The Relationship Between Intellectual Performance and Perceptions of Everyday Competence in Middle-Aged, Young-Old and Old-Old Adults

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INTRODUCTION

During the past quarter century I and my associates have conducted detailed cross-sectional and longitudinal studies of psychometric intelligence over the adult age range from the twenties to the eighties with the objective of characterizing patterns of change as well as some of the variables that might account for individual differences in rates of such change (for recent reviews see Schaie, 1979, 1980).

As a result of these studies we have learned a great deal about adult intellectual performance, but as we have previously stated in greater detail (Schaie, 1978), our efforts have suffered from two major flaws. First, all our knowledge about adult intelligence has been gained by means of measures originally constructed by Thurstone (1938) for the investigation of intellectual structures in adolescents. While we may safely conclude that the constructs measured in young people will not disappear as we age, it is nevertheless obvious that their efficient measurement may require alternate techniques. For example, we have found that the mechanics of complex answer sheets easily handled by the young provide difficulties for the old, that the size of the type face used in tests constructed for the young may be fatiguing for the old, and that meaningless materials which elicit adequate response in the young because of its novelty, may fail to be sufficiently motivating for older subjects (Gonda, Quayhagen, & Schaie, 1980).

The second flaw is concerned with the traditional objective of tests of intellectual performance, the prediction of educational achievement. While it is true that the educational system is giving increased importance to the role of the older learner (cf. Schaie & Quayhagen, 1979; Schaie & Willis, 1978), it is nevertheless clear that the target for external validity studies of intellectual abilities in adults must be other than education-directed. Of great concern here is the distinction to be drawn between intelligence and competence (cf. Connolly & Bruner, 1974). The latter is said to involve the ability to select those environmental features that are required information to initiate a course of action, to initiate a sequence of movements designed to achieve the planned objectives and to learn from successes and failures in the formulation of new plans.

Competent behavior, then, must involve the application of intellectual abilities in quite specific situations, particularly if one's interest moves forward from concern with a global construct of intelligence, found to be of limited utility in the assessment of adults. Since such behavior is of necessity complex it is unreasonable to expect that any <u>single</u> measure of intellectual performance, no matter how elegant, can predict adequate response in a specific situation. For our purposes, we might further identify the relation between intelligence and competence by offering the definition that <u>competence</u> be viewed as the phenotypic expression of that combination of genotypic factors of intellectual ability which, given minimally required levels of motivational incentive, will permit adaptive behavior within a specific situation or class of situations. <u>Intelligence</u>, on the other hand, is viewed as that spectrum of genotypic factors which can be abstracted from expressions of adaptive behavior measured across situations (cf. Schaie, 1978).

What is needed then is a convergent process which proceeds with the design of new assessment procedures which measure some of the well known intellectual abilities in a manner which is ecologically valid for older adults and the development of a situational taxonomy for the adequate description of the kind of settings within which older adults express behavioral competence. A network can then be built which permits us to describe the specific set of intellectual abilities which are essential to the assessment of prediction of competence in specific environmental situations. The present paper is the first report of our empirical studies designed to formulate this network. To provide the proper context for this work, it will be necessary first to describe briefly both the situational taxonomy and the newly developed assessment battery.

THE TAXONOMY OF SITUATIONS

Our concern with the recognition that adult intellectual development must be strongly impacted by environmental constraints and pressures (Schaie, 1977/1978) led us first to describe a number of personal and behavioral dimensions which we thought would best delineate the complexity of the microenvironment (Gribbin, Schaie, & Parham, 1980; Schaie & Gribbin, 1975). This has been a reasonably productive approach, but it seemed to us not sufficiently grounded in empirical knowledge of what the most relevant situational dimensions might be that ought to be related to intellectual performance in later adulthood. A number of methodological and developmental criteria affected this next step of our search. One must attend to the formal aspects of criterion relevance (Weitz, 1961) as well as to be sure that the attributes of situations of interest are adequately taxonomized (Frederikson, 1972).

An orderly investigation leading to the development of such a taxonomy was begun in our laboratory some four years ago. As a first step we began

to generate situations relevant to but not necessarily peculiar to the life experiences of older adults in West Los Angeles. Our definition for situations is close in meaning to the concept of "episode" employed by Forgas (1976); that is, a behavioral sequence which constitutes a natural unit of action in the stream of behavior. A combination of self-report and interview formats were employed. About 100 informants spread across several racial and ethnic groups, but were predominantly middle-class. Participants, all over 60 years of age, came from senior centers, church groups, volunteers at our Gerontology Center, and the streets and parks of West Los Angeles. Participants were asked to report events or situations occurring in their lives during the past year. Response formats included unstructured interviews, a questionnaire eliciting situations having specified evaluative, arousal and dominance dimensions (a variation of Mehrabian & Russell, 1974), and situational diaries. From a total of approximately 300 situational discriptions, 100 were randomly selected and judged by eight raters (mean age: 70 years) as to a series of dimensions. Items were retained which could be reliably assigned to four dimensions which classified over 70 percent of all situations. These four dimensions were: social-nonsocial, active-passive, common-uncommon, and supportive-depriving (for older persons). Figure 1 provides examples of descriptions of situations in each of the sixteen possible attribute combinations.

A measurement instrument was next designed which included five items within each of the sixteen classifications. Since it is unlikely that many individuals would encounter most of the prototypic situations and since their absolute scaling presents conceptual and methodological problems, it was decided to consider their ordinal relevance to the individual who would rate them. The 80 situations were therefore adapted as a Q-sort deck,

which permits assignment of relative importance along specified dimensions with a prescribed quasi-normal distribution (Stephenson, 1953). See Figure 2. Validity of the instrument was next investigated by asking 20 older adult raters to sort the situation statements with respect to their pleasantness, their ability to copy with the situations, and the frequency with which each situation was encountered. Resultant analyses showed overall ability of subjects to use the system to provide meaningful ordering of the situations (see Scheidt & Schaie, 1978 for further details). For our field studies, we have restricted ourselves to using the sort along the perceived competence dimension. Group administration has been facilitated by producing efficient sorting boards and a computer scoring technique for the subjects' responses.

THE ADULT ABILITY TEST BATTERY

Assuming that we have a criterion measure for describing situationally defined competence, whether perceived by the target person or rated by others, we next need to concern ourselves with a measurement battery which is valid for the life-stage at which these individuals are to be assessed. As stressed in the introduction, we continue to assume that the dimensionality of intellect has been well-studied and that there is little reason to suspect utterly novel dimensions to emerge during adulthood. What seems at issue more directly is the extent to which the specified dimensions are measured validly. Consequently it does not suffice simply to devise new measures which are relevant to the population to which they are applied; such was the intent of Wechsler's work (Matarazzo, 1972), or of the interesting procedures suggested by Demming and Pressey (1957) for testing the aged. In addition to the presumed relevance, desirable new tasks must also be of known relevance to a structure of intellect model which is capable of extending across ontogeny.

Of course, extensive changes are likely to prevail in the phenotype-genotype relationship of intelligence tests and the constructs they are presumed to measure, regardless of whether we adhere to a differentiation-dedifferentiation model (Reinert, 1970) or find structural reorganization paradigm (Schaie, 1977/ 1978) more to our taste. But these changes refer to the hierarchy of importance of certain ability traits rather than to the emergence or disappearance of ability traits at particular life stages.

Since we have had decades of experience working within the Thurstonian model, we elected to pursue our search for more ecologically valid ability tests by building alternate forms and revised formating for those measures which we had previously found useful. We began by searching for more meaningful alternatives by investigating visuo-spatial behavior by means of experimental tests capitalizing on the characteristics of contemporary oldsters as a card-playing society (Krauss & Schaie, 1976; 1978). Although promising, this work still requires additional test development and will not be reported upon here. Instead we developed specific alternatives for the Space and Reasoning tests from the Primary Mental Abilities, and we converted all instruments from a format requiring complex matching of test booklets and answer sheets, to a simplified disposable test booklet procedure. The latter was further improved by increasing type size to one of comfort for older eyes and by clarifying and simplifying instructions (Gonda & Schaie, 1978; Gonda, Quayhagen, & Schaie, 1979).

To illustrate the difficulties faced by the older person in taking standard psychological tests and our approach to more ecologically valid test material, I would like to show copies of the standard materials and our new alternatives. I will begin with a standard recognition vocabularly test, the PMA Verbal Meaning Test. Let me first show you the standard

instruction page (see Figure A). Note the small type size and the complex arrangement of sample problems. This page is contained in a booklet which must be juxtaposed to a machine-scorable answer sheet (Figure B). Note here the difficulty for the subject in succeeding with the correct juxtaposition. Finally let me show you the first page of problems for this test (Figure C) which again must be aligned with the answer sheet you have just seen. Now let me show you the adapted form of the test. Again I will first show you the instruction sheet (Figure D). Note the increased type size and modified instruction permitting completion of the problems right on the same page. Finally let me show you the revised first page of test problems recontructed to reflect the same principles (Figure E).

Similar principles were involved in the revision of the number subtest, in principle a very simple task involving checking of addition problems (see Figure F), but again difficult to handle for older persons if an answer sheet must be used. The much simpler "Additions" parallel form shown in the next figure (Figure G) is now used in our work.

We now come to the procedures, results for which will be reported today, the new versions of the PMA Space and Inductive Reasoning tests. I will first show you the instruction page and first page of problems for the PMA original (Figures 3 and 4). The obvious difficulties were first removed in the manner illustrated earlier, by increasing type sizes and modifying instructions. The appropriate instruction and first problem page for what we now call the Figure Rotation test is shown in the next slides (Figures 5 and 6). An alternative form was next constructed on the assumption that the memory load in comparing geometric stimulus and response figures which is irrelevant to the ability to be measured can be reduced by converting to more meaningful material. The next slides therefore show the instruction and first problem page for the ecologically more valid Object Rotation

test (Figures 7 and 8). Note that the Object Rotation test is an exact parallel to the Figure Rotation test. The same angles of rotation are examined, except that well-known household objects are used instead of the geometric figures.

By analogous reasoning it was argued that the PMA Inductive Reasoning test could also be restructured to attain greater ecological validity. Again let me first show you the instruction and first problem pages for the standard PMA Reasoning test (Figures 9 and 10). These were first simplified in instruction and print size to obtain a form more suitable for older adults. The next two slides show the revised format for the instruction and first problem page of the new Letter Series test (Figures 11 and 12). We next proceeded to construct a parallel using only months of the year. This first of all reduced the symbols to be manipulated from 26 different letters to 12 months, which furthermore were more content-laden terms. The new Word Series test uses exactly the same serial paradigms as the original PMA test. The next two slides show instruction and first problem pages for the new test (Figures 13 and 14).

APPLICATION OF THE NEW TECHNIQUES

A number of validational studies with different age groups have thus far been conducted. Comparison of the standard PMA and the new formats suggest improved performance for the new tests particularly for Verbal Meaning and Number, particularly for those of low educational level (Popkin, Schaie, & Krauss, 1980). Similarly performance improved at all age levels for Space and Reasoning when the new ecologically more valid parallel forms were used (Gonda, Quayhagen, & Schaie, 1979; 1980).

A sample of volunteer subjects was next recruited from the membership of a Southern California health maintenance organization having approximately 30,000 members. Quota sampling resulted in approximately equal representation

for all but the oldest birth years. Data for analysis in this presentation came from 404 Ss. The middle-aged group (ages 55 to 64) was represented by 127 individuals; 64 men and 63 women. The young-old group (ages 65 to 74) consisted of 163 persons; 75 men and 88 women. And the Old-old sample (ages 75 to 92) had 113 members, of whom 54 were men and 59 women.

Subjects were examined in groups of from ten to twenty during a two and one-half hour session. All subjects received the six modified PMA tests described above and the Scheidt Q-sort was taken with the instruction of rating their perceived situational competence. A number of memory scales were also used but will not be discussed here because of the obvious time constraints. Order of parallel form tests was counterbalanced.

RESULTS

We will first discuss the age by sex by test form differences obtained for the abilities of Space and Reasoning. Next information will be given about the perceived everyday competence of our subjects by age and sex as evidenced by the Q-sort data. Finally we will focus on the predictability of such situationally determined competence by means of the ability tests.

Age Differences in Ability. Means and standard deviations by age, sex, form, and ability, significant at or beyond the 1% level of confidence are presented in Table 1 shown on the next slide (Figure 13). Age differences obtain on all test forms between the middle-aged and old-old, and between the young-old and old-old. Contrary to our expectation, a significant age difference was found between middle-aged and young-old for the Object rotation, but not for the Figure rotation test. Examining age differences separately by sex, we note that the difference between the middle-aged and young-old women fails to reach significance for both Figure and Object Rotations, while for the males this difference is significant only for the

Object Rotation test. Note substantial form differences between Figure Rotation and Object Rotation. The new form is obviously easier at all ages. Interestingly enough it results in greatest gain, however, for the middle-aged males. The new Word series test is somewhat easier than the Letter series format. Although gain is only slight, it seems to be largest for the middle-aged males and the old-old females.

Age Differences in Perceived Competence. Relative perceived mean differences could be reported for the four main dimensions, as well as their simple, triple and four-fold interactions. Probably of greatest interest here are the principal dimensions and the sixteen taxonomic categories represented by the four-fold interactions. The next slide, Table 2 (Figure 16) presents means and standard deviations by age for the combined samples and separately by sex. Over all subjects and consistently across the ages investigated, social situations are perceived to demand greater competence than non-social situations, uncommon more than common situations, and supportive less than depriving circumstances. Note, however, that the difference between social and non-social situations decreases with increasing age. Analyzed separately by sex, we find that it is men in particular who perceive themselves to be more competent in solitary than social situations. Similarly, the difference in favor of supportive situations remains significant only for the females and the middle-aged but not for the older males.

The next slide, Table 4 (Figure 17), presents similar data for the sixteen taxonomical categories. Highest level of perceived competence is rated by the men at all ages for the non-social, common and supportive combinations, whether involving active or passive behavior (NPCS and NACS). In addition, the old-old males rate their competence high for the social-common-passive-supportive (SPCS) dimension. The latter pattern is shown

by the women at all ages. The situations perceived as most difficult for women at all ages were those assigned to the non-social-passive-uncommon-depriving dimension (NPUD). Other situations in which women perceived themselves as displaying relatively low competence, were both social and non-social active-uncommon-depriving (SAUD & NAUD) categories, and for the old-old women the social-active-uncommon-supportive (SAUS) combination. Middle-aged males described themselves at least competent on the social-active-uncommon-depriving (SAUD) dimension, while the older men rated themselves least competent on the social-active uncommon-supportive (SAUS) category. The social-passive-common-depriving (SPCD) dimensions was rated low by middle-aged and young-old subjects but was rated close to average by the old-old. The latter, however, reported greater difficulty with the social-passive-uncommon-supportive (SPUS) than did the younger men.

To preserve time, we will not show data on the two- and three-fold combinations of major dimensions. We will breifly note though that perceived competence was rated as greatest across sex and age for the nonsocial-supportive and common-supportive combinations. Least competence was rated by the men for the social-uncommon and social-depriving combination, except for the oldest males who rated the uncommon-supportive situations as rather difficult. Middle-aged women found the social-depriving combinations most difficult, the young-old women made this judgment with respect to the passive-depriving combination and both young-old and old-old women find the active-uncommon dimension to be difficult.

Predictability of Situational Competence. We are now back to the main question of the relationship between performance on ability tests and perceived competence in everyday situations. To address this question correlations were computed between the four ability tests discussed earlier

and each of the sixteen category, thirty-two three-way, twenty-four two-way, and eight main dimension scores. Correlations were considered only if they differed from zero at or beyond the 5% level of confidence. A large number of significant values were found, albeit the proportion of variance accounted for ranges only between 5 and 15% for any given coefficient. Patterns of relationships were next identified for each age/sex group represented in the study. Such patterns were considered both for unipolar category scores, and for scores combined to represent a bipolar dimension (e.g., at the main level from social to nonsocial, at the two-way level from social-active to nonsocial-passive, at the three-way level from social-active-common to nonsocial-passive-uncommon, or at the category level from social-active-common-supportive to nonsocial-passive-uncommon-depriving).

Patterns vary markedly across the sub-groups examined, however, some general trends do appear. For example, there appears to be a moderate positive correlation between ability scores and the active/passive dimension and an inverse correlation with the social-nonsocial dimension. The spatial measures tend to correlate inversely with the dimension from social-active-uncommon to nonsocial-passive-common. Word series generally correlates positively with the supportive-depriving dimension.

At least one of our ability measures predicted some variance in each of the sixteen discrete categories of the situational taxonomy, but the same measure was rarely the best predictor across the different sub-sample. Letter Series was positively correlated with the nonsocial-passive-uncommon-supportive category (NPUC) in old women, with the soical-passive-uncommon-supportive (SPUD) in middle-aged males and young-old women with the nonsocial-active-uncommon-supportive (NAUS) category in middle-aged males, social-active-common-depriving (SACD) category in old-old men and the nonsocial-passive-

uncommon-depriving (NPUD) category in old-old women. It was negatively correlated with social-active-uncommon-depriving (SAUD) for the middle-aged; with nonsocial-passive-common-depriving (NPCD) for the young-old males; with social-passive-common-depriving (SPCD) and nonsocial-active-common-supportive (NACS) for the old-old males; with social-passive-common-supportive (SPCS) for the middle-aged women; and with social-active-common-supportive (SACS) for the old-old women.

Word Series correlated positively with nonsocial-passive-uncommon-depriving (NPUD) for the middle-aged and old-old women; with social-active-uncommon-depriving (SAUD) for middle-aged men; with both common and uncommon nonsocial-active-depriving (NAUD & NACD) for the young-old men, with social-active-common-depriving (SACD) for the old-old men; with supportive and depriving social-passive-uncommon (SPUS & SPUD) for the young-old women; and with common and uncommon nonsocial-passive-supportive (NPCS & NPUS) for the old-old women. This test correlated negatively with supportive and passive-uncommon-depriving (SPUD) in middle-aged males; with nonsocial-active-uncommon-supportive (NAUS) in young-old males; with social-passive-common-supportive (SPCS) in middle-aged women; and with social-active-common-supportive (SACS) for the old-old women.

Figure Rotations correlated positively with nonsocial-active-uncommon-supportive (NAUS) in all the old; with nonsocial-active-uncommon-depriving (NAUD) in middle-aged men; with social-active-common-supportive (SACS) in young-old men; with nonsocial-active-common-depriving (NACD) in old-old men, with social and nonsocial passive-common-depriving (SPCD & NPCD) in middle-aged women; and with common and uncommon nonsocial-passive-supportive (NPCS & NPUS) in the old-old women. Negative correlations were found for this variable with social-passive-uncommon-depriving (SPUD) for middle-aged males;

with nonsocial-passive-common-depriving (NPCD) for young-old males; with nonsocial-passive-uncommon-depriving (NPUD), social-active-uncommon-supportive (SAUS) and active as well as passive social-uncommon-supportive (SAUS & SPUS) for old-old males; with social-passive-common-supportive (SPCS) for young-old women; and with social-active-common-supportive (SACS) for the old-old women.

Finally, Object Rotation correlated positively with social-passive-uncommon-supportive (SPUS) for middle-aged men; with nonsocial-active-common-depriving (NACD) for old-old men; with social-passive-common-dependent (SPCD) for middle-aged women; and with nonsocial-active-uncommon-supportive (NAUS) for old-old women. It correlated negatively with social-passive-uncommon-supportive (SPUS) for old-old males and middle-aged women; with social-active-common-depriving (SACD) and social-passive-uncommon-depriving (SPUD) for middle-aged men; and with supportive and depriving nonsocial-passive-uncommon (NPUS & NPUD) social-active-common-supportive (SAUS) and nonsocial-active-common-supportive (NACS) for old-old men.

DISCUSSION

In my earlier programmatic writing (Schaie, 1978) I pointed to the need to develop an ecologically valid assessment technology for the elderly which would be related to an appropriate array of empirically determined situations having differential attributes. I suggested then that the resultant network of relationships would probably differ across subject-characteristics such as sex and cohort-membership as well as possibly for different personality types. Except for the last item which has not yet been addressed directly in our investigation, we have now available a data set fulfilling my specifications, with results which confirm my earlier suspicion that the task at hand would be a most formidable one.

I have shown in this paper how we have taken psychometric measures originally developed for adolescents and young adults, and have developed parallel forms for the constructs of interest which first of all take into account the non-construct related response characteristics of older test-takers and have added meaningful content to tests which might seem to childish for the adult subject. As the data suggest, our success has only been a partial one. The test materials have become more appropriate and somewhat easier for older subjects, but the changes made are even more facilitative for the middle-aged. Nevertheless, we seem to have provided tests which may extend the range of ability over which older subjects can be validly tested.

Secondly, we demonstrated the large-scale applicability of a method for measuring older persons' perceived competence in everyday situations, within a multi-dimensional taxonomy of such situations. And finally, we demonstrated that there is a rather complex system of relationships, depending upon sex and cohort membership between the ability measurement system and the situational taxonomy. In the latter context it is interesting to note that overall, the standard figure rotations works as well or better than the new form in predicting to everyday perceived behavior, while the new Word Series test has superior predictive power to the standard Letter Series. It should further be noted that for reasons of presentational parsimony we have thus far dealt only with our fluid measures of intelligence (those on the basis of theory least likely to correlate with everyday behavior). The fact that we can account for significant portions of variance is therefore extremely encouraging. Our complete battery, as indicated, contains crystallized measures of vocabulary and numerical skill as well, and we have also measured various memory factors. We should thus be able to produce, after the approp-

riate application of multivariate modeling techniques, a battery which should become of considerable interest to researchers and clinicians for the prediction of everyday behaviors from suitable combinations of laboratory-type psychometric tests. Such an end-product now well in sight moreover should lead to more effective work in relating ability systems to questions of retirement decisions and remaining work and social roles, an objective long sought for.

Table 1. MEANS AND STANDARD DEVIATIONS FOR THE ABILITY TESTS

		Letter Series		Word Series		Figure Rotation		Object Rotation	
					All Subjects				
Age	f	$\bar{X}$	S.D.	$\bar{X}$	S.D.	$\bar{X}$	S.D.	$\bar{X}$	S.D.
55-64	127	12.54	6.17	13.43	5.57	17.99	11.04	27.95	12.39
65-74	163	9.95	5.71	10.33	5.27	16.00	9.23	23.60	10.96
75+	113	6.39	4.80	7.19	4.68	11.05	10.00	14.84	11.12
					Males Only				
55-64	64	11.70	6.09	13.16	5.34	20.53	10.92	32.66	10.94
65-74	75	9.69	5.29	9.84	5.12	17.75	8.34	25.91	10.92
75+	54	6.17	4.90	6.50	4.66	13.44	10.84	16.39	12.42
					Females Only				
55-64	63	13.38	6.17	13.71	5.82	15.41	10.64	23.17	12.00
65-74	88	10.17	6.06	10.74	5.39	14.51	9.73	21.64	10.67
75+	59	6.59	4.74	7.83	4.66	8.86	8.69	13.42	9.68

Table 2. MEANS AND STANDARD DEVIATIONS FOR THE MAJOR SITUATIONAL DIMENSIONS

	Middle-Aged 55-64		Young-Old 65-74		Old-Old 75+	
	$\bar{X}$	S.D.	$\bar{X}$	S.D.	$\bar{X}$	S.D.
			All Subjects			
Social (S)	6.26	.37	6.20	.42	6.11	.31
Nonsocial (N)	5.72	.37	5.78	.42	5.86	.31
Active (A)	5.99	.30	5.99	.29	6.05	.27
Passive (P)	5.99	.30	6.00	.29	5.92	.26
Common (C)	5.78	.29	5.68	.42	5.71	.37
Uncommon (U)	6.19	.30	6.29	.43	6.26	.37
Supportive (S)	5.68	.49	5.72	.61	5.81	.49
Depriving (D)	6.28	.49	6.26	.60	6.16	.49
			Males Only			
Social (S)	6.26	.37	6.34	.46	6.18	.28
Nonsocial (N)	5.62	.37	5.64	.46	5.79	.29
Active (A)	5.95	.28	6.01	.26	6.03	.31
Passive (P)	6.03	.28	5.98	.29	5.94	.31
Common (C)	5.84	.26	5.77	.54	5.77	.39
Uncommon (U)	6.14	.27	6.21	.57	6.20	.39
Supportive (S)	5.72	.48	5.86	.69	5.91	.51
Depriving (D)	6.26	.48	6.11	.67	6.06	.51
			Females Only			
Social (S)	6.16	.35	6.09	.35	6.05	.32
Nonsocial (N)	5.82	.34	5.89	.34	5.93	.32
Active (A)	6.02	.31	5.97	.30	6.07	.21
Passive (P)	5.96	.31	6.01	.31	5.89	.20
Common (C)	5.72	.32	5.60	.25	5.65	.34
Uncommon (U)	6.25	.32	6.36	.25	6.32	.35
Supportive (S)	5.65	.50	5.60	.50	5.72	.46
Depriving (D)	6.31	.50	6.38	.50	6.26	.46

Table 3. MEANS AND STANDARD DEVIATIONS FOR THE SIXTEEN SITUATION TYPES

	Middle-Aged 55-64		Young-Old 65-74		Old-Old 75+	
	$\bar{X}$	S.D.	$\bar{X}$	S.D.	$\bar{X}$	S.D.
			Males			
S-A-C-S	5.75	.97	5.95	1.20	5.71	1.19
S-A-C-D	6.10	1.32	6.24	1.14	6.18	1.12
S-A-U-S	6.51	.97	6.70	1.13	6.87	1.22
S-A-U-D	6.83	1.09	6.57	1.14	6.31	1.11
S-P-C-S	5.82	1.08	5.72	.99	5.51	1.25
S-P-C-D	7.11	1.33	6.65	1.34	6.21	1.34
S-P-U-S	6.23	.98	6.28	1.01	6.47	.97
S-P-U-D	6.64	1.03	6.49	1.13	6.29	1.15
N-A-C-S	5.33	1.09	5.21	1.31	5.31	.99
N-A-C-D	5.50	1.16	5.63	1.23	5.82	.94
N-A-U-S	5.71	1.27	5.85	1.41	6.24	1.27
N-A-U-D	5.98	1.10	5.71	1.25	5.88	1.37
S-P-C-S	5.18	1.33	5.17	1.24	5.57	1.08
N-P-C-D	6.00	.89	5.82	1.20	5.97	1.17
N-P-U-S	5.34	1.15	5.38	1.31	5.74	1.04
N-P-U-D	5.99	1.18	5.98	1.48	5.90	1.46
			Females			
S-A-C-S	5.80	1.05	5.56	1.08	5.74	1.05
S-A-C-D	6.22	1.22	5.94	.97	5.84	1.05
S-A-U-S	6.35	1.12	6.40	1.07	6.64	1.10
S-A-U-D	6.71	1.07	7.01	.91	6.71	1.14
S-P-C-S	5.28	1.09	5.01	.92	5.06	1.16
S-P-C-D	6.54	1.30	6.53	1.15	6.16	1.16
S-P-U-S	6.19	1.17	5.97	1.23	6.19	1.08
S-P-U-D	6.26	.94	6.37	1.08	6.14	.94
N-A-C-S	5.42	1.00	5.08	.99	5.41	1.00
N-A-C-D	5.70	1.17	5.45	1.22	5.95	1.23
N-A-U-S	5.52	1.21	5.58	1.09	5.78	.99
N-A-U-D	6.57	1.10	6.79	1.34	6.65	1.21
N-P-C-S	4.93	1.10	5.35	1.07	5.36	1.22
N-P-C-D	6.01	1.08	6.06	.99	5.81	.90
N-P-U-S	5.86	1.07	5.92	1.18	5.71	.91
N-P-U-D	6.64	1.23	7.00	1.31	6.86	1.25

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