

A Factor Analytic Study of the Conners Parent Questionnaire

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We hereby recommend that the thesis prepared under
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CHAPTER 1

Introduction

The current trend in the classification of children's psychiatric disorders is towards an empirical rather than a theoretical approach (Achenbach & Edelbrock, 1978). In this climate, observational data provided by significant adults, such as parents and teachers, are a valued resource. Individually, this input provides the clinician with an overview of a child's typical behavior, as seen through the eyes of a familiar adult. For comparison across cases this data must be operationalized in some manner. To accomplish this, a variety of rating scales are available for completion by those who observe the child often. As a result there are many scales in use for which there is inadequate information regarding their reliability and validity.

Although no one rating scale for parents is universally accepted, the Conners Parent Questionnaire (CPQ; Conners, 1970) is one of the most widely used (Whalen, 1976; Glow, 1980). This instrument provides a means to record the most common behavioral problems in children.

Statement of the Problem

Despite its popularity, however, the CPQ has not totally escaped criticism. Some authors assert that its

psychometric properties have not been adequately demonstrated (Glow & Glow, 1980; O'Connor, Foch, Sherry, & Plomin, 1980). Although several factor analyses of the CPQ have been reported (Conners, 1970; 1973; Glow, 1980; Goyette, Conners, & Ulrich, 1978; O'Connor et al., 1980) only a few well replicated factors have emerged. Comparison of factor structures obtained in these studies has been complicated by the fact that all of the previous analyses were performed on different versions of the questionnaire, assuring different item composition of factors. In addition, the studies are characterized by various methodological weaknesses, such as small sample sizes, narrow age ranges, failure to use clinical populations, and failure to use all items of the standard questionnaire. Furthermore, reliability and validity data reported in these studies has been sparse.

Objectives of the Study

To add to the current knowledge on the CPQ, the present study involved a factor analysis of parental responses to the questionnaire (Conners, 1973) for a large, heterogenous, clinical sample. It has been designed to avoid some of the problems encountered in previous studies. This study proposes to do so in the following manner:

- 1) The current study employed the standard 93-item

version of the CPQ, thus omitting no items. This version of the instrument is the most frequently utilized in studies of children's behavior (Baker, Cantwell, & Mattison, 1980; Campbell, Schleifler, & Weiss, 1978; Conners, Taylor, Meo, Kirtz, & Fournier, 1972; Conners, Himmelhock, Goyette, Ulrich, & Neill, 1979; Froese, Rose, & Allen, 1980; Hoffman, Engelhardt, Margolis, Polizos, Waizer, & Rosenfeld, 1974; Leon, Kendall, & Garber, 1980), yet no previous factor analysis has utilized all 93 items. As Achenbach and Edelbrock note, "...the time has come for standardization of instruments and methods of analysis across studies." (1978, p. 1296).

2) The present study utilized responses from a clinical population. Only one previous study has utilized such a sample and it was a relatively small one (Conners, 1973). A clinical sample is necessary because the CPQ is designed for use with clinical populations (Conners, 1973).

3) The present study included a wide age range of children, with preschool, elementary, and teenage children represented. All but one previous factor analysis (Goyette, Conners, & Ulrich, 1978) included only elementary school age children, thereby limiting generalizability of factors to older and younger groups. The CPQ includes behaviors which are seen in a wide age range of children, and so

factor analysis with a more diverse sample is warranted.

4) The current study utilized a large sample (N=703) in order to insure a more stable factor structure. Whereas some of the previous studies used samples of adequate size for factor stability (Conners, 1973; Glow, 1980; Goyette et al., 1978), others have not (Conners, 1970; O'Connor et al., 1980).

5) Finally, the present study provided reliability data on the factors obtained in the form of measures of internal consistency for each factor.

Two previous factor analyses, Conners' eight-factor structure (1973), and Glow's twelve-factor structure (1980) were chosen for comparison with the present data. The Conners factors are the most widely utilized in the current literature and were derived from a partially clinical sample. The Glow factors were chosen because they were derived from a very large sample (N=1919), which contributes to factor stability. Additionally, both of these factor structures were derived from versions of the questionnaire most similar to the 93-item standard version employed in the present study.

Hypothesis 1

The present study will produce factors which replicate the Conners (1973) factor structure. Factors will be

considered replicated if 80% or more of the items in Conners' factor occur in a present factor. It is not necessary that the factors appear in the same order. However, all eight of Conners' factors must be represented for this hypothesis to be supported.

Hypothesis 2

The present study will produce factors which partially replicate the Glow (1980) factor structure. Factors will again be considered replicated if 80% of the items in the Glow factor appear in a present factor. It is not expected that the factors will appear in the same order. In order for this hypothesis to be supported, eight out of the twelve Glow factors must be replicated.

Review of Literature

The original 73-item version of the CPQ (Conners, 1970) was developed from an earlier list of 24 categories of symptomatology published by Cytryn, Gilbert & Eisenberg (1960). Conners expanded these 24 categories to include more specific symptoms. For example, "Problems of sleep" was enlarged to include the items "Restless", "Nightmares", "Awakens at night", and "Cannot fall asleep". The CPQ was originally developed as a tool to evaluate change in parental perception of their child's behavior during drug

treatment (Conners, 1973). To aid in this, Conners subsequently added 20 items, some of which were specifically intended to measure hyperactive behavior. This resulted in the 93-item version of the questionnaire. The 93-item questionnaire is part of the battery of tests recommended by the Early Clinical Drug Evaluation Unit of the National Institute of Mental Health for evaluation of drug treatment effects (ECDEU, 1976). Although some studies have used the CPQ in drug treatment effect measures (Conners, Rothschild, Eisenberg, Schwartz, & Robinson, 1969; Conners et al., 1972; Hoffman et al., 1974; Zahn, Rapoport, & Thompson, 1980), it has also been employed in studies of language impaired children (Baker, Cantwell, & Mattison, 1980; Mattison, Cantwell, & Baker, 1980), hyperactive children (Campbell et al., 1978), depressed children (Leon et al., 1980), twins (O'Connor et al., 1980), and parental variables (Conners, Himmelhock, Goyette, Ulrich, & Neil, 1979; Froeses, Rose, & Allen, 1980). Of these studies, the ones contributing information regarding the validity of the questionnaire will be reviewed in the section of the paper devoted to validity issues.

Previous Factor Analyses of the CPQ

The first factor analytic study of the CPQ appeared over a decade ago (Conners, 1970). Since that time, the

questionnaire has been utilized in various forms as items were added or discarded depending on their usefulness. The consequence of this constant revision is that every previous factor analysis has been done on a different questionnaire.

Conners' original factor analysis (1970) was performed on a version of the questionnaire which included 73 items divided into 24 categories. The analysis was performed on scores obtained by summing the categories, rather than using individual items. Conners suggested that the use of summed categories would perhaps lessen the effects of small variance within the item responses and thus produce a clearer factor structure. Responses of parents of clinical children (N=316) and control children (N=365) were analyzed separately, using principal components analysis with Varimax rotation. This produced the following factors:

- I. Aggressive-conduct disorder
- II. Anxious-inhibited
- III. Antisocial
- IV. Enuresis
- V. Psychosomatic
- VI. Anxious-immature

Conners (1970) reported that the factor structure was very similar in the clinical and control groups, with the severity of symptoms on each factor significantly greater

in the clinical group. The only difference between groups in factor composition was that encopresis loaded on the Enuresis factor in the clinical group while it loaded on the Anxious-immature factor in the control group.

There were only slight effects of social class and race on the factor scores. The lower class children scored slightly higher ratings on Antisocial and Psychosomatic factors, while the Black children scored significantly higher ratings on the Antisocial factor.

The entire sample was divided into three age groups (5-7, 8-10, 11-14) to determine the continuity of the factor structure across the age levels. Conners reported that for each of these age groups, seven factors met the criterion for rotation (eigenvalues greater than one). He also reported a congruence of factor structures across the age groups.

Overall, clinical and control children were reported to manifest much of the same symptomatology, with the symptoms being significantly more severe in the clinical group. The effects of age, social class, and race were not significant on the basic factor structure.

A problem with this study is that the factor structure was based upon responses within categories rather than on individual items. Some categories include opposite items;

for example, "Problems of eating", the first category includes the items "Picky and finicky", "Will not eat enough", and "Overweight". Connors did not address the fact that some categories contained contradictory items. O'Connor et al. (1980) have suggested that items were assigned to categories without adequate empirical evidence to justify the groupings, resulting in a loss of valuable information. They asserted that the factoring which resulted was too broad to be meaningful due to the factoring by category rather than by item.

The hazard in pre-grouping items to be factor analyzed was that items usually cluster together in unpredictable ways. Precategorizing then may have obscured some of the interrelationships which may have otherwise been apparant. Mulaik (1972) asserts that using such composite scores may cause the complexities within categories to be overlooked, or treated as homogenous items. In confirmation of these ideas, later factor analysis by item did not support earlier groupings by category (O'Connor et al., 1980).

Another weakness of this experiment was that the size of the two groups were too small to provide a stable factor structure for this many items. Although criteria to determine an adequate sample size for a stable factor structure are somewhat arbitrary, "...the closer the number of measures to the number of subjects, the less confidence we can

have in the meaningfulness of the entire analysis." (Hardyck & Petrinovich, 1976, p. 180).

Conners subsequently re-factor analyzed this data using different methods (Conners, 1973). This factor analysis was done on individual items of the questionnaire rather than on categories. Also, clinical and control groups were combined to produce a sample of more acceptable size (N=681). These two changes answered the main criticisms of the original design. This analysis was performed on 85 items taken from the 93-item version of the questionnaire, with no explanation given for the omission of eight items. (The factor composition by item appears in Table 1.)

Conners published the item breakdown for this factor structure in the Early Clinical Drug Evaluation Unit (ECDEU) manual (Conners, 1973; ECDEU, 1976). This information made it relatively easy for experimenters to use Conners' eight-factor structure as dependent variables in their studies, and many have chosen to do so (Conners et al., 1972; Hoffman et al., 1974; Campbell et al., 1976; Conners et al., 1979; Baker et al., 1980; Leon et al., 1980).

Although this factor analysis has produced a widely utilized factor structure, its original publication is deficient in several ways. Conners neither provided information on the methodology used, nor on the reliability and validity of the factors. The sample utilized was a

Table 1
Item Composition of the
Conners (1973) Factor Analysis

| Factor | Item |
|----------------------------|--|
| I. Conduct Problem | 39. Bullying 40. Bragging and boasting 41. Sassy to grown-ups 47. Mean with siblings 48. Fights with siblings 51. Picks on children 69. Blames others |
| II. Anxiety | 8. Afraid of new situations 9. Afraid of people 10. Afraid of being alone 11. Worries about illness, death 42. Shy 43. Afraid others don't like 64. Afraid to go to school |
| III. Impulsive-Hyperactive | 79. Inattentive, distractible 80. Constantly fidgeting 81. Cannot be left alone 82. Always climbing 83. A very early riser 84. Runs around between mouthful 89. Can't stop repetitive act 90. As if driven by a motor |
| IV. Learning Problem | 45. Has no friends 62. Is not learning 63. Does not like to go school 67. Will not obey school rules |
| V. Psychosomatic | 6. Awakens at night 21. Headaches 22. Stomach aches 23. Vomiting 24. Aches and pains |

Table 1 (continued)

| Factor | Item |
|------------------------|--|
| VI. Perfectionism | 76. Everything must be just so 77. Things must be same way 78. Sets goals too high |
| VII. Antisocial | 71. Steals from parents 72. Steals at school 73. Steals stores, other 75. Trouble with police |
| VIII. Muscular Tension | 12. Gets stiff & rigid 13. Twitches, jerks, etc. 14. Shakes 36. Lets self get pushed around |

combination of clinical and control groups, and yet no information on differences and/or similarities between these groups was provided. Also missing were data regarding stability of factor structure across age, race, sex, and socioeconomic groups.

Another factor analysis of the original 73-item version of the CPQ was reported by O'Connor et al. (1980). The analysis was performed on a normative sample of identical and fraternal twins (N=216). Using principal component analysis with Varimax rotation, they obtained 12 factors. (A factor breakdown by item appears in Table 2.)

Eight of the twelve factors were used to differentiate between the fraternal and identical twins. Two factors were

Table 2
Item Composition of the
O'Connor et al. (1980) Factor Analysis

| Factor | Item |
|---------------|--|
| I. Restless | 4. Restless (in sleep) 41. Sassy to grown-ups 48. Fights with siblings * 52. Can't keep still * 53. Always into things 69. Blames others |
| II. Bullying | 39. Bullying 41. Sassy to grown-ups 47. Mean with siblings 48. Fights with siblings 49. Hits or kicks other chn 51. Picks on other children |
| III. Shy | 8. Afraid of new situations 9. Afraid of people 10. Afraid of being alone 33. Clings to parents, adults 42. Shy |
| IV. Emotional | 31. Cries easily 36. Lets self get pushed around 43. Afraid others don't like 44. Feelings easily hurt 46. Feels cheated with siblings |
| V. Steals | 71. Steals from parents 72. Steals at school 73. Steals from stores, other |
| VI. Tense | 12. Gets stiff, rigid 13. Twitches, jerks, etc. 14. Shakes 28. Chews on clothes, blankets 29. Picks at hair, clothes 56. Throws self around |

(continued)

Table 2 (continued)

| Factor | Item |
|----------------------|--------------------------------|
| VII. School Problems | 19. Soils self |
| | * 62. Isn't learning |
| | 63. Doesn't like to go school |
| | 64. Afraid to go to school |
| VIII. Sleep Problems | 5. Nightmares |
| | 6. Awakens at night |
| IX. Aches | 22. Stomach aches |
| | 24. Aches and pains |
| X. Nauseated | 23. Vomiting |
| | 25. Loose bowels |
| XI. Compulsive | 76. Everything must be just so |
| | 77. Things same way every time |
| XII. Toilet Problems | 17. Wets the bed |
| | 20. Holds back bowel movements |

* Reworded items

excluded a priori for low variability (Nauseated and Toilet Problems) and two for poor reliability (Steals and Compulsive). Of the eight remaining factors, seven had significantly greater correlations between the scores of identical twins than between those of fraternal twins. Although boys demonstrated significantly more problems on four factors than did girls (Restless, School Problems, Steals, Toilet Problems), the differences between the sexes were very slight compared to differences within the sexes. Therefore, the authors asserted that actual differences between the sexes were minimal.

The O'Connor et al. (1980) study is limited because it used a shorter less frequently used version of the questionnaire. It is unclear why they decided to use this version of the questionnaire when the bulk of the literature has used the 93-item version. The size of their sample was also inadequate to accurately determine a factor structure for this many items.

Glow (1980) recently factor analyzed a 96-item version of the CPQ for use with Australian children. The questionnaire was translated into Italian, Greek, and Serbo-Croatian, and idiomatic changes were made in the English version. Items that measured excessive thirst, disobedience, and irresponsibility were added. Otherwise, the questionnaire was very similar to the one used by Conners (1973). The sample consisted of primary school children ranging in ages from 5 to 12. The large non-clinical sample ($n=1919$) was factor analyzed using principal components analysis with Varimax rotation, and yielded 12 factors. (Factor composition by item is reported in Table 3.)

Multiple regression analysis was employed to determine differences between age groups and the sexes. Younger children were rated as having significantly more problems on four of the scales (Self-gratification, Sleep Problems, Perfectionist, Tearful-dependent) than did older

Table 3
Item Composition of the
Glow (1980) Factor Analysis

| Factor | Item |
|----------------------------|----------------------------------|
| I. Conduct Problem | 38. Chip on shoulder |
| | 39. Bullying |
| | 40. Bragging and boasting |
| | ** 41. Cheeky to grown-ups |
| | 46. Feels cheated with siblings |
| | 47. Mean with siblings |
| | 48. Fights with siblings |
| | 49. Disturbs other children |
| | 50. Wants to run things |
| | 51. Picks on other children |
| | 58. Pouts and sulks |
| | 67. Disobeys school rules |
| | 70. Tells stories |
| | * 94. Disobeys parents |
| II. Immature-Inattentive | 30. Doesn't act his age |
| | 54. Fails to finish things |
| | 62. Difficulty in learning |
| | 63. Dislikes school |
| | 65. Daydreams in school |
| | 79. Easily distracted |
| | * 89. Bored with repetitive acts |
| | 92. Poorly aware of surroundings |
| | * 96. Unreliable |
| III. Hyperactive-Impulsive | 52. Restless, overactive |
| | 53. Excitable-impulsive |
| | 80. Constantly fidgeting |
| | ** 82. Always climbing |
| | 83. A very early riser |
| | 85. Easily frustrated |
| | 86. Gets overexcited easily |
| | 90. Acts as if driven by motor |
| | 95. Always thirsty |

Table 3 (continued)

| Factor | Item |
|----------------------------------|--|
| IV. Shy-sensitive | 8. Afraid of new situations 9. Afraid of people 36. Lets self get pushed around 37. Unhappy 42. Shy making friends 43. Afraid others don't like 44. Feelings easily hurt 45. Has no friends 64. Afraid to go to school |
| V. Self-gratification, Hostility | 59. Plays with sex organs 60. Sex play with others 68. Denies wrongdoing 69. Blames others for own mistake 71. Steals from parents 87. Laces, zippers always open |
| VI. Antisocial | 72. Steals at school 73. Steals from stores, other 75. Trouble with police |
| VII. Sleeping Difficulties | 4. Restless (in sleep) 5. Nightmares 6. Awakens at night |
| VIII. Perfectionism-Compulsive | 76. Everything must be just so 77. Things same way every time 78. Sets goals too high |
| IX. Psychosomatic Problems | 21. Headaches 22. Stomachaches 23. Vomiting 24. Aches and pains 25. Loose bowels |
| X. Feeding Problems | 1. Picky and finicky 2. Will not eat enough |

Table 3 (continued)

| Factor | Item |
|-----------------------|--|
| XI. Tearful-dependent | 10. Afraid of being alone 31. Cries easily 32. Wants help with things 33. Clings to parents, adults 81. Cannot be left alone |
| XII. Temperamental | 55. Temper outbursts 56. Throws self around 57. Throws and breaks things 91. Moods which change quickly |
| * New items | |
| ** Reworded items | |

children, whereas older children had more problems on three scales (Conduct, Immature-Inattentive, Psychosomatic).

Boys were reported to have significantly more problems than girls on seven of the twelve factors (Conduct, Immature-Inattentive, Hyperactive, Self-gratification, Antisocial, Feeding Problems, Temperamental).

This study was noteworthy because it utilized a sample size large enough to produce a stable factor structure. The factor structure was consistent across area and school variables, the only index of social status. This was measured by hierarchical multiple regression analysis. A limitation of this study was that preschool and teenage children were not included in the sample. This prevents

generalization of the factors to these age groups.

Finally, Goyette et al. (1978) reported a factor analysis of a revised version of the questionnaire which included only 48 items. They deleted items which had not previously loaded on factors, combined redundant items, and reworded items considered ambiguous. The non-clinical sample (N=570) was factor analyzed with principal components analysis and Varimax rotation. Questionnaires completed by mothers (N=518) and fathers (N=373) were analyzed separately and found to have highly similar factor structures. Items common to both factor structures were combined to form the overall parent factor structure. The resulting five factors are presented by item in Table 4.

Goyette et al. (1978) reported that boys were rated as exhibiting significantly more problems than girls on two factors (Conduct and Learning). Younger children were reported to have significantly more problems on the Impulsive factor; whereas older children were reported to have more problems on the Psychosomatic factor. The age by sex interactions were not statistically significant, nor were the effects of social class using the Hollingshead index.

This study was unique because it used a very wide range of ages (3-17) in the sample; also, it is the only factor

Table 4
Item Composition of the
Goyette et al. (1978) Factor Analysis

| Factor | | Item |
|-------------------------------|-------------|--|
| I. Conduct Problem | | 37. Basically an unhappy child |
| | | 38. Chip on shoulder |
| | | 39. Bullies other |
| | | 41. Sassy to grown-ups |
| | | 48. Fights constantly |
| | | 57. Destructive |
| | * 68, | 69. Denies mistakes or Blames others |
| | ** — | Quarrelsome |
| II. Learning Problem | | 54. Fails to finish things |
| | | 62. Difficulty in learning |
| | | 79. Distractability or attention span a problem |
| | | 85. Easily frustrated |
| III. Psychosomatic | | 21. Headaches |
| | | 22. Stomach aches |
| | | 23. Vomiting or nausea |
| | | 24. Other aches and pains |
| IV. Impulsive- Hyperactive | | 50. Wants to run things |
| | * 52. | Restless in the "squirmy" sense |
| | 53. | Excitable, impulsive |
| | ** — | Restless, always on the go |
| V. Anxiety | * 8, 9, 10. | Fearful (of new situa- tions, new people, places, going to school) |
| | 42. | Shy |

* Combined and reworded items

** New items

analysis which included preschool age children. The sample size (N=570) was adequate to provide a stable factor structure for 48 items. The authors of this study claimed that their study replicated the first five factors of the Conners (1973) analysis (Conduct, Anxiety, Impulsive-Hyperactive, Learning, Psychosomatic). However, item comparison of these two factor analyses revealed that only three factors were well replicated (Conduct, Anxiety, Psychosomatic). The other two factors were not similar in item composition although they were in content. In view of these facts, the claims of Goyette et al. (1978) appeared overstated.

In summary, the different factor structures which were reported contained several common dimensions of behavior which appeared in varying degrees. Clusters of items representing conduct and psychosomatic problems were well replicated in four studies, whereas behaviors reflecting anxiety were partially replicated in the same four studies (Conners, 1973; Glow, 1980; Goyette et al., 1978; O'Connor et al., 1980). Factors that reflect perfectionism and antisocial behaviors were consistently replicated in three studies (Conners, 1973; Glow, 1980; O'Connor et al., 1980). Item clusters containing behaviors indicative of tension appeared in two studies (Conners, 1973; O'Connor et al., 1980), as did clusters indicative of sleep problems (Glow, 1980;

O'Connor et al., 1980). Impulsive-hyperactive factors appeared in three studies (Conners, 1973; Glow, 1980; Goyette et al., 1978) but were only partially replicated. A poorly defined learning factor appeared in two studies (Conners, 1973; O'Connor et al., 1980).

Three studies used samples of adequate size to obtain a stable factor structure (Conners, 1973; Glow, 1980; Goyette et al., 1978). Two studies used samples of inadequate size for factor stability (Conners, 1970; O'Connor et al., 1980).

Overall, comparison of the factor structures was made much more difficult by the use of revised, modified, and shortened versions of the questionnaire. For example, items contained in Conners' (1973) Hyperactivity factor were not contained in the O'Connor et al. (1980) version of the questionnaire, which prevented replication. However, O'Connor et al.'s subjects did exhibit a Restless factor, which suggested a similar underlying behavior pattern. The five factors obtained by Goyette et al. (1978) contained similar behavior groupings to five of Conners' (1973) factors, although item composition was not always congruent. This should be expected since Goyette et al. (1978) used only 48 of the 93 available items of the questionnaire. The underlying behavioral dimensions in the various factor

structures often appeared to be similar. This suggested that the factors were measuring behavior accurately, but that other variables were influencing replication. Mac-coby (1964) stated that item selection, the setting under which observations are made, and subjectivity of raters are all determinants of factor composition. It is impossible to tell to what degree these variables have influenced attempts to replicate factors.

A common methodological weakness of most of the previous factor analyses was the use of samples including only elementary school age children. One study was the exception (Goyette et al., 1978), and included children from ages 3 to 17.

The Conners (1970, 1973) analyses were performed on a combination of clinical and control groups. All other reported factor analyses were performed on "normal" non-clinical samples. Although normative data is useful, there is a need for factor analyses on clinical populations because the major use of the CPQ is with clinical populations.

All previous factor analyses have been done on different versions of the CPQ. Although the Conners (1970) and the O'Connor et al. (1980) analyses were both done on the 73-item version, methodological problems (factoring by category, inadequate sample size) have invalidated the

Conners (1970) study. The review of acceptable factor structures included analyses of an 85-item version (Conners, 1973), a 48-item version (Goyette et al., 1978), a 96-item version (Glow, 1980), and a 73-item version (O'Connor et al., 1980). Technically, these can all be considered different questionnaires, which makes comparison of these factor structures difficult and perhaps meaningless. However, the factor analyses of the 85-item (Conners, 1973) and the 96-item (Glow, 1980) questionnaires are the most similar to the 93-item version, and thus have been accepted for comparison with the present data.

Reliability Issues

O'Connor et al. (1980) performed a test-retest reliability analysis for 30 of their subjects at a two month interval. They reported acceptable reliabilities (.70 or above) for seven of their twelve factors (Bullying, Emotional, Tense, Shy, Restless, School Problems, Toilet Problems). The test-retest reliabilities may have been improved if performed at a shorter time interval than two months. This length of time may have allowed substantial changes in a child or parent which could have influenced the parental ratings. Glow (1980) measured internal consistency (alpha coefficients) of his factors. For seven of the twelve factors the coefficients were acceptable

(.70 or above): Conduct problem, Immature-inattentive, Hyperactive-impulsive, Shy-sensitive, Perfectionist-compulsive, Tearful-dependent, Temperamental. For the remaining five factors, the values ranged from .57 to .68.

Although the results of these reliability measurements were supportive of the questionnaire and two of its factor structures, more investigation regarding reliability is needed on this questionnaire (Glow, 1980; O'Connor et al., 1980).

Validity Issues

Previous studies of the CPQ and some of its factor structures have provided information regarding the validity of this questionnaire. The following studies include information on the discriminatory, concurrent, and construct validity of the CPQ.

In the original publication of the CPQ, Conners (1970) used his six factors (by category) to discriminate between clinical and control groups, and between subgroups of the clinical group. Discriminate function analysis correctly identified 83% of the control and 70% of the clinical groups, based on these factor scores. The clinical group was divided into hyperactive and neurotic subgroups based upon family, school, and social history. Of these, 74% of the hyperactive and 77% of the neurotic children were correctly classified with discriminate function analysis of

factor scores. A subsample of the clinical and control groups was matched on age, sex, and race. For this subgroup, responses on individual items of the questionnaire were compared. Of the 73 items of the questionnaire, 53 discriminated between the clinical and control groups at a statistically significant level. Therefore, this study demonstrated discriminatory validity for factors as well as individual items of the questionnaire.

Some studies have measured concurrent validity for factors of the CPQ. The Conners (1973) eight factors have been utilized in a variety of studies on children's behavior (Campbell et al., 1978; Conners et al., 1972; Conners et al., 1979; Hoffman et al., 1974; Leon et al., 1980). Two studies compared factor scores pre and post-drug treatment for hyperactivity (Conners et al., 1972; Hoffman et al., 1974). Conners et al. (1972) found improvement in the scores on four factors following drug treatment (Conduct, Impulsive-hyperactive, Learning, Antisocial), whereas Hoffman et al. (1974) reported post-treatment improvement in scores on two of the same factors (Impulsive-hyperactive, Learning). In the latter study (Hoffman et al., 1974), the CPQ scores at pre-treatment were the most predictive of all the psychological measurements of success in drug treatment response.

Leon et al. (1980) compared groups of children considered depressed and nondepressed on scores on the Conners (1973) eight factors. Children were assigned to groups according to their scores on the Depression scale of the Personality Inventory for Children (PIC) (Wirt, Lachar, Klinedienst, & Seat, 1977). Children were admitted to the depressed group if they scored 1.5 standard deviation above the mean for the test, while children considered nondepressed were at the low range of the scoring group. Depressed children scored significantly higher on seven of the eight CPQ factors: Conduct, Anxiety, Impulsive-Hyperactive, Learning, Perfectionism, Psychosomatic, Muscular Tension. This study also compared scores on the Hyperactivity scale of the PIC with scores on the eight CPQ factors. Children's scores on the Conduct and Impulsive factors of the CPQ were positively correlated with scores on the Hyperactivity index, while scores on the Anxiety and Perfectionism factors of the CPQ were negatively correlated with scores on the Hyperactivity index. All of these correlations were statistically significant, providing examples of concurrent validity for the Conners (1973) factors.

Campbell et al. (1978) compared reports on four of the eight CPQ factors (Conners, 1973) (Conduct, Anxiety,

Impulsive, Learning) with retrospective infancy data, teacher ratings, and observational data in a longitudinal study of hyperactive children. Reported problems on the Conduct, Anxiety, and Hyperactivity factors of the CPQ were strongly correlated with maternal report of hyperactivity in infancy and Hyperactivity scores on the Werry-Weiss-Peters scale (Werry, 1968), providing another example of concurrent validity.

Previous factor analyses of the CPQ (Conners, 1970; Glow, 1980; Goyette et al., 1978) have yielded factors which discriminated between groups by age and sex. Boys were rated higher on seven factors in the Glow (1980) study (Conduct, Immature, Hyperactive, Self-gratification, Antisocial, Feeding Problems, Temperamental), on four factors in the O'Connor et al. (1980) study (Restless, Steals, School Problems, Toilet Problems), and on two factors in the Goyette et al. (1978) study (Conduct, Learning). This is concurrent with previous studies which have shown that boys are more often labeled as exhibiting problematic behaviors than are girls (Lapouse & Monk, 1963). Children in two previous factor analyses (Glow, 1980; Goyette et al., 1978) were rated differentially according to their age group. Younger children were reported to have more problems on four factors in the Glow (1980) study (Self-gratification,

Sleep Problems, Perfectionist, Tearful), while older children were said to have more problems on three other factors (Conduct, Immature, Psychosomatic). Goyette et al. (1978) also reported that parents rated younger children higher on one factor (Impulsive) and older children higher on a different factor (Psychosomatic). It is generally agreed that younger and older children exhibit different patterns of problematic behavior (Shechtman, 1970), so these differences in factor scores may be indicative of actual behavioral differences among subgroups.

The CPQ is sensitive to treatment effects in drug studies, discriminated between diagnostic groups, and was congruent with other measurements of children's behaviors. It has also demonstrated the ability to discriminate differences between age and sex groups. Overall, studies reviewed supported the assertions of validity for this questionnaire and several of its factor structures.

Summary and Conclusions

This review of literature has included information which is generally favorable regarding the CPQ. However, while being favorable, this information is inadequate to support unqualified assertions that the CPQ is psychometrically acceptable.

Previous factor analyses of the CPQ using individual items to obtain factors (Conners, 1973; Glow, 1980; Goyette et al., 1978; O'Connor et al., 1980) have produced two well replicated factors (Conduct, Psychosomatic). One other factor (Anxiety) is partially replicated in the same four studies. Other factors appear in various degrees in one to three studies (Perfectionism, Antisocial, Tension, Sleep, Impulsive-hyperactive, Learning).

Replication of factors has been complicated by the fact that all of the analyses have been done on different versions of the questionnaire. Some instability of factors is to be expected with the use of different item composition in the questionnaires. Therefore, it is impossible to determine if variation among factor structures is due to differences in item composition or to actual variation among samples. The one consistent variable across all the factor analyses is that all the studies used principal components analysis with orthogonal (Varimax) rotation.

In two of the factor analysis studies reviewed, small sample sizes were a methodological problem (Conners, 1970; O'Connor et al., 1980). All but one study limited their samples to elementary school age children (Goyette et al., 1978), while clinical application of the CPQ has no such limitation (Conners, 1970).

Perhaps the most obvious weakness of all prior factor analyses, though, is the consistent use of normative samples. Only one previous study utilized a partially clinical sample (Conners, 1970). Although comparisons between clinical and control groups in this study are reportedly favorable, methodological problems with the factoring by category are serious. The later publication of the re-analysis of this data (Conners, 1973) makes no mention of comparisons of clinical and control subgroups. However, item comparisons to differentiate between clinical and control groups are generally encouraging (Conners, 1970). Therefore, information regarding factor structure in a clinical sample seemed especially warranted.

Data regarding the reliability of the CPQ was promising, with test-retest reliabilities at acceptable levels for seven of the Glow (1980) factors at a two-month interval. Internal consistency measurements were reported in one study and were also favorable. However, reliability information on the CPQ remains scanty.

Data regarding the validity of the CPQ indicated that individual items of the CPQ and various factor structures were able to demonstrate differences between groups of various types. Various studies were reviewed which supported the validity of the CPQ. In one study the CPQ

demonstrated discriminatory validity (Conners, 1970), while in several studies concurrent validity was shown (Campbell et al., 1978; Conners et al., 1972; Hoffman et al., 1974; Leon et al., 1980). Three previous factor analyses have shown discriminatory validity between age and sex groups (Conners, 1970; Glow, 1980; Goyette et al., 1978). All of these studies have provided supportive information regarding the validity of the CPQ and its factor structures.

In summary, the review of literature revealed several deficits in the literature on the CPQ which require additional research. In order to improve the knowledge regarding the psychometric properties of the CPQ, future research should attempt to: 1) Use clinical samples, 2) Employ a standard version of the CPQ, 3) Include a wider age range of subjects, 4) Use an adequate number of subjects, and 5) Provide information regarding reliability.

CHAPTER 2

METHODS

Sample

The sample for this study was drawn from an urban child guidance center population. A total of 703 intake records of children referred to Houston Child Guidance Center (HCGC), Houston, Texas, were selected. A completed CPQ and adequate demographic data, collected during intake procedures, were prerequisites for inclusion in the study. Children with a history of hearing, vision, or other physical disabilities were excluded from the sample, as were children previously placed in special education classes. The CPQ is designed for use with children not considered retarded, psychotic, or with organic brain damage (Conners, 1970). The subjects were also required to be in the custody of at least one natural parent. The sample demographics are presented in Table 5. The subjects ranged in age from 2 to 17, with the greatest percentage being males (67%) between the ages of 7-11 (47.5%).

The agency population was divided into four divisions: 1) Early Childhood Division for children under age 6 and their families, 2) Guidance Division for children ages 6 to 17, 3) Habilitation Division for children of all ages who

Table 5
Sample Demographics

| Variable (<u>N</u> =703) | <u>Relative Frequency in Percent</u> | |
|------------------------------|--------------------------------------|------|
| | <u>N</u> | % |
| <u>Age</u> | | |
| 0-6 years | 197 | 28.0 |
| 7-11 years | 334 | 47.5 |
| 12-17 years | 172 | 24.5 |
| <u>Sex</u> | | |
| Male | 468 | 66.6 |
| Female | 235 | 33.4 |
| <u>Marital Status</u> | | |
| Intact | 270 | 38.4 |
| Separated | 125 | 17.8 |
| Divorced | 156 | 22.2 |
| Remarried | 152 | 21.6 |

had severe emotional or physical handicaps, and 4) Community Division for children referred by child welfare and other agencies. The majority of children seen at this agency were from the lower-middle socioeconomic class. The population of children seen at HCGC was 58.4% male and 41.6% female, with 10% under age 5 years, 35% 5 to 9 years, 37% 10 to 14 years, and 18% 15 to 19 years of age. The breakdown by race was 37% Black, 50% White, and 13% Hispanic. The sample was generally equivalent to the population of children seen at this agency.

Instrument

The CPQ (Conners, 1973) includes 93 items which encompass the most common behavioral problems in children. Parents rate their children on each symptom according to a four-point scale: 0-Not at All, 1-Just a Little, 2-Pretty Much, and 3-Very Much. A copy of the CPQ is found in Appendix 1.

Procedure

As a portion of the intake procedure at Houston Child Guidance Center, one or both parents were asked to complete the CPQ for their child. The instructions to the parents were as follows:

The questionnaire below is about the problems in behavior which children can have. Read each item carefully, then decide how much you think your child has shown the problem during the past month or so: NOT AT ALL, JUST A LITTLE, PRETTY MUCH, or VERY MUCH. Indicate your choice by circling the appropriate number to the right of each item. Please answer all items.

All cases were drawn from the applications on file in the Houston Child Guidance Center. Information gathered included age, sex, and race of the child, and socioeconomic status (Hollingshead index) and marital status of the parents. If the parents were previously separated or divorced, the time elapsed since the event was noted, as well as any remarriages of the parents. This information was intended to provide a profile of the children

assessed in the study. Responses by a parent to the 93-item CPQ were also recorded.

Applications on file were examined in consecutive order, beginning with those received in July, 1980, and continuing until 703 were obtained. In order to be eligible for inclusion, cases had to be filed in either the Early Childhood Division or the Guidance Division of the agency, as the other two divisions handle more physically impaired children and outside referrals. The next criterion for inclusion was a completed CPQ. The demographic data and parent questionnaire responses were then number coded for computer analysis.

Data Analysis

The responses to the CPQ were factor analyzed using principal components analysis with Varimax rotation (Nie, Hull, Jenkins, Steinbrenner, & Bent, 1975). This method of analysis was used in all prior factor analyses of the CPQ, and is suitable for use with the present data. Factors were accepted if they reached the criterion of an eigenvalue greater than 1.00. Items were assigned to a factor if their loading was .35 or above in that factor (Harmon, 1967).

For the reliability analysis and factor analysis, if an item loaded on more than one factor, the item was

assigned to the factor with the largest loading. For the resultant factors, internal consistency was calculated for each factor in the form of Cronbach's alpha coefficients (Cronbach, 1951). Factors were examined to determine which items loaded on more than one factor at a level of .35 or above, and these items were considered to be overlapping items on both factors.

CHAPTER 3

RESULTS

A principal components factor analysis with Varimax rotation yielded twelve factors which met the criterion for acceptance (eigenvalues greater than 1.00). These twelve factors accounted for 34.7% of the total variance. Table 6 presents the item composition and variance for these rotated factors, as well as factor loadings and communalities for each item. Communalities ranged from .05119 to .81478 with an average of .37438.

The primary factor included 17 items and accounted for 12.4% of the total variance, and was named Conduct Problems. Of the 17 items in this factor, 11 were nonoverlapping; that is, they did not overlap with any other factors obtained in this study. The items included in this factor reflect behavior which is disruptive, bullying, overactive, and dishonest. Five of the seven items in Conners' (1973) Conduct factor loaded on this factor, as did 10 of the 14 items from the Glow (1980) Conduct factor.

The second factor, which accounted for 4.8% of the total variance, was named the Hyperactive factor. Of the 11 items in this factor, five were nonoverlapping. The behaviors in this factor included overactivity also, but

Table 6
Factor Analysis Results

| Factor | % Variance | Loading | Communality |
|----------------------------------|------------|---------|-------------|
| <u>I. Conduct Problems</u> 12.4% | | | |
| ** 38. Chip on shoulder | | .51 | .49465 |
| 39. Bullies others | | .71 | .57476 |
| 40. Brags and boasts | | .56 | .39917 |
| 41. Sassy to grown-ups | | .59 | .40995 |
| 49. Disturbs other children | | .60 | .50848 |
| 50. Wants to run things | | .69 | .54159 |
| 51. Picks on other children | | .68 | .52540 |
| ** 52. Restless, overactive | | .45 | .54776 |
| ** 53. Excitable, impulsive | | .45 | .50195 |
| 55. Explosive, unpredictable | | .55 | .54624 |
| 56. Throws self around | | .42 | .44262 |
| 57. Throws and breaks things | | .42 | .38514 |
| 58. Pouts and sulks | | .40 | .41410 |
| 67. Won't obey school rules | | .40 | .35795 |
| ** 68. Denies wrongdoing | | .39 | .49727 |
| ** 69. Blames others | | .48 | .51818 |
| ** 70. Tells stories | | .44 | .49018 |
| <u>II. Hyperactive</u> 4.8% | | | |
| ** 52. Restless, overactive | | .40 | .54776 |
| ** 53. Excitable, impulsive | | .37 | .50195 |
| 54. Fails to finish things | | .56 | .46405 |
| ** 62. Trouble learning | | .38 | .33238 |
| 65. Daydreams | | .45 | .35034 |
| ** 68. Denies wrongdoing | | .40 | .49727 |
| ** 69. Blames others | | .36 | .51818 |
| ** 70. Tells stories | | .36 | .49018 |
| 79. Inattentive, distracted | | .70 | .54418 |
| 80. Fidgets | | .59 | .50018 |
| 90. As if driven by motor | | .38 | .51438 |

Table 6 (continued)

| Factor | % Variance | Loading | Communality |
|------------------------------|------------|---------|-------------|
| III. <u>Immature</u> | 3.5% | | |
| 31. Cries (Childish) | | .71 | .58903 |
| 32. Wants help with things | | .49 | .47889 |
| 33. Clings | | .50 | .39559 |
| 34. Baby talk | | .40 | .29015 |
| 81. Cannot be left alone | | .38 | .35790 |
| 88. Cries | | .68 | .54645 |
| IV. <u>Sleep Problems</u> | 2.8% | | |
| 4. Restless (in sleep) | | .59 | .42928 |
| 5. Nightmares | | .61 | .43419 |
| 6. Awakens at night | | .66 | .51105 |
| 7. Cannot fall asleep | | .46 | .28430 |
| 10. Afraid to be left alone | | .40 | .40947 |
| V. <u>Anxiety</u> | 1.8% | | |
| 8. Afraid of new situations | | .52 | .44696 |
| 9. Afraid of people | | .55 | .45716 |
| 35. Keeps anger to self | | .38 | .25314 |
| 37. Unhappy | | .52 | .44370 |
| ** 38. Chip on shoulder | | .35 | .49465 |
| 42. Shy | | .52 | .40842 |
| 43. Afraid others don't like | | .55 | .41944 |
| 44. Feelings easily hurt | | .51 | .39810 |
| VI. <u>Antisocial</u> | 1.7% | | |
| 71. Steals from parents | | .65 | .53647 |
| 72. Steals at school | | .67 | .52415 |
| 73. Steals from stores | | .77 | .64792 |
| VII. <u>Psychosomatic</u> | 1.5% | | |
| 21. Headaches | | .59 | .41004 |
| 22. Stomach aches | | .69 | .54543 |
| 23. Vomiting | | .41 | .23586 |
| 24. Aches and pains | | .62 | .46125 |

Table 6 (continued)

| Factor | % Variance | Loading | Communality |
|-------------------------------------|------------|---------|-------------|
| VIII. <u>Sibling Problems</u> | 1.4% | | |
| 46. Feels cheated (siblings) | | .58 | .50658 |
| 47. Mean (siblings) | | .82 | .81478 |
| 48. Fights (siblings) | | .79 | .70332 |
| IX. <u>Perfectionism</u> | 1.4% | | |
| 76. Everything just so | | .62 | .42215 |
| 77. Things same way | | .53 | .31709 |
| 78. Sets goals too high | | .54 | .36721 |
| X. <u>Muscular Tension</u> | 1.2% | | |
| 12. Gets stiff, rigid | | .40 | .24844 |
| 13. Twitches, jerks, etc. | | .64 | .45848 |
| 14. Shakes | | .56 | .42393 |
| 16. Hard to understand | | .42 | .28658 |
| XI. <u>Learning/School Problems</u> | 1.1% | | |
| ** 62. Trouble learning | | .36 | .33238 |
| 63. Doesn't like school | | .60 | .46289 |
| 64. Afraid to go to school | | .47 | .33004 |
| 66. Truant from school | | .49 | .31501 |
| XII. <u>Elimination Problems</u> | 1.1% | | |
| 19. Soils self | | .71 | .50698 |
| 20. Holds back bowels | | .62 | .40137 |
| * 17. Wets the bed | | .32 | .27022 |
| * 18. Runs to bathroom | | .33 | .33678 |

* Loadings under .35

** Overlapping items

with more of a distracted, dreamy component than in the first factor. Three of the eight items in Conners' (1973) Hyperactivity factor fell into the present factor, as did four of the nine items in the Glow (1980) Hyperactive factor.

The third factor, labeled Immature, accounted for 3.5% of the total variance. None of the items in this factor were overlapping with other factors. The Conners (1973) study had no equivalent factor, but four of the five items in Glow's (1980) Tearful-dependent factor loaded on this factor.

Factor 4, Sleep Problems, contained five items which accounted for 2.8% of the total variance. Again, none of the items overlapped with any other factor in the present analysis. Conners' (1973) study had no sleep factor, but Glow's (1980) three-item Sleep factor was totally contained in the present factor.

Eight items, accounting for 1.8% of the total variance, comprised the fifth factor, Anxiety. One item in this factor overlapped onto another factor. Four items from the Conners (1973) anxiety factor loaded on the present factor, while six of the Glow (1980) items loaded on the current factor.

The sixth factor, Antisocial, included three items (none of which were overlapping) and accounted for 1.7%

of the total variance. Three items from the Conners (1973) Antisocial factor and two items from the Glow (1980) Antisocial factor were included in the present factor.

The Psychosomatic factor was seventh; the four items on this factor (none of which were overlapping) accounted for 1.5% of the total variance. In the previous factor analyses (i.e., Conners, 1973; Glow, 1980) the Psychosomatic factors had five items, four of which were included in the present factor.

Factor 8, Sibling Problems, had three items and accounted for 1.4% of the total variance. None of the items in this factor were overlapping. In previous factor analyses, these items loaded on the Conduct factors of the Conners (1973) and Glow (1980) studies.

The ninth factor, Perfectionism, contained three items and accounted for 1.4% of the variance. Again, these items did not appear in any other factor in the present analysis. This factor was exactly the same as factors found by Conners (1973) and Glow (1980).

Four items, accounting for 1.2% of the variance, comprised the tenth factor, named Muscular Tension. None of these items were overlapping. Three of the items in this factor appeared in Conners' (1973) Muscular Tension factor, while Glow's (1980) factor analysis reported no equivalent factor.

The eleventh factor, Learning/School Problems, contained four items and accounted for 1.1% of the variance. One overlapping item (Trouble learning) fell into the Hyperactive factor in the present analysis. These items originally loaded on the Learning and Anxiety factors of Conners' (1973) study, or the Immature and Shy-Sensitive factors in Glow's (1980) study.

The twelfth factor, Elimination Problems, contained two items accounting for 1.1% of the variance. None of these items were overlapping. Two other items (Wets the bed, Runs to the bathroom) had factor loadings very close to the cutoff level and are consequently included in Table 6. In previous factor analyses (Conners, 1973; Glow, 1980), these items did not load on any factors.

The criterion for replication of the Conners (1973) and Glow (1980) factors was that 80% of the items in those factors would have to appear in the present factor structure in order for the hypotheses to be supported. For the Conners (1973) eight factors, three met the criterion for replication. The three factors which were replicated were the Psychosomatic (80%), Perfectionism (100%), and the Muscular Tension (100%) factors. Two other factors were partially replicated; the Conduct factor (71%) and the Antisocial factor (75%), while the Anxiety, Impulsive, and

Learning Problem factors were not replicated.

Of the Glow (1980) factors, four of twelve met the 80% criterion for replication; the Immature (80%), Sleep Problems (100%), Psychosomatic (80%), and the Perfectionism (100%) factors. Three other factors were partially replicated; the Conduct factor (71%), the Shy factor (67%), and the Antisocial factor (67%). The five factors which were not replicated were the Hyperactive, Self-gratification, Feeding Problems, Tearful, and Temperamental factors. The percentages given represent the percentage of the previous factor (Conners, 1973; Glow, 1980) which occurs in the present factor. This was determined by dividing the number of items common to the previous (Conners, 1973; Glow, 1980) factor and the present factor by the total number of items in the previous factor (Conners, 1973; Glow, 1980).

In order for the Hypotheses to be supported, all of the Conners (1973) and eight of the twelve Glow (1980) factors needed to be replicated at the 80% level. As this did not occur, neither of the hypotheses were supported by the present data.

Reliability coefficients for these twelve factors are presented in Table 7. Good reliability coefficients were obtained for the Conduct Problems and the Sibling Problems factors (.89 and .85, respectively). Seven other factors

Table 7
Reliability Coefficients

| Factor | Cronbach's Alpha |
|------------------------------|------------------|
| I. Conduct Problems | .89 |
| II. Hyperactive | .75 |
| III. Immature | .77 |
| IV. Sleep Problems | .74 |
| V. Anxiety | .74 |
| VI. Antisocial | .79 |
| VII. Psychosomatic | .74 |
| VIII. Sibling Problems | .85 |
| IX. Perfectionism | .71 |
| X. Muscular Tension | .62 |
| XI. Learning/School Problems | .63 |
| XII. Elimination Problems | .64 |

with acceptable reliabilities had coefficients ranging from .71 to .79 (Hyperactive, Immature, Sleep Problems, Anxiety, Antisocial, Psychosomatic, Perfectionism). The last three factors (Muscular Tension, Learning/School Problems, Elimination Problems) had reliabilities ranging from .62 to .64.

Thirty items of the questionnaire failed to load at the specified criterion level (.35) on any factor. These

items, along with their highest loadings and communalities, are represented in Table 8. An examination of this table reveals that several of the items had their highest loading on factors that could be grouped conceptually. For example, the items "Bed wetting", "Runs to the bathroom", and "Loose bowels" have loadings of .32, .33, and .29 in the Elimination factor. The item "Worries about illness and death" has a .32 loading on the Psychosomatic factor. The item "Demands must be met" has its highest loading on two factors Hyperactivity (.33) and Perfectionism (.33), which both contain similar items. Several other items have their highest loading on the Hyperactivity factor; "Lets self get pushed around" (.33), "Laces and zippers open" (.31), "Unable to stop repetitive activity" (.31), "Poorly aware of surroundings or time of day" (.34), and "Clumsy" (.31). Had a cutoff of .30 been employed for inclusion in a factor, 17 more items would have loaded on a factor.

Table 8

Items That Did Not Meet Criterion^a

| Item Number & Content | Highest Loading | Factor |
|----------------------------------|-----------------|---------------|
| 1. Picky and finicky | .28 | Sleep |
| 2. Won't eat enough | .32 | Sleep |
| 3. Overweight | .15 | Anxiety |
| 11. Worries about illness, death | .32 | Somatic |
| 15. Stuttering | .31 | Tension |
| 17. Bed wetting | .32 | Elimination |
| 18. Runs to bathroom | .33 | Elimination |
| 25. Loose bowels | .29 | Elimination |
| 26. Sucks thumb | .15 | Immature |
| 27. Bites or picks nails | .15 | Somatic |
| 28. Chews on clothes, etc. | .18 | Hyperactive |
| 29. Picks at things | .24 | Hyperactive |
| 30. Does not act age | .33 | Hyperactive |
| 36. Lets get pushed around | .33 | Hyperactive |
| | .34 | Anxiety |
| 45. Has no friends | .26 | Anxiety |
| 59. Plays with sex organs | .22 | Elimination |
| 60. Sex play with others | .14 | Learning |
| 61. Modest about body | .23 | Anxiety |
| 74. Sets fires | .28 | Antisocial |
| 75. Trouble with police | .28 | Learning |
| 82. Climbing, into things | .32 | Immature |
| 83. A very early riser | .23 | Hyperactive |
| 84. Runs around at meals | .28 | Immature |
| 85. Demands must be met | .33 | Hyperactive |
| | .33 | Perfectionist |
| 86. Cannot stand excitement | .28 | Sleep |
| 87. Laces and zippers open | .31 | Hyperactive |
| 89. Unable to stop repetitive | .31 | Hyperactive |
| 91. Moods change quickly | .30 | Conduct |
| 92. Poorly aware surroundings | .34 | Hyperactive |
| 93. Clumsy | .31 | Hyperactive |

^a Criterion for loading is .35

CHAPTER 4

DISCUSSION

The present study found twelve factors which encompass the major dimensions of behavioral problems in children. Most of the factors are well defined and deal with one major category of children's behavior problems; Anxiety, Sleep, Immature, Antisocial, Psychosomatic, Sibling, Perfectionism, Tension, Learning, and Elimination. Interestingly, these factors conform to the conceptual groupings of items performed by the author of the test (Conners, 1970). The two major factors (Conduct, Hyperactive) are more generalized in content. The Conduct factor contains disruptive, bullying behaviors as well as overactive and dishonest components. The second factor, Hyperactive, includes both overactive and distracted components, as well as items reflective of dishonesty.

The reliability coefficients were acceptable for nine out of twelve factors. It should be noted, however, that for the three factors with unacceptable reliabilities scale length was in all probability a factor. As these three factors (Muscular Tension, Learning/School Problems, Elimination Problems) each had four items or less, the effect of error variances on the reliability coefficients

may have accounted for the low coefficients (Cronbach, 1951).

The items which had factor loadings below the specified criterion often had their highest loading on factors which contained items measuring similar behaviors. This was especially true for the Hyperactive and Elimination factors.

Although the hypotheses were not fully supported by the data, there were significant similarities between the present analysis and previous ones. Over half of the Conners (1973) and Glow (1980) factors were replicated at the 67% level or better. Item composition of the three questionnaires was different, and so item differences in factors were inevitable. For example, of the eight items deleted from the Conners (1973) analysis, six were included in the current factor structure. Also, with the idiomatic and translation changes in the Glow items, the resulting items may have assumed different connotations for the readers. The extent to which this occurred is impossible to measure. Differences between American and Australian standards of acceptable behavior in children, which would affect item selection, were also unmeasurable.

The failure to fully replicate previous factor structures (Conners, 1973; Glow, 1980) may reflect actual variations in behavioral constellations within the clinical

sample, rather than instability of the factor structure of the questionnaire. For example, the Conduct factor, which is the primary factor in the present and previous (Conners, 1973; Glow, 1980) factor structures, included a wider range of behaviors in the present sample. Some of the extra items reflected behaviors typically classified as hyperactive (Restless, overactive; Excitable, impulsive; Unpredictable; Throws self around; Throws and breaks things). It is logical that children considered difficult to manage would have a wider range of conduct disorders.

In Conners' (1973) and Glow's (1980) Conduct factors there appeared items measuring sibling difficulties. In the present study, these items appeared in a separate factor (Sibling Problems). This suggested discrete problems with siblings in the present clinical group.

The Hyperactivity factor in Conners' (1973) and Glow's (1980) studies included excessive motor activity that was difficult to control. However, in the present clinical sample, items that encompassed school difficulties (Trouble learning; Daydreams) and antisocial problems (Denies wrongdoing; Blames others; Tells stories) were also included. The overlapping of the Conduct and Hyperactivity factors in the present clinical sample suggested that children who were considered problematic exhibited a combination of conduct and hyperactive behaviors.

The Muscular Tension factor appeared in the present study and in the Conners (1973) study, which included a partially clinical sample. However, it failed to appear in the totally normative sample employed by Glow (1980). This behavioral constellation may be characteristic of a clinical population, and so would be especially useful for researchers utilizing the CPQ within a clinical domain.

The present study revealed a unique factor, Elimination Problems, not found in the Conners (1973) and Glow (1980) studies. At the .35 level, this factor included only items regarding bowel function. However, items measuring bladder function loaded close to criterion levels (.32, .33). These findings are congruent with Conners' original report (1970) of Enuresis items loading with the Encopresis factor in his clinical sample. Again these items are noteworthy to researchers and clinicians in a clinical setting.

The age range in the present sample may have accounted for some of the variation in the present factor structure from previously obtained structures. For example, the Immature factor in the present study included the item "Baby talk", which would be expected with a younger age group. Also, a younger group may exhibit more difficulty with their bowel and bladder function, being closer to the age of toilet training. The inclusion of older children

in the sample may help to account for some of the items as well. The Learning/School Problems factor included not only items relevant to learning but also the item "Is truant from school"; an occurrence much more typical of older children.

The present clinical sample included four factors which reflect psychosomatic problems: Sleep Problems, Psychosomatic, Muscular Tension, and Elimination Problems. Although previous factor structures have included one or two factors relating to physical problems, this clinical sample has more. This is congruent with another current report of multiple physical manifestations in a sample of clinical children (Edelbrock & Achenbach, 1980).

With one exception (Elimination Problems), the current factors are conceptually similar to factors obtained in the earlier studies (Conners, 1973; Glow, 1980). The variations which are present are thought to be due to actual behavioral differences between the present clinical sample and past non-clinical samples, variations due to a wider age range in the current sample, different item composition of questionnaires, and cultural differences between the present and previous samples. These variations may well account for the failure to fully and completely replicate the previous factor structures.

Conclusions and Limitations

A pervasive limitation of parent questionnaires in general is that they measure parental perception of children's behavior rather than direct observation of actual behavior in children. Conners (1970) suggested that the threshold of parents bringing their children to a child guidance clinic might be lower than the average tolerance level for aberrant behavior. This limitation should always be kept in mind when interpreting data garnered from parent report measures.

While the present study seems to provide replication for several factors of the previous factor analyses (Conners, 1973; Glow, 1980), the current methodology allowed for a more subjective rather than statistical comparison. A preferred direction for future research would be the use of confirmatory factor analysis techniques (Joreskog, 1978), so that statistical comparison of factor structures can be achieved.

The present study was intended to derive a factor structure for the CPQ using a sample of clinical children. As the major usage of the CPQ has been with clinical populations, variations between normative and clinical factor structures are of interest to the clinician in a clinical setting. Factor variations between the present and previous

studies indicate actual differences in behavioral constellations, supporting the importance of the present results. One application of the present data is the comparison of various subgroups on factor scores. A concurrent study has provided information on comparisons between age, sex, and marital status (of parents) subgroups on factor scores of the CPQ (Zeeb, 1982). This information might be used to target groups which would be especially vulnerable to certain behavioral manifestations.

Calculation of factor scores could be used as a type of scoring key to evaluate the severity of the presenting problems on intake, and possible to help plan therapeutic interventions. Longitudinally, factor scores on intake may be predictive of success in treatment.

Factor structures such as the one derived from the present study are forming the backbone of diagnostic categories in the ongoing task of developing a classification system of childhood psychopathology. In summary, factor structures such as the one derived in the present study have both theoretical and clinical applications in the study of childhood psychopathology.

APPENDIX 1
CONNERS PARENT QUESTIONNAIRE

The questionnaire below is about the problems in behavior which children can have. Read each item carefully, then decide how much you think your child has shown the problem during the past month or so: NOT AT ALL, JUST A LITTLE, PRETTY MUCH, or VERY MUCH. Indicate your choice by circling the appropriate number to the right of each item. Please answer all items.

| OBSERVATION | NOT AT ALL | JUST A LITTLE | PRETTY MUCH | VERY MUCH |
|---|---------------|------------------|----------------|--------------|
| PROBLEMS IN EATING: | | | | |
| 1. Picky and finicky | 0 | 1 | 2 | 3 |
| 2. Will not eat enough | 0 | 1 | 2 | 3 |
| 3. Overweight | 0 | 1 | 2 | 3 |
| PROBLEMS IN SLEEPING: | | | | |
| 4. Restless | 0 | 1 | 2 | 3 |
| 5. Has nightmares | 0 | 1 | 2 | 3 |
| 6. Awakens at night | 0 | 1 | 2 | 3 |
| 7. Cannot fall asleep | 0 | 1 | 2 | 3 |
| FEARS AND WORRIES: | | | | |
| 8. Afraid of new situations | 0 | 1 | 2 | 3 |
| 9. Afraid of people | 0 | 1 | 2 | 3 |
| 10. Afraid of being alone | 0 | 1 | 2 | 3 |
| 11. Worries about illness and death | 0 | 1 | 2 | 3 |
| MUSCULAR TENSION: | | | | |
| 12. Gets stiff and rigid | 0 | 1 | 2 | 3 |
| 13. Twitches, jerks, etc. | 0 | 1 | 2 | 3 |
| 14. Shakes | 0 | 1 | 2 | 3 |
| SPEECH PROBLEMS: | | | | |
| 15. Stutters | 0 | 1 | 2 | 3 |
| 16. Is hard to understand | 0 | 1 | 2 | 3 |
| WETTING: | | | | |
| 17. Wets the bed | 0 | 1 | 2 | 3 |
| 18. Runs to the bathroom | 0 | 1 | 2 | 3 |
| BOWEL PROBLEMS: | | | | |
| 19. Soils self | 0 | 1 | 2 | 3 |
| 20. Holds back bowel movements | 0 | 1 | 2 | 3 |
| COMPLAINS OF FOLLOWING SYMPTOMS EVEN THOUGH DOCTOR CAN FIND NOTHING WRONG: | | | | |
| 21. Headaches | 0 | 1 | 2 | 3 |
| 22. Stomach aches | 0 | 1 | 2 | 3 |
| 23. Vomiting | 0 | 1 | 2 | 3 |
| 24. Aches and pains | 0 | 1 | 2 | 3 |
| 25. Loose bowels | 0 | 1 | 2 | 3 |
| PROBLEMS OF SUCKING, CHEWING, OR PICKING: | | | | |
| 26. Sucks thumb | 0 | 1 | 2 | 3 |
| 27. Bites or picks nails | 0 | 1 | 2 | 3 |
| 28. Chews on clothes, blankets, etc. | 0 | 1 | 2 | 3 |
| 29. Picks at things such as hair, clothing, etc. | 0 | 1 | 2 | 3 |
| CHILDISH OR IMMATURE: | | | | |
| 30. Does not act his/her age | 0 | 1 | 2 | 3 |
| 31. Cries | 0 | 1 | 2 | 3 |
| 32. Wants help with things he/she should do alone | 0 | 1 | 2 | 3 |
| 33. Clings to parents or other adults | 0 | 1 | 2 | 3 |
| 34. Uses baby talk | 0 | 1 | 2 | 3 |

| OBSERVATION | NOT AT ALL | JUST A LITTLE | PRETTY MUCH | VERY MUCH |
|--|---------------|------------------|----------------|--------------|
| TROUBLE WITH FEELINGS: | | | | |
| 35. Keeps anger to self | 0 | 1 | 2 | 3 |
| 36. Lets self get pushed around by other children | 0 | 1 | 2 | 3 |
| 37. Unhappy | 0 | 1 | 2 | 3 |
| 38. Carries a chip on his/her shoulder | 0 | 1 | 2 | 3 |
| OVERASSERTS SELF: | | | | |
| 39. Bullies others | 0 | 1 | 2 | 3 |
| 40. Brags and boasts about self | 0 | 1 | 2 | 3 |
| 41. Sassy to grown-ups | 0 | 1 | 2 | 3 |
| PROBLEMS MAKING FRIENDS: | | | | |
| 42. Shy | 0 | 1 | 2 | 3 |
| 43. Is afraid others do not like him/her | 0 | 1 | 2 | 3 |
| 44. Has feelings which are easily hurt | 0 | 1 | 2 | 3 |
| 45. Has no friends | 0 | 1 | 2 | 3 |
| PROBLEMS WITH BROTHERS AND SISTERS: | | | | |
| 46. Feels cheated | 0 | 1 | 2 | 3 |
| 47. Is mean to brothers and sisters | 0 | 1 | 2 | 3 |
| 48. Fights with brothers and sisters | 0 | 1 | 2 | 3 |
| PROBLEMS KEEPING FRIENDS: | | | | |
| 49. Disturbs other children | 0 | 1 | 2 | 3 |
| 50. Wants to run things | 0 | 1 | 2 | 3 |
| 51. Picks on other children | 0 | 1 | 2 | 3 |
| RESTLESS: | | | | |
| 52. Restless, overactive | 0 | 1 | 2 | 3 |
| 53. Excitable, impulsive | 0 | 1 | 2 | 3 |
| 54. Fails to finish things he/she starts | 0 | 1 | 2 | 3 |
| TEMPER: | | | | |
| 55. Has explosive and unpredictable outbursts | 0 | 1 | 2 | 3 |
| 56. Throws self around | 0 | 1 | 2 | 3 |
| 57. Throws and breaks things | 0 | 1 | 2 | 3 |
| 58. Pouts and sulks | 0 | 1 | 2 | 3 |
| SEX: | | | | |
| 59. Plays with his/her sex organs | 0 | 1 | 2 | 3 |
| 60. Involved in sex play with others | 0 | 1 | 2 | 3 |
| 61. Modest about his/her body | 0 | 1 | 2 | 3 |
| PROBLEMS IN SCHOOL: | | | | |
| 62. Has trouble learning | 0 | 1 | 2 | 3 |
| 63. Does not like to go to school | 0 | 1 | 2 | 3 |
| 64. Is afraid to go to school | 0 | 1 | 2 | 3 |
| 65. Daydreams | 0 | 1 | 2 | 3 |
| 66. Is truant from school | 0 | 1 | 2 | 3 |
| 67. Will not obey school rules | 0 | 1 | 2 | 3 |
| LYING: | | | | |
| 68. Denies having done wrong | 0 | 1 | 2 | 3 |
| 69. Blames others for his/her mistakes | 0 | 1 | 2 | 3 |
| 70. Tells stories which did not happen | 0 | 1 | 2 | 3 |
| STEALING: | | | | |
| 71. Steals from parents | 0 | 1 | 2 | 3 |
| 72. Steals at school | 0 | 1 | 2 | 3 |
| 73. Steals from stores and other places | 0 | 1 | 2 | 3 |

| OBSERVATION | NOT AT ALL | JUST A LITTLE | PRETTY MUCH | VERY MUCH |
|--|---------------|------------------|----------------|--------------|
| FIRE-SETTING: | | | | |
| 74. Sets fires | 0 | 1 | 2 | 3 |
| PERFECTIONISM: | | | | |
| 76. Has to have everything just so | 0 | 1 | 2 | 3 |
| 77. Must do things same way every time | 0 | 1 | 2 | 3 |
| 78. Sets goals too high | 0 | 1 | 2 | 3 |
| ADDITIONAL PROBLEMS: | | | | |
| 79. Inattentive, easily distracted | 0 | 1 | 2 | 3 |
| 80. Fidgets | 0 | 1 | 2 | 3 |
| 81. Cannot be left alone | 0 | 1 | 2 | 3 |
| 82. Climbs, gets into things | 0 | 1 | 2 | 3 |
| 83. Rises very early | 0 | 1 | 2 | 3 |
| 84. Runs around between mouthfuls at mealtime | 0 | 1 | 2 | 3 |
| 85. Has demands which must be met immediately | 0 | 1 | 2 | 3 |
| 86. Cannot stand too much excitement | 0 | 1 | 2 | 3 |
| 87. Has laces and zippers which are open | 0 | 1 | 2 | 3 |
| 88. Cries | 0 | 1 | 2 | 3 |
| 89. Cannot stop a repetitive activity | 0 | 1 | 2 | 3 |
| 90. Acts as if driven by a motor | 0 | 1 | 2 | 3 |
| 91. Has moods which change quickly | 0 | 1 | 2 | 3 |
| 92. Seems unaware of surroundings or time of day | 0 | 1 | 2 | 3 |
| 93. Clumsy | 0 | 1 | 2 | 3 |
| OVERALL RATING: | | | | |
| 94. Do you feel your child has a serious problem? | 0 | 1 | 2 | 3 |

PLEASE NOTE: The principal aim of Children's Mental Health Services is to provide a high-quality treatment program for children and families who are clients of the agency. To assist us in doing so, information you have provided in applying for services as well as during the course of treatment is coded anonymously (by number, not by name) and entered in an agency data bank. This will allow us to conduct research and evaluation studies important in administering our various programs. These studies will never identify you or your child by name.

CONSENT TO TREATMENT: I hereby give full consent for my child to receive the services of Children's Mental Health Services until I notify CMHS of any changes or until CMHS determines that treatment is no longer necessary. Also, this is to certify that I have legal responsibility for this child.

(Signature of Parent or Guardian)

(Date)

APPENDIX 2
INDEX OF SOCIAL POSITION

FORMULA FOR QUESTION #36

The Score for socio-economic classification is obtained by taking a weighted combination of an individual's socio-economic factor and his educational factor as outlined by A. B. Hollingshead.

- Step 1: Assign a score for socio-economic position based upon classifications in the xeroxed handout. Base this on information on head of household.
- Step 2: Select the proper score for educational level from the categories below. Base this on information on head of household.
- Score 1: Graduate Professional Training (persons completing a recognized professional course leading to a graduate degree)
- Score 2: Standard College/University Graduation (persons completing a four year college/university leading to a college degree)
- Score 3: Partial College Training (persons completing at least one year, but not a full college course)
- Score 4: High School Graduation (all secondary school graduates)
- Score 5: Partial High School (persons completing 10th or 11th grade, but not graduating)
- Score 6: Junior High School (persons completing 7th, 8th or 9th grade)
- Score 7: Less than 7 years of school (persons who have not completed the 7th grade)
- Step 3: Place factors in the following formula to obtain the Index of Social Position (I.S.P.)
- $$S.E.C. = (\text{Socio-economic score}) (7) + (\text{Education score}) (4)$$
- Step 4: Record S.E.C. in blanks provided on file two. (This should be a number between 11 and 77 inc.)

INDEX OF SOCIAL POSITION

A. B. Hollingshead

I. THE SOCIO-ECONOMIC FACTORA. Scale Positions1. Higher Executives, Proprietors of Large Concerns, and Major Professionalsa. Higher Executives

| | |
|------------------------------------|---------------------------------|
| Bank Presidents; Vice-Presidents | Military, Comm. Officers, |
| Judges (Superior Courts) | Major and above, |
| Large Businesses, e.g., Directors, | Officials of the Executive |
| Presidents, Vice-Presidents, | Branch of Govt, Federal, |
| Assistant Vice-Presidents, | State, Local; (Mayor, City |
| Executive Secretary | Manager, City Plan Director. |
| Treasurer. | Internal Revenue Directors. |
| | Research Directors, Large Firms |

b. Large Proprietors (Value over \$100,000)

| | |
|-------------|----------------|
| Brokers | Dairy Owners |
| Contractors | Lumber Dealers |

c. Major Professionals

| | |
|-------------------------------------|-------------------------------|
| Accountants (C.P.A.) | Economists |
| Actuaries | Engineer (College Grad.) |
| Agronomists | Foresters |
| Architects | Geologists |
| Artists, Portrait | Lawyers |
| Astronomers | Metallurgists |
| Auditors | Physicians |
| Bacteriologists | Physicists, Research |
| Chemical Engineers | Psychologists, Practicing |
| Chemists | Symphony Conductor |
| Clergymen, (Professionally Trained) | Teachers; University, College |
| Dentists | Veterinarians (Surgeons) |

2. Business Managers, Proprietors of Medium Sized Businesses, and Lesser Professionalsa. Business Managers in Large Concerns

| | |
|-----------------------|--------------------|
| Advertising Directors | Office Managers |
| Branch Managers | Personnel Managers |

a. Business Managers in Large Concerns (Continued)

| | |
|-------------------------------|---------------------------------|
| Brokerage Salesmen | Police Chief, Sheriff |
| District Managers | Postmaster |
| Executive Assistants | Production Managers |
| Export Managers, Int. Concern | Sales Engineers |
| Govt. Officials, minor, e.g. | Sales Managers, National Concer |
| Internal Revenue Agents | Store Managers (\$100,000) |
| Farm Managers | |

b. Proprietors of Medium Businesses (Value \$35,000 - \$100,000).

| | |
|-------------------------------------|----------------------------------|
| Advertising Owners (-\$100,000) | Manufacturer's Representatives |
| Clothing Store Owners (-\$100,000) | Poultry Business (-\$100,000) |
| Contractors (-\$100,000) | Purchasing Managers |
| Fruits, Wholesale (-\$100,000) | Real Estate Brokers (-\$100,000) |
| Express Company Owners (-\$100,000) | Rug Business (-\$100,000) |
| Furniture, Business (-\$100,000) | Store Owners (-\$100,000) |
| Jewelers (-\$100,000) | Theater Owners (-\$100,000) |
| Labor Relations Consultants | |

c. Lesser Professionals

| | |
|-------------------------------|---------------------------------|
| Accountants (Not C.P.A.) | Military, Comm. Officers, Lts., |
| Chirodopists | Captains |
| Chiropractors | Musicians (Symphony Orchestra) |
| Correction Officers | Nurses |
| Director of Community House | Opticians |
| Engineers (Not College Grad.) | Public Health Officers (M.P.H.) |
| Finance Writers | Research Assistants, University |
| Health Educators | (Full-time) |
| Librarians | Social Workers |
| | Teachers, Elementary and High |

3. Administrative Personnel, Small Independent Businesses, and Minor Professionals

a. Administrative Personnel

| | |
|-----------------------------|---------------------------------|
| Advertising Agents | Section Heads, Federal, State, |
| Chief Clerks | and Local Gov't Offices |
| Credit Managers | Section Heads, Large Businesses |
| Insurance Agents | and Industries |
| Managers, Department Stores | Service Managers |
| Passenger Agents - R.R. | Shop Managers |
| Private Secretaries | Store Managers (Chain) |
| Purchasing Agents | Traffic Managers |
| Sales Representatives | |

b. Small Business Owners (\$6,000 - \$35,000)

| | |
|------------------------|------------------------------|
| Art Gallery | Clothing |
| Auto Accessories | Coal Business |
| Awnings | Contracting Businesses |
| Bakery | Convalescent Homes |
| Beauty Shop | Decorating |
| Boatyard | Dog Supplies |
| Brokerage, Insurance | Dry Goods |
| Car Dealers | Engraving Business |
| Cattle Dealers | Feed |
| Cigarette Machines | Finance Co., Local |
| Cleaning Shops | Fire Extinguishers |
| 5¢ and 10¢ | Painting Contracting |
| Florist | Plumbing |
| Food Equipment | Poultry Producers |
| Foundry | Publicity & Public Relations |
| Funeral Directors | Real Estate |
| Furniture | Records and Radios |
| Garage | Restaurant |
| Gas Station | Roofing Contractor |
| Glassware | Shoe |
| Grocery-General | Signs |
| Hotel Proprietors | Tavern |
| Inst. of Music | Taxi Company |
| Jewelry | Tire Shop |
| Machinery Brokers | Trucking |
| Manufacturing | Truckers and Tractors |
| Monuments | Upholstery |
| Package Store (Liquor) | Wholesale Outlets |
| | Window Shades |

c. Semi-Professionals

| | |
|--|------------------------|
| Actors and Showmen | Oral Hygienists |
| Army M/Sgt.; Navy, C.P.O. | Photographers |
| Artists, Commercial | Physio-therapists |
| Appraisers (Estimators) | Piano Teachers |
| Clergymen (Not professionally trained) | Radio, T.V. Announcers |
| Concern Manager | Reporters, Court |
| Deputy Sheriffs | Reporters, Newspapers |
| Dispatchers, R.R. Train | Surveyors |
| Interior Decorators | Title Searchers |
| Interpreters, Court | Tool Designers |
| Laboratory Assistants | Travel Agents |
| Landscape Planners | Yard Master, R.R. |
| Morticians | |

d. Farmers

Farm Owners (\$20,000 - \$35,000)

4. Clerical and Sales Workers, Technicians, and Owners of Little Businesses (Value under \$6,000)

a. Clerical and Sales Workers

Bank Clerks and Tellers
Bill Collectors
Bookkeepers
Business Machine Operators,
 Offices
Claims Examiners
Clerical or Stenographic
Conductors, R.R.
Employment Interviewers

Factory Storekeeper
Factory Supervisor
Post Office Clerks
Route Managers
Sales Clerks
Shipping Clerks
Supervisors, Utilities,
 Factories
Toll Station Supervisors
Warehouse Clerks

b. Technicians

Dental Technicians
Draftsmen
Driving Teachers
Expeditor, Factory
Experimental Tester
Instructors, Telephone Co.,
 Factory
Inspectors, Weights, Sanitary
 Inspectors, R.R.; Factory
Investigators
Laboratory Technicians
Locomotive Engineers

Operators, P.B.X.
Proofreaders
Safety Supervisors
Supervisors of Maintenance
Technical Assistants
Telephone Co. Supervisors
Timekeepers
Tower Operators, R.R.
Truck Dispatchers
Window Trimmers (Store)

c. Owners of Little Businesses

Flower Shop (\$3,000 - \$6,000)
Newsstand (\$3,000 - \$6,000)
Tailor Shop (\$3,000 - \$6,000)

d. Farmers

Owners (\$10,000 - \$20,000)

5. Skilled Manual Employees

Auto Body Repairers
Bakers
Barbers
Blacksmiths
Bookbinders

Electricians
Electrotypists
Engravers
Exterminators
Fitters, Gas, Steam

5. Skilled Manual Employees (continued)

| | |
|--|---------------------------------|
| Boilermakers | Firemen, City |
| Brakemen, R.R. | Firemen, R.R. |
| Brewers | Foremen, Construction, Dairy |
| Bulldozer Operators | Gardners, Landscape (Trained) |
| Butchers | Glassblowers |
| Cabinet Makers | Glaziers |
| Cable Splicers | Gunsmiths |
| Carpenters | Gauge Makers |
| Casters (Founders) | Hair Stylists |
| Cement Finishers | Heat Treaters |
| Cheese Makers | Horticulturists |
| Chefs | Linemen, Utility |
| Compositors | Linoleum Layers (Trained) |
| Diemakers | Linotype Operators |
| Diesel Engine Repair & Maint. (Trained) | Lithographers |
| Diesel Shovel Operators | Loom Fixers |
| Machinists (Trained) | Repairmen, Home Appliances |
| Installers, Electrical Appliances | Rope Splicers |
| Masons | Sheetmetal Workers (Trained) |
| Masseurs | Shopsmiths |
| Mechanics (Trained) | Shoe Repairmen (Trained) |
| Millwrights | Stationary Engineers (Licensed) |
| Moulders (Trained) | Stewards, Club |
| Painters | Switchmen, R.R. |
| Paperhangers | Tailors (Trained) |
| Patrolmen, R.R. | Teletype Operators |
| Pattern and Model Makers | Toolmakers |
| Piano Builders | Track Supervisors, R.R. |
| Piano Tuners | Tractor-Trailer Trans. |
| Plumbers | Typographers |
| Policemen, City | Upholsters (Trained) |
| Postmen | Watchmakers |
| Printers | Weavers |
| Radio, T.V., Maintenance | Welders |
| | Yard Supervisors, R.R. |

Small Farmers

Owners (under \$10,000)
Tenants who own farm equipment

6. Machine Operators and Semi-Skilled Employees

| | |
|----------------------------|-------------------------------|
| Aides, Hospital | Greenhouse Workers |
| Apprentices, Electricians, | Guards, Doorkeepers, Watchmen |
| Printers, Steamfitters, | Hairdressers |
| Toolmakers | Housekeepers |
| Assembly Line Workers | Meat Cutters and Packers |
| Bartenders | Meter Readers |
| Bingo Tenders | |

6. Machine Operators and Semi-Skilled Employees (Continued)

| | |
|-----------------------------------|--------------------------------|
| Bridge Tenders | Operators, Factory Machines |
| Building Superintendents (Cust.) | Oilers, R.R. |
| Bus Drivers | Practical Nurses |
| Checkers | Pressers, Clothing |
| Coin Machine Fillers | Pump Operators |
| Cooks, Short Order | Receivers and Checkers |
| Delivery Men | Roofers |
| Dressmakers, Machine | Set-Up Man, Factories |
| Elevator Operators | Shapers |
| Enlisted Men, Military Services | Signalmen, R.R. |
| Filers, Benders, Buffers | Solderers, Factory |
| Foundry Workers | Sprayers, Paint |
| Garage and Gas Station Assistants | Steelworkers (Not Skilled) |
| Stranders, Wire Machines | Waiters-Waitresses |
| Strippers, Rubber Factory | ("Better Places") |
| Taxi Drivers | Weighers |
| Testers | Welders, Spot |
| Timers | Winders, Machine |
| Tire Moulders | Wiredrawers, Machine |
| Trainmen, R.R. | Wine Bottlers |
| Truck Drivers, General | Wood Workers, Machine |
| | Wrappers, Stores and Factories |

Farmers

Smaller Tenants who own little equipment.

7. Unskilled Employees

| | |
|---------------------------------|----------------------------|
| Amusement Park Workers (Bowling | Janitors, (Sweepers) |
| Alleys, Pool Rooms) | Laborers, Construction |
| Ash Removers | Laborers, Unspecified |
| Attendants, Parking Lots | Laundry Workers |
| Cafeteria Workers | Messengers |
| Car Cleaners, R.R. | Platform Men, R.R. |
| Carriers, Coal | Peddlers |
| Countertermen | Porters |
| Dairy Workers | Roofers's Helpers |
| Deck Hands | Shirt Folders |
| Domestics | Shoe Shiners |
| Farm Helpers | Sorters, Rag and Salvage |
| Fishermen (Clam Diggers) | Stagehands |
| Freight Handlers | Stevedores |
| Garbage Collectors | Stock Handlers |
| Grave Diggers | Street Cleaners |
| Hod Carriers | Unskilled Factory Workers |
| Hog Killers | Truckmen, R.R. |
| Hospital Workers, Unspecified | Waitresses ("Hash Houses") |
| Hostlers, R.R. | Washers, Cars |
| | Window Cleaners |
| | Woodchoppers |
| | Relief, Public, Private |
| | Unemployed (No Occupation) |

Farmers

Share Croppers
Housewife and Student
Retired and Unemployed

APPENDIX 3
APPROVAL OF RESEARCH DESIGN
HOUSTON CHILD GUIDANCE CENTER



Houston
Child
Guidance
Center

director
james s. robinson, m.d.

associate director
michael h. white, m.s.w.

April 21, 1982

James Bray, Ph.D.
Department of Psychology
Texas Woman's University
Texas Medical Center
Houston, TX 77030

Re: Proposed Master's Theses
(Laura Strawn, Linda Zeeb)

Dear James:

This is to certify that the Research Committee of Houston Child Guidance Center has approved the data collection procedures upon which Laura Strawn's and Linda Zeeb's Master's theses research is based.

If you have any questions, please feel free to call me at Houston Child Guidance Center or at home (664-3791).

Sincerely,

C. P. Brady
C. Patrick Brady, Ph.D.
Director, Research and Training



a united way agency • guidance, early childhood, habilitation and consultation services • ima hogg school
3214 austin street telephone 713 526-3232 houston, texas 77004

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