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Drug, Doctor's Verbal Attitude and Clinic Setting in the Symptomatic Response to Pharmacotherapy*

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Introduction

Most psychiatrists by now have observed in their personal experience with patients the importance of non-pharmacologic factors in pharmacotherapy. Many discussions of the issue have appeared in the literature. FELDMAN (1956) early pointed to the psychiatrist's attitude about the medication he prescribed as one crucial non-pharmacologic factor in the patient's improvement.

These observations invite attention to the subtler task of specifying quantitatively the relationships between pharmacologic and non-pharmacologic effects in pharmacotherapy. Most authors reporting controlled studies of pharmacotherapy have assumed that the patient's total response is simply the sum of the pharmacologic effect and the non-pharmacologic effects, represented by the response to placebo. In this additive model, as shown in Fig. 1, the pharmacologic effect is assumed to remain constant regardless of the nature or degree of the non-pharmacologic effects (FISHER *et al.*, 1964). The drug effect can be estimated simply by subtracting the response of patients taking placebo from the response of patients taking active drug.

KAST and LOESCH (1959), however, considered the additive model too simple. They suggested instead that the drug effect (defined as the differ-

ence between the response to active drug and the response to placebo) might be much larger when the medications are administered by a physician with attitudes strongly favorable toward drugs. This notion was reinforced by UHLENHUTH *et al.* (1959), who observed a drug effect in patients treated by a doctor who expected a drug-placebo difference and no drug effect in patients treated by a doctor with a noncommittal expectation. Fig. 1 illustrates the interactive model suggested by the work of these investigators. In this model, the effect of each variable differs with changes in the condition of the other variable. This same model can be extended to three variables, represented in three dimensional space, and even beyond.

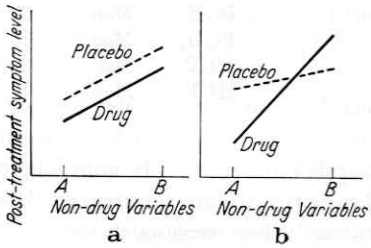

Fig. 1 a and b. Additive and interactive models for effects of drug and non-drug treatments. a Additive model; b Interactive model

In this context, the specific aims of the present study were to determine whether:

1. Meprobamate administered for 6 weeks in a fixed dosage is more effective than inert placebo for relieving symptoms in psychoneurotic outpatients.

2. Doctors expressing a positive, enthusiastic, "therapeutic" ("T") attitude toward medication are more effective than doctors expressing an uncertain, "experimental" ("E") attitude toward medication, for relieving symptomatic distress in their patients. The contrasting attituds would be represented by standardized roles learned by the doctors.

3. An interaction exists between the effect of medication and the effect of the doctor's verbal attitude such that the drug-placebo difference in response will be greater in patients treated by doctors expressing a T attitude. *This third aim embodies the major hypothesis of the study.*

Data for the study were collected at three outpatient psychiatric clinics, primarily to obtain a sizeable number of subjects without undue delay. The possibility that differences in the clinic settings might interact with the variables of major interest was recognized, though certainly not hoped for, so that the three-dimensional interactive model mentioned above was adopted.

Method

General Plan

The study was planned according to a three-by-two-by-two factorial design incorporating the clinic, drug and role variables in twelve cells. Table 1 shows this design. The plan called for about 15 patients completing treatment according to protocol in each cell. Each patient was to be treated under the same conditions for a period of 6 weeks, with

biweekly visits to his doctor. Fig. 2 summarizes the procedures. Results were to be analyzed for the three different time intervals by analysis of covariance (for criteria including a measure of initial status) or analysis of variance (for criteria dealing only in change).

Table 1. *Design of study (15 patients per cell)*

Clinic	Drug	Role	Clinic	Drug	Role
JHH	Mep	T	JHH	Plac	T
JHH	Mep	E	JHH	Plac	E
PGH	Mep	T	PGH	Plac	T
PGH	Mep	E	PGH	Plac	E
HUP	Mep	T	HUP	Plac	T
HUP	Mep	E	HUP	Plac	E

	Consult	Visit 1	Visit 2	Visit 3	Visit 4
		days	2 weeks	2 weeks	2 weeks
Patient's characteristics elicited	*	*			
Patient and study doctor rate global change			*	*	*
Patient rates other criteria	*	*	*	*	*
Study doctor rates other criteria		*	*	*	*
Patient receives medication		*	*	*	
Technician counts excess medication			*	*	*
Study doctor guesses medication			*	*	*
Patient describes study doctor					*

Fig. 2. Flow chart of procedures for study

Setting

Three outpatient psychiatric clinics participated in gathering the data of this study: The Outpatient Department of the Henry Phipps Psychiatric Clinic of the Johns Hopkins Hospital (JHH), the Outpatient Psychiatric Clinic of the Philadelphia General Hospital (PGH) and the Outpatient Psychiatric Clinic of the Hospital of the University of Pennsylvania (HUP). Although these three clinics shared many features common to university-affiliated, community clinics in large cities, some differences among their patient populations and their psychiatric residents became apparent during the course of this study, as shown below.

Study Personnel

A research team at each clinic, listed in detail in the Appendix, gathered the data for the study. The teams worked under the general supervision of a principal investigator in each city. The members of each team and their functions follow below:

1. A research psychiatrist shared supervisory responsibility for the research with the principal investigator. These two psychiatrists also

took final responsibility for the patients' clinical welfare in all phases of the study.

2. The intake psychiatrists were the psychiatric consultants on the regular clinic staff who selected patients for referral to the study.

3. The study doctors, two in the T role and two in the E role, interviewed the patients on their four study visits. They were also available to their patients for telephone consultation if necessary between study visits, and they maintained their prescribed roles during these contacts.

4. The two secretary-technicians arranged appointments with the patients, administered forms for the patients' self-ratings, conducted the patients through the other procedures during their study visits and kept the necessary records.

Staff members of the Psychopharmacology Service Center of the NIMH made every effort to assure uniformity of procedure among the three clinics. They played key roles in planning the study, developed a manual of procedure, participated directly in training the three research teams, intermittently observed the procedures at the three clinics as the study progressed and monitored the interview transcripts and other data collected.

Selecting Patients

The psychiatric consultants at each clinic (senior part-time attending staff or psychiatric residents) referred to the study patients whom they saw during the course of their consultative work at the clinics. The full-time clinic chiefs co-operated in the referral process by encouraging the clinic consultants to refer all suitable patients to the study and by helping to screen out unsuitable patients. As a further check on the suitability of referrals to the study, a research psychiatrist at each clinic reviewed the information about the patient provided by the referring consultant and in some cases saw the patient personally as well.

The study accepted patients ranging in age from 18 years through 64 years who came to the clinics for psychiatric consultation on account of psychoneurotic complaints including manifest anxiety. Patients were excluded from the study if they:

1. Had visited the clinic within the past 6 months.

2. Showed at intake: overt psychotic reaction (schizophrenic, manic-depressive), sociopathic personality disturbance (including alcoholism), organic central nervous system impairment or psychoneurotic reaction with depression predominating.

3. Required ancillary therapy during the experimental treatment period, including: a medical regimen for pregnancy, allergy or hypertension; a medical regimen requiring a sedative or other psychotropic drug for whatever reason; social case work or visits to other doctors.

Patients on a stable medical regimen without psychotropic drugs, however, were included.

4. Were not able to complete the necessary forms reliably.

5. Could not keep the prescribed appointment schedule.

6. Refused to remain off psychotropic drugs for at least 7 days prior to the first interview with the study doctor.

Assigning Patients to Treatment Conditions

Patients accepted for the study in each clinic were assigned at random to the four treatment conditions (meprobamate-T, meprobamate-E, placebo-T and placebo-E) with the constraint that men and women, colored and white, should be equally represented in each treatment condition.

To accomplish this, a master assignment sheet was prepared in advance for each clinic. The sheet contained four groups of code numbers, one group for each sex-race combination.

As each patient entered the study, the secretary assigned to him the next available code number in the set of numbers corresponding to his sex and race. Each code number represented a medication (double-blind) and role, predetermined at random.

The secretery made the selection between the two study doctors working in the same role. She assigned the patient to the doctor with the smaller patient load at the time.

Dropping Patients and Replacing Dropouts

The research psychiatrist at each clinic decided when to drop a patient from the study. A patient was dropped when he:

1. Took more than one dose daily of any psychotropic medication during the interval between his referral to the study and his first study visit.

2. Gave evidence during his first study visit that he no longer met the diagnostic criteria for inclusion in the study.

3. Failed to come for a study visit within 4 days of the specified 2-week interval between visits.

4. Took less than an average of six capsules of medication (1,200 mg of meprobamate) per day during the interval between study visits or took less than six capsules per day on each of the 3 days just before his study visit.

5. Took a psychotropic drug regularly in addition to the study medication.

6. Required a deviation from the experimental treatment in order to serve his clinical welfare best at any time during his course in the study.

If a patient was dropped from the study, his code number was not used again. Code numbers were sequentially assigned to patients until the required number of patients had completed the study.

Patient Population

Among the 254 patients entering the study, 138 completed the 6-week experimental treatment according to protocol and 116 did not. Other publications compare in detail the characteristics of patients who completed the study and those who did not (LIPMAN *et al.*, 1965), describe the relationship between "dropping out" and the four treatment conditions (FISHER *et al.*, 1964), and report the results when patients who took insufficient medication are included in the analyses (UHLENHUTH *et al.*, 1965).

The present report deals only with the 138 patients who completed the 6-week experimental treatment according to plan. Table 2 lists some characteristics of these patients for each clinic elicited at the time of consultation. Tables 3 and 4 list additional characteristics elicited at the first study visit. As a group, these patients were predominantly young married women of lower middle socio-economic class. Their complaints tended to be chronic, though not severe, and they had considerable prior experience with psychotropic drugs, but not with treatment in psychiatric facilities as such. These patients most frequently sought medication for the relief of symptoms.

There are, however, distinct variations of this pattern among the three clinics, as a closer examination of the tables will show. The most marked variations concern race, education, employment and the commonly associated styles of complaint and goals and expectations regarding treatment held by the patient (HOLLINGSHEAD and REDLICH, 1958). These differ among clinics at levels of significance ranging from $p < .05$ to $p < .01$. There is a progression along these dimensions from a lower social class orientation among patients at PGH toward a middle social class orientation among patients at HUP, with patients at JHH falling between.

Selecting Study Doctors

The study doctors were selected from the group of psychiatric residents who were interested and available at each clinic. In order to maximize the differences between the T and E roles, the two residents most strongly preferring each role were selected as study doctors at each clinic.

To assess the personal role preference of potential study doctors in a standardized way, each candidate listened to and reacted to the same taped sample interviews, one for the T role and one for the E role. Members of the research staff had recorded these interviews by playing patient and doctor to illustrate a typical interview of each kind. Each candidate

Table 2. *Characteristics of patient sample for each clinic at consultation. Number of patients in each class of classification data*

Characteristic	Clinic		
	JHH	PGH	HUP
Sample size	48	46	44
Previous OPD admission			
0	33	31	28
1	10	8	11
2	1	3	0
3+	4	4	5
Previous hospitalization			
Yes	2	2	0
No	46	41	42
Duration of present complaints			
0— 1 month	1	0	0
1— 6 months	14	10	5
7—12	3	6	2
12+	30	27	36
Took psychotropic drugs before			
Yes	39	34	31
No	9	7	12
No. of drugs taken during past year			
0	9	8	12
1	17	20	15
2	10	5	8
3+	11	2	4
Types of drugs taken during past year			
Tranquilizers	23	12	18
Sedatives	5	8	4
Other psychiatric	2	2	3
Combinations	7	4	2
None	9	9	12
How long off drugs			
On drug now	27	16	14
0— 1 month	5	12	6
1— 6 months	4	3	5
7—12	2	1	3
12+	1	1	0
Never on drug	9	7	12
*Patient's main treatment goal			
Resolve inner conflicts	6	5	16
Relief of psychic symptoms	24	11	14
Relief of somatic symptoms	14	15	8
Help with reality problem	1	2	0
Seeks treatment as result of outside pressure	0	1	2
Ambiguous	3	8	2

Table 2 (Continued)

Characteristic	Clinic		
	JHH	PGH	HUP
*Treatment patient expected			
Psychotherapy	9	4	17
Guidance or advice	18	5	8
Medication	17	29	11
None	4	0	2
Combinations	1	5	0
*Treatment recommended			
Drug therapy	3	21	6
Psychotherapy	22	3	13
Both	22	19	24
Neither	1	0	0
*Predicted study treatment outcome			
Excellent	2	3	2
Fair	24	38	26
Poor	6	2	5
Uncertain	15	0	10
Sex			
Male	19	13	16
Female	29	33	28
*Race			
White	29	10	21
Colored	19	36	23
*Marital status			
Single	11	15	13
Married	32	13	26
Divorced	0	2	2
Separated	5	13	1
Widowed	0	3	1
*Education			
0— 4 years	1	3	0
5— 6	2	3	0
7— 8	11	9	3
9—11	21	23	14
High-school graduate	11	7	19
More	2	1	6
*Income per year			
0—$ 999	11	12	4
$1,000—$2,999	6	10	9
$3,000—$4,999	13	2	7
$5,000—$6,999	8	0	2
*Current employment			
Employed	16	14	23
Unemployed	18	24	11
Housewife	14	8	8

* These items show differences among clinics at $p < .05$ by the chi square test. In most instances categories were collapsed to yield a 3×2 table for the test.

Table 3. *Characteristics of patient sample for each clinic at first treatment visit. Number of patients in each class of classification data*

Characteristic	Clinic		
	JHH	PGH	HUP
Took drugs past week			
Yes	15	14	9
No	33	32	34
Attitude toward experimental treatment			
Very eager	2	3	7
Somewhat eager	18	16	8
Neither	21	23	20
Somewhat reluctant	7	4	9
*Treatment patient expected			
Psychotherapy	8	4	12
Guidance or advice	8	5	8
Medication	6	26	16
None	14	7	2
*Predicted study treatment outcome			
Excellent	6	5	5
Fair	36	33	24
Poor	5	8	13
Uncertain	1	0	2
*Doctor's role performance			
Excellent	20	19	29
Moderately good	26	22	14
Poor	1	4	1
Doctor's feeling with patient			
Extremely comfortable	14	15	20
Moderately comfortable	29	22	20
Generally uncomfortable	4	8	4
Doctor likes patient			
Much less than most	4	0	6
A little less than most	12	11	6
As much as most	17	23	14
A little more than most	13	11	8
Much more than most	1	0	10

* These items show differences among clinics at $p < .05$ by the chi square test. In most instances categories were collapsed to yield a 3×2 table for the test.

listened to the two recorded interviews in private under similar conditions. He then registered his reaction to each type of interview on a scale of five points from "very appealing" to "very distasteful" prior to discussing his reactions with anyone else. A "role preference score" ranging from +4 (strong T) to −4 (strong E) was derived by subtracting the candidate's reaction to the E role interview from his reaction to the T role interview.

Table 4. *Characteristics of patient sample for each clinic at first treatment visit. Mean values of continuous variables*

Characteristic	Clinic		
	JHH	PGH	HUP
Initial distress ratings by patient			
Total Symptom Check List (SCL) score	1.81	1.83	1.93
Target Symptom (TS) score	2.69	2.70	2.70
*Anxiety Scale (ANX) score	0.30	0.05	0.61
*Depression Scale (DEPR) score	−0.16	−0.07	0.43
*No. of psychic complaints	5.88	4.78	7.12
Intensity of psychic complaints	2.66	2.64	2.70
*No. of somatic complaints	5.75	8.20	5.91
Intensity of somatic complaints	2.69	2.72	2.66
Initial distress ratings by doctor			
*Target Symptom score	3.02	2.68	2.97
Anxiety Scale score	0.68	0.76	0.88
*Interview behavior disturbance	1.73	2.15	3.27
Age	34.17	34.89	32.51
Height (inches)	66.38	65.22	66.05
Weight (pounds)	145.81	139.43	143.25

* These items show differences among clinics at $p < .05$ by analysis of variance.

The study began with four study doctors at each clinic. However, each clinic lost one doctor during the course of the study, and he was replaced by selecting from the available residents at the clinic the one most closely fitting the original criteria.

Table 5 shows the characteristics of the study doctors for each clinic. They were all men, and all predicted that meprobamate would be superior to placebo in this study. Inspection of the table, however, shows some distinct variations among the doctors at the three clinics in other respects. The doctors at PGH stand out as a group born late into large families of relatively low social class status. They show a greater preference for the T role and a type B orientation on the A-B characteristic (Whitehorn and Betz, 1960; McNair *et al.*, 1962).

Training Study Doctors

Each study doctor learned a single role, either the T or the E, which he maintained with all patients he saw during the study. After the study doctors had agreed to participate, each received a written description of his chosen role, including instructions for the conduct of his first and subsequent interviews with each patient and for handling various special situations and questions from patients. He also received transcripts of the sample first interview and the sample subsequent interview prepared by the research staff. These transcripts illustrated the general instructions,

Table 5. *Characteristics of study doctors for each clinic*

Clinic	JHH					PGH					HUP				
Doctor	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
Role	T	T	E	E	E	T	T	T	E	E	T	T	T	E	E
Role preference score	2	2	−2	−1	−1	3	1	3	−1	1	3	1	1	−3	1
Drug attitude score (+ is favorable)	4	−6	−2	−2	8	6	11	−14	−5	−2	0	−8	3	−11	1
Usual use of medication (% of patients)	80%	60%	75%	30%	90%	60%	50%	70%	80%	100%	80%	30%	90%	50%	50%
F Scale score (ADORNO *et al.*, 1950)	24	15	38	—	25	34	—	46	33	24	38	—	32	11	15
A/S Scale score (ALLPORT, 1928)	76	49	84	—	63	73	—	96	73	63	76	—	93	50	49
A-B Scale score	−2	1	2	5	2	0	1	−1	−3	−1	3	1	2	0	1
Role predicted superior	T	T	E	—	E	T	—	T	T	T	T	—	T	T	T
Year of residency	2	1	2	2	1	1	3	2	2	1	1	1	1	2	1
Family of origin															
Birth order	2	1	2	1	1	2	—	6	6	6	2	—	1	2	1
Family size	7	1	2	2	2	2	—	6	6	9	2	—	1	2	2
Social class index (HOLLINGSHEAD)	19	11	23	11	11	49	—	37	45	37	11	—	19	44	33
Number of patients completed	12	13	12	3	8	12	6	9	11	8	13	6	4	11	10
Number of drop outs	4	8	4	1	6	9	1	1	7	8	4	0	2	5	6
Number of other incompletes	6	3	5	1	4	3	0	2	6	7	2	1	3	4	3

including the manner of introducing the medications in the respective roles, which the study doctors were asked to memorize verbatim. After the study doctors had reviewed the instructions and the interview transcripts, they met in groups (T and E) with the research staff for a replay of the taped interviews, followed by a question-and-answer period to clarify ambiguities and to anticipate problematic situations.

After the study doctors had familiarized themselves with the material initially presented to them, they continued to meet in groups of T and E doctors with the research staff. During these sessions, the study doctors alternated playing doctor and patient and later practised their roles further with members of the research staff serving as patients. They continued this "psychodrama" technique until the research psychiatrists judged that the study doctors had sufficiently assimilated their roles.

Then two patients were assigned to each study doctor for practice. These patients were not included in tablulating the data. They served as an exercise in the procedure for all research personnel. The research psychiatrists observed the study doctors' performance through a one-way mirror or listened to tapes recorded during the practice interviews. By the time the study doctors had completed two practice patients apiece, the research psychiatrists were satisfied that their role performance was adequate to begin seeing patients for the study proper.

The training period for the two doctors who replaced those dropping out was somewhat abbreviated, particularly in the omission of practice patients. However, the performance of the new study doctors was carefully monitored, and their first patients were included in the study only after the research psychiatrists judged that the doctors' role performance with these patients had been adequate.

Therapeutic and Experimental Roles

The study doctor performed his specific role within the matrix of a brief clinical interview which was similar in many respects for all study doctors in both roles. First sessions usually lasted about 30 min and later sessions about 15 min. The study doctor always focused discussion on the patient's symptomatic complaints, the treatment regimen and also, in later interviews, the patient's co-operation with the regimen. The study doctor specifically tried to avoid engaging in psychotherapy.

The study doctor's verbal attitude toward these procedures and especially toward the medication constituted the crucial difference between the therapeutic and the experimental roles. The T doctor maintained a solicitous, confident and enthusiastic attitude. He approached his work with the patient as a treatment situation. He communicated to the patient a pervasive assurance that the medication was effective for his particular complaints.

The E doctor maintained a more detached, uncertain, observing attitude. He approached his work with the patient as an evaluative situation. He communicated to the patient that the medication was as yet of uncertain value for the patient's particular complaints. (He specifically avoided taking the alternative position that the medication was of little or no value for the patient's complaints.) The study doctors handled all details of their interviews according to the fundamental attitudes represented by their respective roles.

The T doctor presented the medication to the patient as if he had selected it especially for this patient. He stressed repeatedly and with confidence the known value of the drug for the patient's particular complaints. He brought up the medication's most common side-effect, drowsiness, by referring to the frequent correlation between drowsiness and beneficial therapeutic action. He repeated similar optimistic comments about the medication whenever the patient's conversation provided a suitable opening.

The E doctor, on the other hand, presented the medication to the patient on the basis that the clinic was trying to determine its value for complaints like the patient's. He stressed that only the medicine's safety had been established, but not its effectiveness. He suggested that the medication might or might not help the patient's complaints. He repeated such comments whenever the patient's conversation presented a suitable opportunity. He did not mention any possible side-effects.

During subsequent interviews, the study doctors continued along the same general lines as before. Whenever the patient reported any favorable symptomatic change, the T doctor took the opportunity to relate the improvement to the medication and the predictions he had made about its therapeutic value. He also interpreted any side-effects as signs of the medication's activity, and took the opportunity to suggest again its effectiveness for the patient's particular complaints.

The E doctor accepted reports of improvement with reserve, and did not relate them specifically to the medication. When the patient reported side-effects, the E doctor simply reassured the patient about the medicine's safety. He did not relate the side-effects to its beneficial activity in any way.

In order to avoid interference between the two roles, each study doctor played only one role. Patients seen by T doctors came to the clinic on different days from patients seen by E doctors.

The research psychiatrist observed every interview through a one-way vision screen or by closed-circuit television. He promptly discussed with the study doctor any problems in his role performance in order to maintain the roles uniform throughout the period of the study. Every interview also was transcribed from the tape-recordings. Staff members of the

Psychopharmacology Service Center monitored the role performance of the study doctors by means of these transcripts in the early phase of the study.

Patients' Role Perceptions

The patients' perceptions of the study doctors' T and E roles was formally evaluated by two methods. Immediately after each study doctor's initial interview with his first two (practice) patients, the research psychiatrist interviewed the patient to elicit the patient's perception of his doctor's attitude toward the medication. These eight interviews at each clinic were tape-recorded and transcribed. 4 of the 24 interviews were lost because of recording difficulties.

Three judges independently rated each of the remaining 20 interviews on the question, from the patient's viewpoint, "How certain is his doctor of the drug's efficacy?" The judges made their ratings on a six-point scale ranging from "extremely uncertain" to "extremely certain" without knowing in advance which patients had been exposed to the T and E roles. All three raters judged that the patients perceived the T doctors as significantly ($p < .05$) more certain of the drug's efficacy than the E doctors, with differences of 0.83, 1.24 and 2.37 on the six-point scale (FISHER *et al.*, 1964).

The three judges also rated the 20 interviews on a second question, "How certain is the patient of the drug's efficacy?" All three raters judged the patients of T doctors as more certain of the drug's efficacy than the patients of E doctors, with differences of 0.09, 0.17 and 0.71 on the six-point scale. However, only the third difference reached significance ($p < .05$). The correlations between ratings made by different judges also were lower than for the first question.

After his last study visit, each patient described his doctor in terms of 38 adjectives or phrases[1]. The patient indicated how much each item applied to his doctor on a four-point scale: 1. not at all, 2. a little, 3. quite a bit or 4. extremely. The list of adjectives included five describing the T role: a) encouraging, b) optimistic, c) gives straight answers, d) takes you into his confidence and e) explains things. The list also included five items describing the E role; but these, along with other negatively-toned adjectives on the list, were hardly ever used by patients to describe their doctors. Patients apparently made discriminations between doctors only in the degree to which their descriptions were positive. Consequently a T scale containing only the five T items was scored by summing the raw scores of these five items and dividing by five. The patients rated the T doctors at 1.39 and the E doctors at 1.28 on this scale. The difference

[1] This instrument for assessing the patient's perception of his doctor was developed by Dr. MITCHELL BALTER of the Psychopharmacology Service Center.

between the two group means reached borderline significance with an F ratio of 3.53 and $p < .10$.

"Encouraging" and "optimistic", which most strongly characterize the T role, showed highly significant differences. Patients considered their doctors "encouraging" at a level of 2.97 under the T role and 2.55 under the E role. This difference is significant with an F ratio of 8.79 and $p < .005$. Patients considered their doctors "optimistic" at a level of 2.82 under the T role and 2.50 under the E role. This difference is significant with an F ratio of 5.69 and $p < .025$. Differences of a similar magnitude and direction appeared on the item "gives straight answers".

The T scale also showed marked differences among clinics in the way patients perceived their doctors, quite apart from the roles played by the doctors. Patients rated their doctors 1.18 at JHH, 1.58 at PGH and 1.29 at HUP on this scale. These differences were significant with an F ratio of 19.33 and $p < .001$. The individual items of the T scale mentioned above showed similar clinic differences, with the patients at PGH consistently viewing their doctors as outstandingly T.

Medications

The medications consisted of pink No. 2 capsules containing 200 mg of meprobamate and inert placebos of identical appearance. Each patient was given either meprobamate or placebo for the entire 6 week period of the study. The prescribed dosage of each medication was 2 tablets four times a day (1,600 mg meprobamate daily).

The medication was identified only by a separate code number for each patient. Personnel at the Psychopharmacology Service Center coded the bottles and shipped the medication to the participating clinics in order to avoid contact between the coders and the clinical personnel.

The research psychiatrist at each clinic had a copy of the master code identifying the medication prescribed for each patient. The codes for each group of ten patients were sealed in a separate envelope, so that the codes for the entire study would not be broken in case of a single emergency.

At every treatment visit the doctor gave the patient three bottles (50 capsules per bottle) of medication. He asked the patient to return the bottles with the remaining medication at his next visit, when the technician counted the remaining capsules and entered this count in the patient's research record. The doctor also asked the patient to report any irregularities in his taking of the medication.

After every interview except the patient's first, the study doctor was asked to guess whether the patient had been taking meprobamate or placebo. He also indicated how confident he felt about his guess. Although the results of this procedure are discussed in detail elsewhere (Lipman *et al.*, 1965; Rickels *et al.*, in preparation b), it is worth noting here that

the doctors consistently "broke the double-blind." Their "correct guessing" was related only slightly to the presence or absence of side effects, but was closely correlated with improvement. When a patient improved, irrespective of whether he was on drug or placebo, the doctor guessed that the patient was taking drug; and when a patient was unimproved, the doctor guessed that he was taking placebo.

Measures of Response

Patient's Symptom Check List (SCL) score: At each treatment visit, the patient reported his discomfort on a list of 64 symptoms (PARLOFF *et al.*, 1954; FRANK *et al.*, 1957). The patient indicated how much each symptom had bothered him during the previous week on a four-point scale: 1. not at all, 2. a little, 3. quite a bit and 4. extremely. A technician administered the form, and the patient filled it out independently before each interview with the doctor. The patient's SCL score was obtained by summing his responses to the individual symptoms on the list and dividing by the total number of symptoms.

Patient's Target Symptom (TS) score: A group of "target symptoms" was identified at the patient's first treatment visit. A complaint (a symptom rated 2, 3 or 4) reported both by the patient on his symptom check list and by his doctor on a similar check list that the doctor filled out after his interview with the patient, was defined as a target symptom. The patient's TS score at each visit was obtained by summing his responses to this same group of symptoms and dividing the total by the number of target symptoms originally defined.

Patient's Anxiety Scale (ANX) score: At each treatment visit the patient reported his anxiety on a list of 15 adjectives (CLYDE, 1960; MCNAIR and LORR, 1964), 10 positive (e.g., nervous) and 5 negative (e.g., calm). The patient indicated how much each adjective applied to him during the previous week on the same four-point scale used for the SCL. A technician administered the form, and the patient filled it out independently before his interview with the doctor. The patient's ANX score was obtained by computing the algebraic sum of his mean response to the ten positive adjectives and his mean response to the five negative adjectives.

Patient's Depression Scale (DEPR) score: At each treatment visit the patient reported his depressive mood on a list of 15 adjectives (CLYDE, 1960; MCNAIR and LORR, 1964), 10 positive (e.g., depressed) and 5 negative (e.g., cheerful). The procedure for administering and scoring this measure was the same as for the ANX scale.

Patient's Global Rating of Change: At each treatment visit (except the first) the patient recorded the overall change in the way he felt during the previous week compared with the way he felt before his first visit.

The patient indicated his global change on a seven-point scale ranging from 7. very much worse, through 4. no change to 1. very much better. A technician elicited this rating from the patient before his interview with the doctor.

Doctor's Target Symptom score: After each treatment visit the doctor reported the patient's complaints on the same list of 64 symptoms used by the patient. The doctor's TS score at each visit was obtained by summing his reports on the group of target symptoms originally defined and dividing the total by the number of target symptoms.

Doctor's Anxiety Scale score: After each treatment visit the doctor reported the patient's anxiety on the same list of 15 adjectives used by the patient. The doctor indicated how much each adjective applied to the patient during the interview, and the doctor's ANX score was obtained by the same scoring procedure as the patient's ANX score.

Doctor's Global Rating of Change: After each treatment visit (except the first) the doctor reported the patient's overall change since his first treatment visit on the same scale used by the patient.

Results

Fig. 3 shows the patients' mean target symptom (TS) scores by clinics for each treatment condition at visit 2, adjusted for their respective TS scores at visit 1. A higher score indicates a higher level of symptomatic distress.

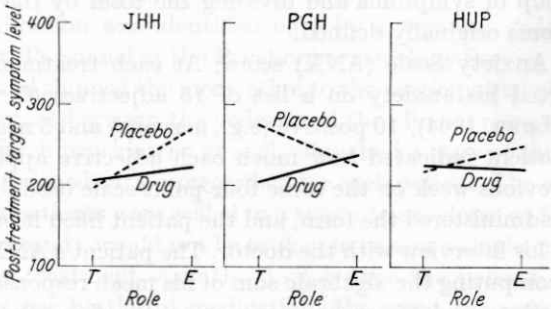

Fig. 3. Target symptom scores for patients at each clinic after 2 weeks under each treatment condition scores adjusted for initial level

The figure shows a clear-cut interaction between the drug and role variables at PGH: under the T role, patients taking meprobamate felt distinctly more relief than patients taking placebo, whereas under the E role, patients taking meprobamate felt, if anything, a little less relief than patients taking placebo.

The figure also suggests an interaction between the drug and role variables at JHH and HUP, but in the opposite direction: under the

E role, patients taking meprobamate felt more relief than patients taking placebo, whereas under the T role, patients taking both drugs felt about the same degree of relief. In short, there was a triple interaction among the drug, role and clinic variables.

Table 6. *Patients' ratings—Adjusted means by treatment condition for patients completing study*

Period			2 weeks		4 weeks		6 weeks	
Medication			Mep	Plac	Mep	Plac	Mep	Plac
Rating	Clinic	Role						
	JHH	T	2.71	2.00	2.71	2.20	2.93	2.00
		E	2.70	3.31	2.80	3.42	2.70	3.33
Global	PGH	T	2.28	3.42	1.80	2.64	2.00	2.33
		E	3.40	2.62	2.60	1.38	3.10	2.11
	HUP	T	3.08	3.25	2.64	3.00	3.38	3.00
		E	3.00	3.54	2.25	3.42	2.62	3.17
	JHH	T	1.62	1.62	1.66	1.68	1.61	1.62
		E	1.77	1.80	1.71	1.71	1.64	1.74
SCL	PGH	T	1.69	1.85	1.62	1.74	1.54	1.79
		E	1.77	1.68	1.72	1.69	1.68	1.80
	HUP	T	1.72	1.65	1.65	1.67	1.60	1.63
		E	1.73	1.81	1.72	1.90	1.73	1.75
	JHH	T	2.06	1.99	2.21	2.06	2.07	2.00
		E	2.23	2.50	2.14	2.28	2.08	2.23
TS	PGH	T	2.04	2.54	1.92	2.22	1.80	2.37
		E	2.37	2.26	2.32	2.01	2.17	2.13
	HUP	T	2.26	2.19	2.12	2.12	2.10	2.19
		E	2.23	2.48	2.00	2.64	2.14	2.38
	JHH	T	−47.68	− 2.41	−15.47	−12.43	−20.33	−29.26
		E	3.04	14.62	− 9.04	10.98	−11.66	− 8.04
ANX	PGH	T	−17.27	24.29	−38.32	7.92	−61.51	32.34
		E	2.59	− 6.32	− 6.35	−13.43	−21.28	−22.80
	HUP	T	18.95	4.97	6.15	0.93	−28.80	− 9.29
		E	−19.42	40.48	−33.31	50.93	−27.68	− 6.56
	JHH	T	−42.75	−36.12	−12.13	−22.45	−28.12	−62.00
		E	−28.87	−37.41	−36.76	−27.28	−48.53	−18.19
DEPR	PGH	T	−49.02	0.84	−77.10	0.70	−91.67	0.10
		E	−20.11	−22.55	−11.40	−50.14	−40.51	−14.96
	HUP	T	16.24	−19.84	−14.81	−30.03	−38.99	−38.33
		E	− 3.72	5.33	−36.01	20.92	−15.25	− 7.81

The results presented above illustrate the trends observed with the eight criterion ratings at the end of 2, 4 and 6 weeks of the experimental treatments. Graphs for the remaining 23 groups of means are omitted in order to conserve space. However, Tables 6 and 7 present the 24 complete groups of means, adjusted by covariance for initial levels, and Table 8 presents the number of patients entering into each mean.

Table 7. *Doctors' ratings—Adjusted means by treatment conditon for patients completing study*

Period			2 weeks		4 weeks		6 weeks	
Medication			Mep	Plac	Mep	Plac	Mep	Plac
Rating	Clinic	Role						
	JHH	T	2.64	2.80	2.71	3.00	2.43	2.30
		E	2.80	3.46	2.40	3.00	2.40	2.83
Global	PGH	T	2.36	3.08	2.33	2.82	2.29	2.75
		E	3.20	3.38	3.00	2.75	3.00	2.22
	HUP	T	2.77	2.88	2.21	3.11	2.92	3.12
		E	3.22	3.27	3.12	3.42	2.50	2.83
	JHH	T	2.16	2.20	2.54	2.15	2.37	1.85
		E	2.32	2.69	2.13	2.43	1.97	2.18
TS	PGH	T	1.86	2.23	1.78	1.89	1.79	2.22
		E	2.44	2.24	2.47	1.90	2.30	1.74
	HUP	T	2.07	2.02	2.06	2.04	2.18	1.93
		E	2.37	3.03	2.56	2.80	2.44	2.82
	JHH	T	−29.77	3.34	1.08	− 2.11	−33.10	−42.96
		E	2.16	44.50	−50.02	10.37	−50.22	−11.06
ANX	PGH	T	−56.66	28.91	−83.78	−17.21	−63.11	−22.77
		E	66.75	67.06	48.52	−17.17	58.63	− 2.96
	HUP	T	24.16	6.89	22.92	14.78	1.12	36.97
		E	83.45	80.24	72.98	54.76	34.73	21.95

Table 8. *Number of patients with complete data by type of rating and treatment condition*

Period			2 weeks		4 weeks		6 weeks	
Medication			Mep	Plac	Mep	Plac	Mep	Plac
Rating	Clinic	Role						
Patients'	JHH	T	14	10	14	10	14	10
Global		E	10	13	10	12	10	12
and	PGH	T	14	12	15	11	14	12
Doctors'		E	10	8	10	8	10	9
Global	HUP	T	13	8	14	9	13	8
		E	9	11	8	12	8	12
All	JHH	T	14	11	14	11	14	11
other		E	10	13	10	13	10	13
Ratings	PGH	T	15	12	15	12	15	12
		E	10	9	10	9	10	9
	HUP	T	14	9	14	9	14	9
		E	9	12	9	12	9	12

At PGH the drug by role interaction is strong and consistent throughout the means data. The opposite drug by role interaction at JHH and HUP is much weaker and less consistently present, though still predominating.

Table 9. *Patients' ratings—Results of covariance analysis by treatment condition for patients completing study*

Period		2 weeks		4 weeks		6 weeks	
Treatment Condition	Rating	*F*	*p*	*F*	*p*	*F*	*p*
	Global	7.65	<.001	6.71	<.01	4.42	<.05
	SCL	2.16	—	0.83	—	0.40	—
D×R×C	TS	3.37	<.05	5.87	<.01	2.52	<.10
	ANX	1.80	—	1.82	—	1.20	—
	DEPR	1.03	—	3.53	<.05	1.68	—
	Global	0.01	—	0.00	—	0.82	—
	SCL	0.08	—	0.01	—	0.03	—
D×R	TS	0.01	—	0.46	—	0.20	—
	ANX	0.03	—	0.31	—	0.74	—
	DEPR	0.09	—	0.09	—	0.01	—
	Global	0.67	—	1.51	—	0.18	—
	SCL	0.21	—	0.22	—	1.06	—
D×C	TS	0.40	—	1.56	—	1.01	—
	ANX	0.04	—	0.27	—	1.18	—
	DEPR	0.82	—	0.38	—	2.17	—
	Global	0.69	—	1.20	—	1.43	—
	SCL	1.99	—	0.63	—	0.06	—
R×C	TS	1.08	—	0.37	—	0.00	—
	ANX	0.81	—	0.02	—	0.08	—
	DEPR	0.03	—	0.48	—	0.11	—
	Global	1.48	—	1.65	—	0.46	—
	SCL	0.51	—	1.30	—	3.14	<.10
Drug	TS	3.04	<.10	2.15	—	4.27	<.05
	ANX	2.91	<.10	2.59	—	2.39	—
	DEPR	0.12	—	1.14	—	2.22	—
	Global	4.24	<.05	1.62	—	1.40	—
	SCL	3.45	<.10	2.70	—	3.36	<.10
Role	TS	4.89	<.05	3.67	<.10	2.03	—
	ANX	0.80	—	0.64	—	0.16	—
	DEPR	0.08	—	0.10	—	1.96	—
	Global	2.80	<.10	6.24	<.01	4.21	<.05
	SCL	0.56	—	0.44	—	0.13	—
Clinic	TS	0.56	—	1.05	—	0.76	—
	ANX	0.96	—	0.82	—	0.02	—
	DEPR	2.66	<.10	0.92	—	0.41	—

Tables 9 and 10 show the *F* ratios and *p* values derived from the analysis of covariance for each criterion rating in relation to all treatment conditions at the end of each treatment period. The drug by role by clinic interaction is the most consistently reliable, although the role effect by itself shows striking *F* ratios in some of the study doctors' ratings. (Some significant *F* ratios for the role effect appear among the patients' ratings,

but all of these occur in the presence of a significant triple interaction.) The drug effect by itself shows only scattered significant F ratios.

Analyses of covariance also were performed within each clinic for six of the criterion ratings (three by patients and three by study doctors) in relation to the drug and role variables, at the end of each treatment

Table 10. *Doctors' ratings—Results of covariance analysis by treatment condition for patients completing study*

Period		2 weeks		4 weeks		6 weeks	
Treatment Condition	Rating	F	p	F	p	F	p
	Global	1.02	—	1.08	—	2.52	$<.10$
D×R×C	TS	2.64	$<.10$	2.97	$<.10$	5.19	$<.01$
	ANX	1.05	—	2.94	$<.10$	1.78	—
	Global	0.00	—	1.00	—	0.29	—
D×R	TS	0.39	—	0.19	—	0.28	—
	ANX	0.42	—	0.52	—	0.88	—
	Global	0.67	—	0.60	—	0.30	—
D×C	TS	0.16	—	0.46	—	0.33	—
	ANX	1.35	—	0.49	—	0.09	—
	Global	0.18	—	2.22	—	1.00	—
R×C	TS	0.78	—	2.27	—	1.89	—
	ANX	0.70	—	2.27	—	1.56	—
	Global	4.71	$<.05$	6.76	$<.02$	0.31	—
Drug	TS	3.49	$<.10$	0.12	—	0.03	—
	ANX	2.76	$<.10$	0.24	—	0.14	—
	Global	10.72	$<.01$	3.94	$<.05$	0.06	—
Role	TS	15.70	$<.001$	6.67	$<.05$	2.24	—
	ANX	16.36	$<.001$	3.62	$<.10$	3.61	$<.10$
	Global	0.15	—	0.66	—	1.60	—
Clinic	TS	1.29	—	3.68	$<.05$	2.73	$<.10$
	ANX	2.75	$<.10$	5.36	$<.01$	3.62	$<.05$

period. At JHH the drug by role interaction was significant at $p<.10$ (two-tailed) in two of the patients' nine ratings. The role effect by itself was significant in two of the patients' ratings and in one of the doctors' nine ratings. The drug effect by itself was significant in one of the doctors' ratings.

At PGH the drug by role interaction was significant in six of the patients' nine ratings and in three of the doctors' nine ratings. The role effect by itself was significant in four of the doctors' ratings. The drug effect by itself was significant in one of the doctors' ratings.

At HUP the drug by role interaction was significant in one of the patients' nine ratings. The role effect by itself was significant in four of the doctors' nine ratings. The drug effect by itself was significant in one of the patients' ratings and one of the doctors' ratings.

Discussion[2]

This study strikingly reaffirms, in a very concrete fashion, the richness and complexity of the situations in which the psychiatric clinician and clinical investigator operate. These complexities probably become most apparent in situations subject to multiple subtle effects, as in this study of psychoneurotic outpatients under the influence of a mild tranquilizer and a doctor with whom the patient has relatively little contact. In another collaborative study (NIMH Psychopharmacology Service Center Collaborative Study Group, 1964; COLE, personal communication, 1964) involving nine hospitals, for example, where grossly disturbed, schizophrenic patients were treated with potent tranquilizers and intensive contact with a hospital milieu, the results of the experimental treatments conformed to a simple additive model.

In one sense, the results of the present study support all three hypotheses posed at the outset: each of the participating variables must have exerted its own effect in order to produce interaction. In another and more important sense, however, the hypotheses were only conditionally borne out, since the effect of each variable was subject to significant modification by the effects of other variables operating in the same field. To speak broadly of meprobamate as more effective than placebo (hypothesis 1) overlooks the crucial point that this statement held only under certain conditions of doctor's expressed attitude and clinic. It is equally misleading to say without qualification that meprobamate was no more effective than placebo[3].

Similar considerations apply to the statement that meprobamate was more effective than placebo for enthusiastic doctors (hypothesis 3), which held only for one clinic. In this connection, it is important to recognize that variations in results among the three clinics in this study came about in spite of painstaking effort to assure uniform experimental conditions. The results obtained, then, seem to call for an elaboration of the original hypotheses to include other subtle but critical variables differentially affecting the drug by role interaction at the three participating clinics.

The detailed information available about the patients and the study doctors shows some clear-cut differences between PGH and the other two clinics which are highly suggestive. As noted before, the educational and occupational variables indicate that the social class status of the three patient subsamples progresses from PGH through JHH to HUP. The

[2] Aspects of the study which are omitted from this report have been discussed elsewhere: a) relationships among the various measures of response (PARK *et al.*, 1965), b) drug effects and initial level of symptoms (FISHER *et al.*, 1965) and c) side reactions to the medications (RICKELS *et al.*, in preparation a).

[3] See FISHER *et al.*, 1964, for a more detailed exposition of these views.

patients' complaints, goals for and expectations about the treatment show the corresponding progressions (HOLLINGSHEAD and REDLICH, 1958). In particular, the experience of taking a medication as such conformed more closely to the initial treatment expectations of the patients at PGH than at the other two clinics.

Even more striking, however, are the differences among the study doctors at the three clinics. The doctors at PGH stand out as coming from families of lower social class status than the doctors at JHH and HUP. They also show a greater preference for the T role.

Quite probably, then, the attitudes toward medication represented by the T role were more congenial to both patients and doctors at PGH than at the other two clinics. Conversely, the E role probably seemed especially foreign to the participants at PGH. The uniquely high T scale scores for the patients at PGH, whether or not they were exposed to T doctors, appear to reflect attitudes of this kind.

The evidence that the study doctors correctly spoke and the patients correctly heard both roles at all clinics does not preclude this point of view: the T role may carry "positive" *meaning* for people of lower social class background, whereas the E role may carry a similar "positive" *meaning* for people of higher social class background. "Positive" meaning may be evoked by a role *appropriate* to the person's existing attitudes, which grew out of his background experience. Such a reversal in the roles' significance for participants at different clinics is consistent with the dilution or even reversal of the drug by role interaction observed at JHH and HUP in contrast to PGH.

In addition to the above considerations, which deal separately with the patients' and the doctors' social class backgrounds, the *match* between doctors and patients is closer at PGH than at the other two clinics. This situation could potentiate the transmission of roles as well as less specific positive feelings, such as mutual understanding and liking between patient and doctor.

It is difficult to judge the importance of the significant F ratios for role effects shown by the doctors' ratings. The corresponding means data tend to follow the general pattern of interaction, although this pattern does not often reach statistical significance in the doctors' ratings. Perhaps it is worth noting at least that JHH contributes least significantly to any pure role effects in the doctors' ratings. Only at JHH did the E doctors favor their role enough to predict that it would be more effective than the T role — an attitude consonant with their high social class backgrounds. The T doctors and the E doctors at JHH, then, were unique in regarding their roles as about equally positive. The suggestive pattern of role effects in the ratings made by the study doctors probably reflects

their differing attitudes about their respective roles, since double-blind controls could not be applied to the role variable.

A special reservation in interpreting the data of this study remains to be considered. Although great pains were taken to assure the uniform selection of patients and their assignment to the drug and role conditions, a similar degree of control could not be exercised over their co-operation with the experimental treatment. In fact, fewer patients dropped out from the meprobamate-T role condition than from the other three treatment conditions (FISHER *et al.*, 1964).

Since the patients' reasons for dropping out and particularly their clinical status are unknown, it is difficult to assess the effect of the differential dropout upon the results of the study. The simple assumption that these patients dropped out because they were not improving seems inadequate (UHLENHUTH *et al.*, 1965). Consequently the results reported and discussed here are valid in a strict sense only for the sample completing the study. From the viewpoint of the entire group entering the study, the results could be biased in an unknown direction. This limitation reduces their usefulness to the clinician and suggests that provision be made to follow all patients entering a study—a plan adopted by the authors in their further work.

In the present instance, however, an analysis of the patients' ratings at the end of the first 2 weeks of the study for all 193 patients who returned at that time sheds some light on the possible effect of the differential dropout, which occurred later on. The results of these analyses overall are very similar to those for only the 138 patients who completed the entire study, as regards both the means for the various treatment conditions and the F ratios between conditions. The only noteworthy contrast between the two analyses is the tendency for higher mean levels of symptomatic distress at JHH in the placebo-T role condition when all 193 patients are considered. Reference to Fig. 3 shows that this shift tends to reduce the drug by role interaction or to swing it in the direction of the interaction at PGH. The drug by role interaction at JHH then occupies a position intermediate between that of the other two clinics, a position which, incidentally, is consonant with the ordering of the characteristics of the patient populations at the three clinics.

The results of this study emphasize again the importance of exploring further the complications attending responses to medications and suggest some additional avenues of approach. In order to resolve contradictions among different clinical studies of the same medication, it becomes important to identify non-drug effects in quantifiable form and to build adequate models relating these effects to the pharmacologic effects under study. Models of this sort eventually may increase the degree of control available to the physician conducting psychiatric treatment, especially in an outpatient or community setting.

Appendix

List of Participants

Johns Hopkins Hospital	Philadelphia General Hospital
E. H. Uhlenhuth, M.D.	Karl Rickels, M.D.
Lee C. Park, M.D.	John Mock, M.D.
Faruk Abbuzzahab, M.D.	Oscar Cataldi, M.D.
Jairo Bernardes, M.D.	Robert De Silvero, M.D.
Alvaro Gallegos, M.D.	Guy Le Tourneau, M.D.
Ari Kiev, M.D.	Charles Weise, M.D.
Ira Liebson, M.D.	Norman Wong, M.D.
	Robert Yee, M.D.
Mary E. Sewell	Karen Gatto
Carol J. Taylor	

Hospital of the University of Pennsylvania	NIMH-Psychopharmacology Service Center
Karl Rickels, M.D.	Seymour Fisher, Ph.D.
Larry Snow, M.D.	Ronald S. Lipman, Ph.D.
N. Craig Baumm, M.D.	Mitchell Balter, Ph.D.
Arnold Gessel, M.D.	Seymour Barron, Ph.D.
Jerome Goodman, M.D.	Elizabeth Hackett, Ph.D.
Jerome Komisaroff, M.D.	
Murray Locke, M.D.	
Tobi Hesbacher	
Marilyn Wolff	

Summary

138 psychoneurotic outpatients manifesting anxiety were treated for 6 weeks with medication and brief, supportive interviews every 2 weeks with a psychiatric resident. The patients were divided among 12 different treatment conditions composed of 1. meprobamate 1,600 mg q.i.d. versus an identical placebo in a double-blind arrangement, 2. a doctor expressing an enthusiastic attitude toward the medication versus a doctor expressing a skeptical attitude toward the medication and 3. three different psychiatric outpatient clinics.

The patient's symptomatic condition was assessed at each visit by means of five ratings made by the patient before each interview and three ratings made by his doctor afterward. These ratings included an overall judgment of change, a checklist of 64 common symptoms, a score based on the patient's presenting complaints and adjective checklists for registering anxiety and depression.

The results at one clinic showed the expected interaction between medication and doctor's expressed attitude: with the enthusiastic doctors, patients taking meprobamate improved more than patients taking

placebo; whereas with the skeptical doctors, patients taking placebo tended to improve more than patients taking meprobamate. At the other two clinics, however, this interaction was absent or possibly reversed, with meprobamate tending to be superior to placebo with skeptical doctors.

Some striking clinic differences among the characteristics of patients were found, particularly in social class status and the commonly associated styles of complaint and goals and expectations regarding treatment. The clinic showing the anticipated interaction between medication and doctor's verbal attitude had patients with the lowest social class standing. The doctors at this clinic also came from backgrounds of lower social class than the doctors at the other two clinics. These differences suggest that the participants at this clinic may have assigned meanings to the enthusiastic and the skeptical attitudes contrasting with the meanings assigned at the other two clinics. The possible relevenace of these differences to the results is discussed.

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