

Assessment of Older People: Self-Maintaining and Instrumental Activities of Daily Living¹

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THE use of formal devices for assessing function is becoming standard in agencies serving the elderly. In the Gerontological Society's recent contract study on functional assessment (Howell, 1968), a large assortment of rating scales, checklists, and other techniques in use in applied settings was easily assembled. The present state of the trade seems to be one in which each investigator or practitioner feels an inner compulsion to make his own scale and to cry that other existent scales cannot possibly fit his own setting. The authors join this company in presenting two scales first standardized on their own population (Lawton, 1969). They take some comfort, however, in the fact that one scale, the Physical Self-Maintenance Scale (PSMS), is largely a scale developed and used by other investigators (Lowenthal, 1964), which was adapted for use in our own institution. The second of the scales, the Instrumental Activities of Daily Living Scale (IADL), taps a level of functioning heretofore inadequately represented in attempts to assess everyday functional competence. Both of the scales have been tested further for their usefulness in a variety of types of institutions and other facilities serving community-resident older people.

Before describing in detail the behavior measured by these two scales, we shall briefly describe the schema of competence into which these behaviors fit (Lawton, 1969). Human behavior is viewed as varying in the degree of complexity required for functioning in a variety of tasks. The lowest level is called life maintenance, followed by the successively more complex levels of func-

tional health, perception-cognition, physical self-maintenance, instrumental self-maintenance, effectiveness (activity emanating from the motivation to explore), and social behavior. While each of these levels generally requires greater complexity of neuropsychological organization than the one preceding it, complexity varies widely within each level, so that specific activities can be arranged in the hierarchy only with knowledge of both the within- and among-levels complexity of the activity.

The functioning human being may thus be assessed by measuring instruments designed to tap representative behavior at each level and within the range of competence appropriate to the individual.

Physical Self-maintenance

Among the many scales for measuring activities of daily living that have been devised, the one developed at the Langley-Porter Neuropsychiatric Institute by Simon, Lowenthal, and their associates (Lowenthal, 1964) has frequently been utilized by later investigators. This scale asks an observer to rate the S for his competence in the behaviors of toileting, feeding, dressing, grooming, locomotion, and bathing. For a sample of over 500 consecutive admissions to the psychiatric ward of a city hospital, proper dichotomization of the six items resulted in a scale meeting appropriate Guttman scaling criteria. The present authors found the original Langley-Porter scale useful in their own home for aged, but felt that it would be more useful to treatment personnel if each scale had the same number of points and the content was broadened in some instances so as to be applicable to either community residents or residential care patients.

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The six types of behavior assessed by the Langley-Porter scale and many of the points from their scale were retained. After several versions were tried, the items and scale points appearing in Table 1 were adopted as the final version of the Physical Self-Maintenance Scale (PSMS).

Instrumental Activities of Daily Living

Because of the extreme diversity of possible tasks performed by normal adults prior to the period designated as "old age," the task of measuring the instrumental competence of this group is extremely complicated as indicated by such noble, though unsatisfying, efforts as those of Barrabee, Barrabee, and Finesinger (1955), Phillips (1968), and others. However, both biological and social pressures combine to level this diversity drastically during old age. For women, the maintenance of earlier life levels of adequacy in such tasks as

shopping, cooking, and manner of doing laundry may be the best means of assessing general competence. While the list of such representative activities is smaller for men, one can still differentiate their performance of tasks such as use of transportation, or handling money, as the basis for measuring competence.

Table 2 shows the behaviors and scale points chosen for inclusion in a scale of Instrumental Activities of Daily Living (IADL).

Procedure

Subjects.—Inasmuch as one aim of the study was to develop instruments applicable in a number of situations, 265 Ss were obtained from a variety of sources, as indicated in Table 3. All were 60 and over, diverse and unselected as to sex, race, and economic level; 97 were male, 168 female.

Table 1. Physical Self-Maintenance Scale.

	Score	% Correct	% Error		Score	% Correct	% Error
A. Toilet		66	3.8	D. Grooming (neatness, hair, nails, hands, face, clothing)		42	9.4
1. Cares for self at toilet completely, no incontinence.	1			1. Always neatly dressed, well-groomed, without assistance.	1		
2. Needs to be reminded, or needs help in cleaning self, or has rare (weekly at most) accidents.	0			2. Grooms self adequately with occasional minor assistance, e.g., shaving.	0		
3. Soiling or wetting while asleep more than once a week.	0			3. Needs moderate and regular assistance or supervision in grooming.	0		
4. Soiling or wetting while awake more than once a week.	0			4. Needs total grooming care, but can remain well-groomed after help from others.	0		
5. No control of bowels or bladder.	0			5. Actively negates all efforts of others to maintain grooming.	0		
B. Feeding		77	3.8	E. Physical Ambulation		27	7.9
1. Eats without assistance.	1			1. Goes about grounds or city.	1		
2. Eats with minor assistance at meal times and/or with special preparation of food, or help in cleaning up after meals.	0			2. Ambulates within residence or about one block distant.	0		
3. Feeds self with moderate assistance and is untidy.	0			3. Ambulates with assistance of (check one) a () another person, b () railing, c () cane, d () walker, e () wheel chair.	0		
4. Requires extensive assistance for all meals.	0			1—Gets in and out without help.			
5. Does not feed self at all and resists efforts of others to feed him.	0			2—Needs help in getting in and out.			
C. Dressing		56	4.2	4. Sits unsupported in chair or wheelchair, but cannot propel self without help.	0		
1. Dresses, undresses, and selects clothes from own wardrobe.	1			5. Bedridden more than half the time.	0		
2. Dresses and undresses self, with minor assistance.	0			F. Bathing		43	4.2
3. Needs moderate assistance in dressing or selection of clothes.	0			1. Bathes self (tub, shower, sponge bath) without help.	1		
4. Needs major assistance in dressing, but cooperates with efforts of others to help.	0			2. Bathes self with help in getting in and out of tub.	0		
5. Completely unable to dress self and resists efforts of others to help.	0			3. Washes face and hands only, but cannot bathe rest of body.	0		
				4. Does not wash self but is cooperative with those who bathe him.	0		
				5. Does not try to wash self and resists efforts to keep him clean.	0		
	Rep. ± .96		N ± 265		Rep = .96		N = 265

Table 2. Instrumental Activities of Daily Living Scale.

Score	Male			Score	Female		Score	Male		Score	Female	
	% Correct	% Error			% Correct	% Error		% Correct	% Error		% Correct	% Error
	64	5.2	A. Ability to use telephone		68	4.8					41	6.0
1			1. Operates telephone on own initiative—looks up and dials numbers, etc.	1						1		
1			2. Dials a few well-known numbers.	1						1		
1			3. Answers telephone but does not dial.	1						0		
0			4. Does not use telephone at all.	0			27	4.1			30	10.0
	15	5.2	B. Shopping		15	3.0	1					
1			1. Takes care of all shopping needs independently.	1			1			1		
0			2. Shops independently for small purchases.	0						1		
0			3. Needs to be accompanied on any shopping trip.	0			0			1		
0			4. Completely unable to shop.	0						0		
			C. Food Preparation		20	2.4	0					
			1. Plans, prepares and serves adequate meals independently.	1			0			0		
			2. Prepares adequate meals if supplied with ingredients.	0			35	4.1			38	9.5
			3. Heats and serves prepared meals, or prepares meals but does not maintain adequate diet.	0			1			1		
			4. Needs to have meals prepared and served.	0			0			0		
			D. Housekeeping		51	7.1	0					
			1. Maintains house alone or with occasional assistance (e.g., "heavy work-domestic help").	1			54	5.2			52	10.0
			2. Performs light daily tasks such as dish-washing, bedmaking.	1			1			1		
			3. Performs light daily tasks but cannot maintain acceptable level of cleanliness.	1						1		
			4. Needs help with all home maintenance tasks.	1			1			1		
			5. Does not participate in any housekeeping tasks.	0			0			0		
			E. Laundry									
			1. Does personal laundry completely.	1								
			2. Launders small items—rinses socks, stockings, etc.	1								
			3. All laundry must be done by others.	0								
			F. Mode of Transportation									
			1. Travels independently on public transportation or drives own car.	1								
			2. Arranges own travel via taxi, but does not otherwise use public transportation.	1								
			3. Travels on public transportation when assisted or accompanied by another.	1								
			4. Travel limited to taxi or automobile with assistance of another.	0								
			5. Does not travel at all.	0								
			G. Responsibility for own Medications									
			1. Is responsible for taking medication in correct dosages at correct time.	1								
			2. Takes responsibility if medication is prepared in advance in separate dosages.	0								
			3. Is not capable of dispensing own medication.	0								
			H. Ability to Handle Finances.									
			1. Manages financial matters independently (budgets, writes checks, pays rent, bills, goes to bank), collects and keeps track of income.	1								
			2. Manages day-to-day purchases, but needs help with banking, major purchases, etc.	1								
			3. Incapable of handling money.	0								

Rep. = .96 N = 97

Rep. = .93 N = 168

Rep. = .96 N = 97

Rep. = .93 N = 168

Information was obtained by a social worker, using the best available source—the family, the S, institutional employees, friends, or combinations of informants. The rating was done by the worker, rather than the informant.

The validity of the resulting scales was tested by determining the correlation of the PSMS and the IADL with the following measures:

1. Physical Classification (PC), a six-point rating scale of functional health, rated by the physician on the basis of complete medical history, physical examination, and laboratory studies (Waldman & Fryman, 1964).

2. Mental Status Questionnaire (MSQ), a ten-item test of orientation and memory (Kahn, Goldfarb, Pollack, & Gerber, 1960).

3. Behavior and Adjustment rating scales (BA), a set of four six-point scales measuring intellectual, personal, behavioral, and social adjustment (Waldman & Fryman, 1964, revised by Brody & Lawton).

For this validity study, another sample of 180 applicants to the authors' institution was used. The applicant's social worker usually administered the MSQ early in the application process, and completed the PSMS and IADL as soon thereafter as she felt her information in these areas was complete enough to enable her to do so. The physical examination and PC were done subsequently by the physician at a time interval which varied from a few days to a month or two. The BA was completed by the social worker at the time of the physical examination. Thus, there were few instances in which one assessment technique was done totally without knowledge of the results of one or more other techniques. On the other hand, each was designed to be anchored as firmly as possible in observable behavior, and the workers were thoroughly trained and experienced in the use of the scales. Therefore it seems reasonable to suggest that the larger part of the observed covariation between any two scales is attributable to the

similarity of the two functions in the S rather than to a halo or contaminatory effect within the rater.

Results

Table 1 shows the pertinent information regarding the scale properties of the PSMS. Since the items scaled identically for men and women separately, they were combined for final scaling. The Guttman scaling criteria are adequately met, as can be seen by:

1. The major range of item difficulty being represented, without extreme splits;
2. The percentage of errors on each item being substantially less than percentage of non-error; and
3. The high reproducibility coefficient of .96.

Table 4 indicates a relatively rectangular distribution of scores in the entire sample. While the perfect Guttman scale is, among other things, by definition a perfectly reliable scale (Guttman, 1947), the departures from the ideal may substantially limit its actual reliability. Pairs of licensed practical nurses were asked to rate independently 36 patients with varied self-care deficits. The Pearsonian r between the pairs of ratings was .87. Two research assistants independently rated 14 other impaired and nonimpaired patients, with a correlation of .91 between their ratings.

Table 2 shows similar data for the IADL. The sex-linked content of three items is probably responsible for the fact that they did not scale for men: food preparation, laundry, and housekeeping. In the scale for females, the amount of discrimination added by retaining both, rather than only one of, item D (Housekeeping) and H (Ability to handle finances), is questionable. However, since item statistics for each of these still fall within acceptable limits, and the content of the items is useful in intake and placement services, both have been retained. The scale for males is short, but otherwise meets scaling criteria well. Table 5 shows the percentage distributions of the male and female IADL scales. Extensive testing of the reliability of the IADL has not been done. Twelve applicants for admission to a home for aged and clients in a family service agency were interviewed by one social worker with another worker present but not participating. Independent ratings made by the two workers on the basis of material from the interview resulted in a correlation of .85 between the IADL total scores.

Validity.—Few of the 180 Ss in the validity

Table 3. Sources of Subjects.

Home for aged applicants and residents	59
County institution applicants, residents, and foster home candidates	97
Psychiatric screening ward admissions	82
Family service agency clients	21
Homemaker service clients	6
	265

Table 4. Percentage Distribution of PSMS Scores.

Score	%
0	17
1	14
2	7
3	11
4	17
5	18
6	16
	100

Table 5. Percentage Distribution of IADL Scores.

Score	%	
	Male	Female
0	20	28
1	22	8
2	17	12
3	17	8
4	15	10
5	9	8
6	—	10
7	—	8
8	—	8
	100	100

Table 6. Intercorrelations of Five Functional Measures^a.

Measure	PC	PSMS	MSQ	IADL	BA
Physical classification		130	124	50	74
Physical self-maintenance scale	62		152	77	98
Mental status questionnaire	35	38		74	96
Instrumental activities of daily living	40	61	48		44
Behavior and adjustment	31	38	58	36	

^a Intercorrelations listed below diagonal, *N* for each correlation above diagonal. Decimals omitted from correlations.

study received all five evaluations. Table 6 thus shows the Pearsonian correlations between each pair of measures below the diagonal; the number of cases on which each correlation is based is entered in the corresponding cell above the diagonal. All correlations are significant at the .01 level except for the BA-IADL ($N = 44$) correlation, which just misses the .01 level. The five measures are each directed to different levels of functioning of the individual, and a major aim in constructing each measure was to differentiate one level from another. Yet, competence at one level is likely to be roughly related to competence at another, with the amount of shared variance differing as a direct function of the proximity of the pair of levels to each other in the hierarchy of complexity. Table 6 indicates, first, the expected *general* unity of the concept of competence: The correlations are all significant. Second, it indicates that the measures of competence are not merely five aspects of the same thing: The correlations are moderate, not high.

Thus, the rough regularity of relationships shown between the PSMS and IADL scales and three other functional measures gives support to the validity of the measures.

Discussion

It is generally accepted that assessment of older people is a complex process requiring evaluation from different vantage points. The notable lack of preventive services and the scarcity of resources compound the difficulties, since planning often must take place at a time when the capacities of the elderly person are clouded by acute reality problems and the emotional upset of elderly individuals and family members. Measures which compel focused attention to the *functioning* of the older person are therefore important tools in any attempt to bring order to the planning process.

It has been pointed out that effective instruments which tap function should form a part of a systematic approach to assessment, should have utility in a variety of settings, and should be adaptable to a variety of goals (Lawton, 1968). It

would be an additional advantage if such instruments were in a form which would facilitate communication among the different personnel and agencies involved in formulating and implementing treatment plans. With these criteria in mind, the PSMS and IADL were tested for use in the evaluation of individuals residing in or applying for admission to institutions of different types, with those experiencing stress in community living arrangements, with those admitted to psychiatric screening wards, and with residents of institutions for whom a return to community living was under consideration.

Both scales have been incorporated as part of the routine evaluative procedures of most of the agencies involved. The following discussion summarizes the experiences of the practitioners who participated in the study. The scales demonstrated practical utility as follows:

1. Provision of early, brief, objective assessment

The scales focus on concrete behavior and are couched in language free of technical terms specific to professional disciplines. They therefore can be used by a variety of personnel, including mental health workers, practical nurses, and social work assistants or aides. Thus, any worker involved in the initial contact can begin assessment early in the planning process. The brief but systematic review of the older person's current functioning quickly provides some basis for preliminary judgments and gives direction to consideration of facilities or treatment required. For example, a living arrangement requiring complete autonomy could not be considered for an individual who cannot transfer from wheel chair to bed and needs assistance in feeding.

Objective judgments are fostered. Worker, aged client, and family members may be subject to personal biases depending on such factors as the relationship with the particular older person, attitudes and views about older people in general, and individual personality patterns. Anchoring evaluation to the specifics of actual function serves to minimize distortions and to reduce global, subjective, or value-laden judgments.

2. Formulation, implementation, and evaluation of treatment plan

Assessment is not, of course, an end in itself. Its basic purpose is to establish and carry out treatment goals. When the "what is" of *existing* function is juxtaposed to evaluation of *potential* function, discrepancies between the two are pinpointed. Thus, the need (or lack of need) for services addressed to maximizing capacities is highlighted.

Re-application of the scales at periodic intervals provides built-in evaluation of the outcome of treatment, estimates change over time, and permits reformulation of treatment goals.

Measures which are sensitive to small, rather than global, changes are more appropriate for the aged. Goals for younger populations, for example, may be return to employment or resumption of household management and child-rearing. For the elderly, minimal goals based upon realistic potential encourage a dynamic rather than a static therapeutic approach. Small changes, such as moving up one or two points on the PSMS or IADL, gain considerable visibility when staff can see them in rating scale form. The emphasis on minimal goals may be an effective counteracting force against the therapeutic nihilism which plagues settings where complete "cures" do not take place.

The description of behavior provided by the scales is an integral component of the total diagnosis and requires fitting together with evaluation in other spheres. However, the inclusion of functional assessment pulls together the various diagnoses to the focal point of appropriate planning. For example, the failure of an elderly man to dress himself may be attributable to a variety of factors such as physical illness (e.g., loss of muscular function following a cardiovascular accident), an affective state (e.g., severe depression), or environmental factors (e.g., residence in an institutional setting in which patients are dressed by nursing staff to facilitate institutional routines). It is self-evident that treatment designed to improve function may be addressed to any or all of these factors. Similarly, even the most sophisticated multi-disciplinary evaluation may diagnose, but still not specify the kind of care needed. Individuals diagnosed, for instance, as having "chronic brain syndrome with psychotic reaction" may have a wide range of function and behavior; function and behavior, rather than diagnosis, should determine the service to be prescribed.

A major aspect of treatment is the matching of the particular facility or service to the individual. Whether within an institutional setting or in the community, planning must consider both the level of the individual's competence and the availability of specific services. When changing capacities lead to consideration of a change in living arrangement, the PSMS and IADL survey of function can be checked against social, professional or instrumental service which can be provided by family, friends, or community. Thus, Mrs. X. may

live alone in an apartment and require help in bathing, shopping, laundry, and meal preparation. Consideration and mobilization of services which can be supplemented by family or community (e.g., visiting nurse service, meals-on-wheels, shopping, or visiting by family) might enable her to continue that arrangement. The need for a different environment would be emphasized if the needed services were unavailable.

The scales are used routinely as part of the evaluation of applicants for institutional care at the Philadelphia Geriatric Center (PGC) to determine which of five existing levels of care and what institutional services are required. In a program of foster-home placement of county home residents at Neshaminy Manor (Bucks County, Pa., Institution District), the functional review is matched against the physical environment of the foster home and the capacity and willingness of the foster family to provide the needed help.

3. *An aid in the casework process*

Evaluation of the autonomy of the older person and the decision-making process occur in the context of the feelings and wishes of the individuals and family members involved. Constructive, realistic planning can be impeded or sabotaged by relationship problems, feelings of guilt on the part of the adult children or other relatives, personality patterns such as extreme passivity, or inability to accept dependency needs. When used with judgment and skill, the scales can be effective therapeutic tools. Adult children, often immobilized by guilt, can be helped to move toward a more realistic appraisal of their own capacity to provide the care required by the parent. When confronted by the need to spell out precisely the capacities of the parent, they may begin to deal psychologically with their own needs to infantilize the older person and underestimate his strengths, or at the other extreme, to deny his incapacities and maintain a childish inappropriate image of a strong, adequate, caretaking parent. Such movement in the direction of realistic acceptance of "what is" at that point in time can be a facilitating factor in the planning process.

4. *Teaching and training*

Educational approaches in professional disciplines generally are geared to "diagnosis." Pre-professional workers and trainees recruited to work with the aged often reflect that emphasis in their expectations of what constitutes the process of evaluation. Used as tools in teaching and training, the PSMS and IADL help new workers at all levels to become aware of the special problems of

older people and the differences they present compared to younger populations. Further, by describing the *capacities* as well as the *deficits* in function, the scales encourage the worker to pitch to abilities as well as to look at disabilities. That is, by focusing attention on areas of both competence and incompetence a plan can be developed which fully utilizes the strengths of the older person while making provision for supportive services. One agency, the Commonwealth of Pennsylvania Reception Center in Philadelphia, reports that the scales are now applied routinely to patients in all age levels, since the young as well as elderly people brought to its screening wards often present the problems in self-care and instrumental activities to which the scales are directed.

5. *Planning of facilities and services*

The PSMS and IADL have been discussed above as aids in evaluation and planning for individuals. They can also be used to plan facilities and services. To illustrate, the Philadelphia Geriatric Center recently planned two community-based services, utilizing the scales to establish criteria for eligibility and to determine the type of physical environment and staffing pattern required.

The first service, now in operation, was the creation of small-unit intermediate living arrangements for elderly individuals. Formerly family row-house type residences, they were renovated to accommodate elderly persons who did not need institutional care, but did require some protection and service. The physical structure of the houses and the capacity of the host institution to provide services determined the criteria for eligibility. Thus the PSMS was used in determining that applicants must score A1, B1, C1, D1, E1, F1. In constructing an inventory of services which could be made available, it was decided that the PGC could provide frozen main meals to be heated by the elderly persons, heavy cleaning and building maintenance, social service, and volunteers to accompany them on shopping trips. The PGC could not provide complete preparation and service of all meals, daily housekeeping, laundry service, money management or dispensing of medication. Thus to be eligible, an applicant needed to score a minimum of A2, B2, C1, D2, E2, F2, G1, H1 on the IADL.

The scales were also used in preparing a proposal for a Geriatric Day Center for the Mentally Impaired and Mentally Retarded (Liebowitz & Brody, 1968) to help determine the staffing patterns, equipment, physical facilities, and budget that would be required. The decision to include

wheel-chair bound individuals, incontinent persons, etc., led to determination that a specially equipped vehicle for transportation would be needed, and that the staff needed to include a range of personnel who could provide direct personal care as well as professional treatment. The scales thus pointed up potential gaps in services for large groups of elderly community residents and provided guidelines for their development.

Summary

Scales to measure two important domains of functioning of older people were tested. A six-item adaptation of the Langley-Porter Physical Self-Maintenance Scale, (PSMS) containing ratings of self-care ability in areas of toileting, feeding, dressing, grooming, locomotion, and bathing was made. A somewhat more complex set of behaviors named Instrumental Activities of Daily Living (IADL) was also scaled: telephoning, shopping, food preparation, housekeeping, laundering, use of transportation, use of medicine, and financial behavior were included. The PSMS items met Guttman scaling criteria for males and females combined. The IADL items formed an eight-point scale for women and a five-point scale for men. Validation was seen in patterns of moderate correlations of these scales with other functional measures.

The PSMS and IADL were found to have practical utility in widely diverse settings, with a range of population groups of aged, and for a variety of goals. They are now used routinely in evaluation procedures by the agencies in the study. The scales are effective aids in early, brief, and objective assessment and in the formulation, implementation, and evaluation of treatment plans. The emphasis on small, rather than global, gains, and the visibility given those gains, encourages therapeutic optimism on the part of staff dealing with the elderly. By compelling attention to *function*, the scales provide a focal point which pulls together multidisciplinary diagnoses and planning efforts. Practitioners using the scales report their usefulness in the casework process with aged client and family and as teaching and training materials for staff new to work with the aged. The PSMS and IADL have been used to plan facilities and services, and the authors suggest that their use with large groups of community residents could point up gaps in service and lead to guidelines for their development.

In conclusion, a caveat. The current emphasis on the development of measures attests to the practical need for such aids to assessment. The

authors hope that the application of the PSMS, the IADL, or any other scales, will aid, but not substitute for, evaluation and planning. They should be viewed in perspective as one component of the complex system of determinants which also includes the availability of resources, and the needs and wishes of individual older people and their families.

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The Society of Biological Psychiatry

RESEARCH AWARDS OF 1970

The Society of Biological Psychiatry is offering two annual awards made possible by the A. E. Bennett Neuropsychiatric Research Foundation. The awards are for \$750 each for the two best research papers offered, one in basic and one in clinical science. The awards are given to young investigators who are not necessarily members of the Society of Biological Psychiatry for work which has recently been finished *but not published*. The papers submitted to the Awards Committee may not be submitted elsewhere for consideration or for publication. If a preliminary report has been published this should be brought to the committee's attention so that they can determine if this report disqualifies the paper. The purpose of the awards as envisaged by Dr. Bennett was to stimulate the entrance of young scientists into research in psychiatry and related fields. For the purposes of the award "young scientists" have been considered to be those who are 35 years of age or younger. In the spirit of the award, the committee, therefore, cannot consider papers unless all the authors fit this definition of a "young scientist." The recipients will be invited to read their papers as part of the program of the annual meeting of the Society. The Society's journal, *Biological Psychiatry*, is given first rights to publication of the Award winning papers and they may not be published elsewhere than the journal of the Society unless released by the Society. The honoraria will be awarded at the annual banquet. The next Convention and Scientific Meeting of the Society will be held at San Francisco, May 8, 9, and 10, 1970.

Please submit paper in triplicate to Williamina A. Himwich, Ph.D., Chairman, Committee on Research Awards, Society of Biological Psychiatry, Galesburg State Research Hospital, Galesburg, Illinois 61401. Deadline for manuscripts is February 1, 1970.