being within normal limits and four being the most severe. In certain instances the departure from normal is in a negative or minus direction as, for example, in the case of hunger where pathological absence of appetite might be rated in terms of a minus sign and pathological increase in appetite in terms of a plus sign.

Integration of clinical psychiatric findings and of findings of altered social behavior will be further developed. Only as the change in the lysergized subject's ability to function in varied social situations is related to the changes in his mental status can the basic dynamics of psychoses be ascertained. So far the abnormalities determined by clinical psychiatric evaluation and those found in hour-to-hour social observation have to some extent been viewed independently and extensive integrative analysis is required to combine these findings.




Part VI. Psychological Studies

The draw-a-person test (D.A.P.) should be continued as a regular part of the psychological program since it now appears to be a particularly fruitful approach in giving leads about the subject's self concept and his attitudes toward others in an indirect but meaningful way. It might be advisable to add to the mere drawing technique a set of routine questions or ask the subject to associate freely to the figure he has drawn. This would give some idea of richness of association in regard to people and in regard to his own creations.

The T.A.T. should be continued and possibly enlarged to include ten cards. Intensive analysis of one case has shown that there has been a decrease in the number of words used when giving a story under L.S.D. in contrast to the number of words used in the normal state; the subject also spent less time on each picture. The richness of association could be investigated more thoroughly using this projective device by not only counting the words but making an analysis of the skeleton words (nouns and verbs) and descriptive phrases (adjectives and adverbs) in the two states and the hypothesis could here be formulated that under the lysergized state the subject would be less creatively productive and give less richness in his stories.

It is suggested that since only three of the ten Rorschach cards are being given and since the Rorschach is apparently being used in full by another group, that we discontinue the partial Rorschach and work with other types of tests. It is suggested that in place of the Rorschach we use the Vigotsky. The test has, in the literature, a report of the performance of schizophrenics. This is essentially a test of abstraction and in the administration of it the examiner can easily insist on or demand verbal reports of the ideation and the hypothesizing that is going on while trying to do the test.



This particular test seems to be one which is a challenge to those people of superior intelligence and is one which also creates a somewhat natural stress situation. Because of the formulation and rejection of hypotheses which is involved in the situation of this test the subject's ability to concentrate and function in a stress situation can be observed. His ability to shift his thinking and his ability to respond to the examiner who can increase or decrease the stress situation by behavior and comments can also be observed. It seems as though this test may provide a great wealth of material which should allow for correlation with behavioral observations made in other than the testing situation.

It will be the examiner's responsibility on this test to successfully be an "annoyer" or successfully keep the subject working when he can no longer tolerate the frustration experience in itself. Since this is a motor task, discharge of tension through overactivity could be observed. Percentual distortions could also be asked about after the test is completed. It would be important to ask at the end of this test if the subject could review his mental processes on this task which is intangible and where it is obvious that there is a solution and an answer. Whether he blames the examiner for his difficulty, blames himself, shows withdrawal or hostility in response to stress and so on could be estimated or evaluated more directly.

It is suggested that the proverbs be discontinued in this new experiment. This is essentially because of the apparent inability of the present younger generation to deal with proverbs and their apparent lack of contact with them in their everyday living. Since abstraction problems can be dealt with in the Vigotsky both in a verbal and non verbal level, it would seem advisable that the remaining time which is probably all that the psychologist will be given be devoted to a more specifically perceptual test such as the Bender-Gestalt in which the subject is required to reproduce geometric designs.

Beyond the drawing of this test it might be possible also to use it for richness of association in that the subject would be asked to tell as many things as each design made them think of, or one could see how many words was suggested to the subject by the given design in one minute of time.

There will be a problem especially with the Vigotsky about giving the test to the person in the normal state before he has had L.S.D. since once this test has been solved it is no longer a challenge to any individual. It is suggested that for this test the subjects all be given it first while under L.S.D. and then have them take it a second time in their normal state at which time intensive investigation be made of their feelings, attitudes, reactions, etc.

Part VII. Sociodynamic Studies

1. Comparative Studies Using the Interplay Categories<sup>\*</sup> as Basic Tool of Research

During the past year the interplay categories have been applied primarily at a time when distortions occur within the limit of social situations met or sought out by the subject. Further extension of the application of this method are to include symptom changes of the subject as related to interpersonal relationships and wider variety of social situations.

Some of the situations in which further study is indicated are:

1. Group problem-solving situations. Lysergic subjects are asked to work on problems of social and ethical nature, and their general conduct is to be measured by such instruments as Bales Interaction Process Analysis and the Interaction Chronograph, in addition to the nine interplay categories.
2. Subjects put to bed and given supportive nursing and medical care.
3. Subjects engaged in physical and sports activity.

\* Described in quarterly reports.

In conjunction with these studies we wish to apply the interplay categories in a comparative exploration of therapeutic techniques with lysergized subjects, and normal psychotics. Judging by the many extant inconclusive and often contradictory reports on psychotherapeutic techniques, an intensive study of the psychotherapeutic situation, with the aid of the interplay categories, is needed. Little is known, for example, of how adequately or how closely therapists' self-expectation about their roles as therapists are met in an actual therapeutic interview. Moreover, with this method, the sequential pattern of therapeutic attitudes and verbal conduct can be explored.

2. Comparative Analysis of L.S.D. and Psychotic Distortions

A further extension of the analysis of visual distortions in L.S.D. subjects is planned to include investigation of distortions which occur in psychotic patients. Further investigations seem indicated to determine the similarity, frequency of occurrence, and the conditions leading to and existing at the time when distortions occur in psychotics and L.S.D. subjects. Such a study is expected to lead to a much needed understanding of the meaning of these distortions to the patient and their importance in psychiatric interpretation and treatment.

3. Continuation and Extension of Methods of Personality Evaluation

The relatedness profile (see Quarterly Report #2) focuses on the dominant kind of relatedness, the level of participation and the degree of stress experience in the six "people areas." The clinical social summary scores the quality of the individual's general relatedness pattern in terms of "spontaneity vs. control" and so forth (Quarterly Report #2). A report of the use of the profile and clinical analysis will appear in the third quarterly report. Evaluations and analysis during the past year have been



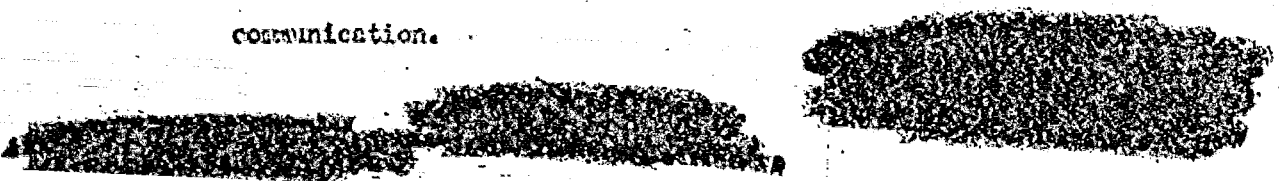
essentially a comparison between the basic personality and the social behavior before and at the height of the L.S.D. reaction.

Apart from extending this type of analysis to the total available number of cases, further studies of this nature are aimed at elucidating more clearly the psycho-social alterations of the L.S.D. subject's conduct on a chronological hour-by-hour (and perhaps even minute-by-minute) basis. It is expected that this procedure would give a more intensive dynamic appraisal of the sequence of symptoms. The findings from the application of these methods will be integrated both with each other and with clinical and psychological findings.

4. A Comparative Study of the Pragmatics, Syntactics and Semantics in L.S.D. and Genuine Psychosis

In working with L.S.D. subjects much difficulty has been encountered in attempting to find words which adequately communicate the feelings and experiences of the subject. This is equally true with the psychotics. For example, words such as "strange", "weird", "tangible", "suspended" and so forth communicate very little to a basic understanding of the deterioration of thought and emotional process which is taking place in the individual. Unless feelings are translated into a vocabulary of motives which is meaningful both to the subject, experiencing the feelings and to the other trying to understand the feelings, the barrier to communication continues to exist and little aid can be given. The task set before us here is to understand ways in which these feelings can be more adequately and easily described and interpreted. To this end we propose to make an intensive linguistic analysis of the recorded therapeutic interview material. The approach is planned to be three-fold:

1. Analysis of pragmatics, that is, a study of the intentions, attitudes, and of the expressive behavior involved in communication.





2. Analysis of the grammatical structure or syntactics,

that is, a study of the relationship of words and sentences to each other. This will include a study of the degree of looseness, precision and fragmentation, and the selectivity and flexibility of associations (according to established laws of association.)

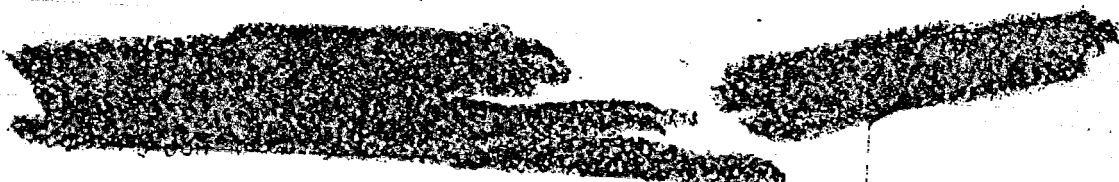
3. Analysis of semantics, that is, a study of content meaning.

This type of content analysis deals with the meaning of things and events and people, external to the subject, that is, what seems most significant to the subject about these things, whether they be prosaic, conventional or imaginative, symbolic and interpretive.

In this type of analysis, we expect to be guided by the extant literature on this subject, in particular, a recent article on "Language Behavior in Manics" by K. Lorenz in the Archives of Neurology and Psychiatry, January, 1953.

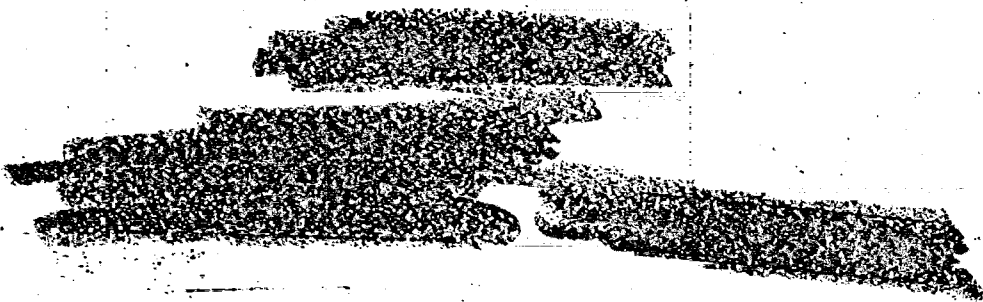
5. A Study of L.S.D. as a Useful Adjunct in the Hospital Training Program

Studies of the past year resulted in the accumulation of sufficient information to continue investigation in this area. Considerable data has been gathered on the effects of the L.S.D. experience of the personnel from the point of view of its capacity to increase their ability to understand and aid patients. Detailed analysis of this information has yet to be made on the amount and kind of understanding and knowledge gained and how it is applied by personnel in patient care.



Two group experiences are planned for further study:

1. Group sessions will be held with personnel who have had the experience to determine the extent of the knowledge they have gained in the management of psychotic patients.
2. There will be group meetings in which personnel who have had L.S.D. and personnel who have not taken the drug will participate, the latter serving as controls. This is expected to prove useful in a general training program for personnel in patient management.



8-13

ESTIMATED BUDGET

1. Salaries	
A. Technical	\$ 6,000.
B. Professional	28,000.
C. Experimental Subjects	2,500.
2. Expendable Supplies	
A. Chemicals, Drugs, etc.	1,000.
B. Records and Photography	300.
C. Office Supplies	400.
D. Reprints	200.
3. Permanent Equipment	500.
4. Travel	600.
TOTAL <u>\$39,500.</u>	

The responsible researchers will continue as of present year ~~\_\_\_\_\_~~

C

B Estimate for ~~\_\_\_\_\_~~ 39,500.00  
 B Service charge for ~~\_\_\_\_\_~~ (27) 790.00  
 TOTAL \$40,290.00

8-14

August 19, 1954

C  
B

[REDACTED]

C Dear [REDACTED]

C This is to inform you that my former [REDACTED] number has been changed

C to [REDACTED]. Please do not try to reach me at the old number.

No collect calls will be accepted at this number.

Sincerely,

SECRET

INVOICE CHECK SHEET

MCULTRA Subproject 8

Date of Original Authorization	Period Covered	Time Ex-ceeded to	Allotment Number	Amount of Obligation
10 June 1953	11 Sept 54		3-2502-10001	40290.00

Additional Authorizations	Period Covered	Time Ex-ceeded to	Allotment Number	Amount of Obligation

Invoice No.	Date	Amount	Balance
1	8/19/53	13430.00	26860.00
2	2/5/54	26860.00	0

REMARKS: Project closed See MCULTRA 10