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Advances in Family Research

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Citation
Hox, J. J. C. M., Meulen, B. F. van der, Janssens, J. M. A. M., Tavecchio, L. W. C., & Laak, J. J. F. ter. (1995). *Advances in Family Research*. Thesis Publishers. Retrieved from https://hdl.handle.net/1887/10164

Version:	Not Applicable (or Unknown)
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Note: To cite this publication please use the final published version (if applicable).

Advances in Family Research

ADVANCES IN FAMILY RESEARCH

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Bibliotheek
Wassenaarseweg 52
2333 AK Leiden

THESIS PUBLISHERS
AMSTERDAM 1995

UNIV.
LEIDEN
BIBL.

CIP-GEGEVENS KONINKLIJKE BIBLIOTHEEK, DEN HAAG

Advances

Advances in family research / J.J. Hox ... [et al.] -
Amsterdam: Thesis Publishers. - Graphs, tab.
5th Symposium of the Research Committee on Empirical
Family Research, Amsterdam, 8-9 December 1994.
- With ref.
ISBN 90-5170-322-8
NUGI 723
Subject headings: family / parenting / child-rearing

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Coverdesign: Mirjam Bode

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PREFACE

This book is the result of a symposium on 'Advances in Family Research' held in Amsterdam on 8-9 december 1994. This symposium was organized by the research Committee on Empirical Family Research of the Netherlands Organization for Scientific Research (NWO). The aim of the symposium was to discuss the current state of research on family issues, such as parenting, educational goals, family interactions, therapeutic intervention, and methodological issues in family research. Another central goal of the symposium was to bring together contributions from international experts and from graduate level researchers in the field, to present current research findings, discuss the state of the art and desirable developments.

The symposium was organized around three main strands, each opened by an invited speaker. The strand 'Child rearing: does it influence development?' was opened by prof. S. Scarr (Department of Psychology, University of Virginia, USA). The strand 'Differences in parenting style: causes and effects' was opened by dr. K. Kreppner (Max Planck Institut für Bildungsforschung, Berlin, FRG). The strand 'Measurement and analysis in family research' was opened by prof. T.A.B. Snijders (Department of Statistics and Measurement Theory, University of Groningen, NL). In addition to these strands there was a small special interest session organized jointly with the Dutch/Flemish Research Committee on Infertility and Reproductive Techniques. The chapters in this book are based on the papers delivered in the symposium, but they have been rewritten to include the comments and remarks made during the symposium and at a later stage by the chapter reviewers.

The organizing committee acknowledges the financial support of the Royal Netherlands Academy of Arts and Sciences (KNAW), the Netherlands Organization for Scientific Research (NWO), the faculty of Education of the University of Amsterdam, and the Faculty of Social Sciences of the University of Utrecht. Special thanks go to Ania Dalecki for displaying her editorial qualities in producing the final manuscript from a collection of files that differed widely in style and format, and contained a bewildering variety of hidden formatting codes.

J.H.

Amsterdam
October 1995

HOW DO FAMILIES AFFECT INTELLIGENCE? SOCIAL ENVIRONMENTAL AND BEHAVIOR GENETIC PREDICTIONS

Sandra Scarr

Social Environmental and Behavior Genetic Theories of intellectual development and academic achievement address underlying causes of intellectual variation and make predictions to account for existing observations. *Observations* are scientifically credible (reliable, valid) measurements of phenomena that are the subject matter of a theory. Measures of intelligence are usually tests, which may vary widely in content but which display a characteristic positive manifold of correlations, yielding a general factor, often called 'g' (Brody, 1992; Jensen, 1980). Both Socialization and Behavior Genetic Theory focus on processes that transmit behaviors from one generation to the next, so that observations of family influences are crucial to both theories. What is observed are co-occurrences or correlations between one event and another[1]. Observations are shaped into 'facts' by theories, by making 'sense' of the observation in terms of the theory (Scarr, 1985). Many observations can be made into different facts by different theories.

Most observations about determinants of intellectual differences can be fit to both Social Environmental and Behavior Genetic Theories and, thus, do not provide a critical test between them. Studies in the tradition of Social Environmental Theories typically confound genetic with social transmission of behavioral traits from parents to children (Scarr, 1992, 1993). Other observations, mostly from behavior genetic studies, do provide tests of different predictions that must be made by the two theories.

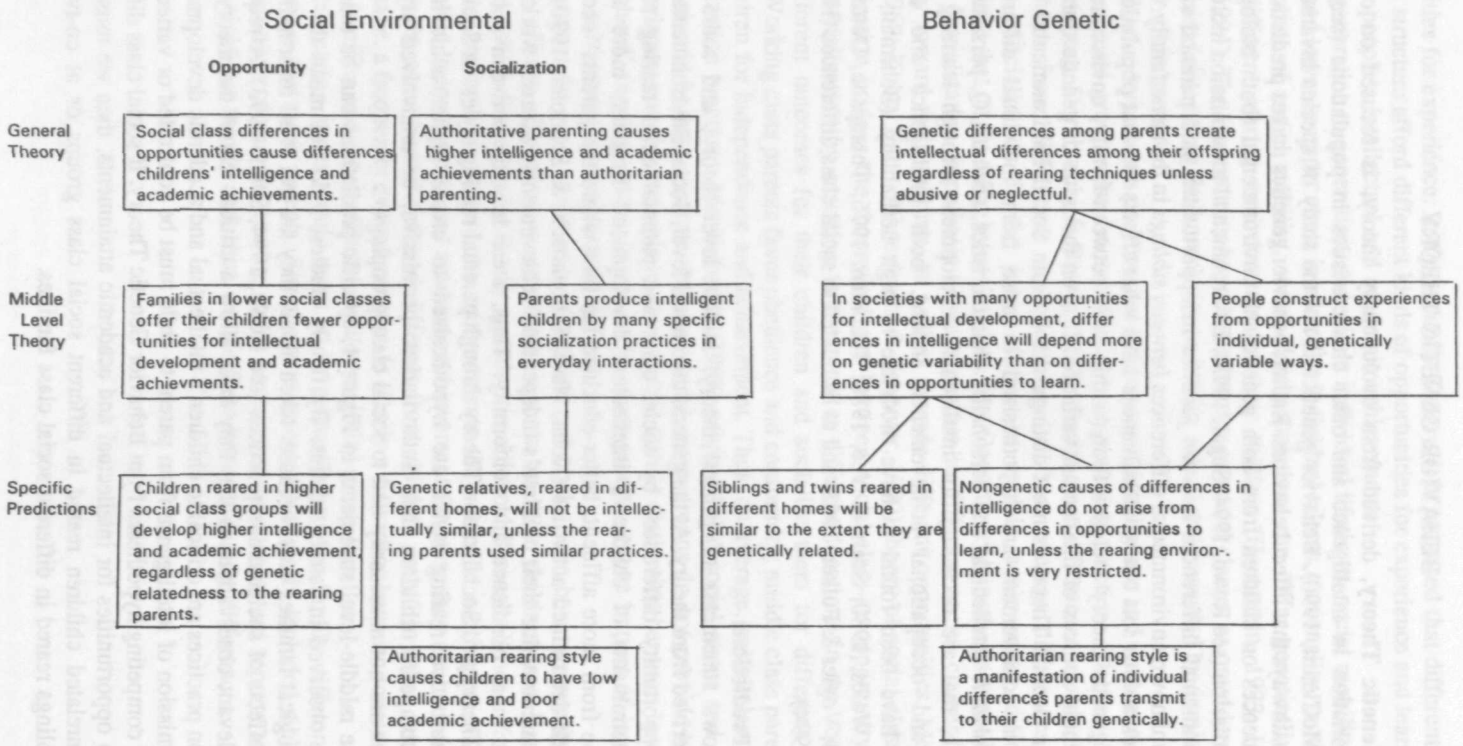
SOCIAL ENVIRONMENTAL THEORIES ABOUT INTELLIGENCE AND EDUCATIONAL ACHIEVEMENTS

Two kinds of social environmental explanations have been offered to account for variation in intelligence and academic achievement: Opportunity (or Social Class) Differences, and Socialization Differences.

Opportunity Differences. Differences in intelligence and academic achievement are hypothesized to arise from differences in *opportunities* to learn that are afforded by different social classes. This hypothesis does not address individual variability among children reared in the same social class groups. I (Scarr, 1992, 1993; Scarr & McCartney, 1983) have argued that social environments should be seen as sets of opportunities from which people make their own experiences. Individuals create experiences from available environments in their own developmentally- and individually-different ways. What environments provide, therefore, are

[1]Experimental studies of the core processes posited by both theories are not possible in human populations. Laboratory simulations can be experimentally arranged, but the phenomena studied are trivial reflections of the powerful processes posited by the theories to occur in everyday life. Parents have pervasive, longitudinal effects on child development that cannot easily be manipulated in short-term, artificial experiments on social learning. Nor can artificial selection experiments be used to test genetic hypotheses.

Competing Predictions from Social Environmental and Behavior Genetic Theories



Thus, the specific predictions that differentiate Social Environmental Theories from Behavior Genetic Theory are that (1) children reared in different social classes will differ in IQ and academic achievement, even if they are genetically related; (2) children reared in different homes will not resemble each other in intelligence or academic achievement, even if they are genetically related, unless their parents use similar rearing practices; (3) adopted children reared by the same parents will be similar in intelligence and academic achievement because their parents use similar rearing practices, and (4) authoritarian rearing style causes children to have lower intelligence and poorer academic achievement than authoritative rearing style, regardless of parents' intelligence.

Behavior Genetic Theory, at a general level, states that genetic differences are a major source of intellectual differences among children, regardless of parental rearing styles, unless parents are abusive or seriously neglectful (Scarr, 1992, 1993). At a middle level, the theory proposes that in societies, such as Western democracies, where opportunities for learning intellectual skills and knowledge are many and varied, individual difference in intelligence will result more from genetic differences than from differences in opportunities. A second middle-level proposition is that, given a variety of opportunities, people construct their own experiences (Scarr & McCartney, 1983; Scarr & Weinberg, 1983), and those constructions are to a large extent expressions of their individual personalities, interests, and talents.

Specific predictions from Behavior Genetic Theory focus on intellectual similarity to the extent that parents and children, and siblings, are genetically related, with little similarity in intelligence or academic achievement predicted when family members are genetically unrelated, even though reared in the same homes. Parental rearing style is predicted to be unimportant as a determinant of intelligence. Rather, authoritarian rearing style is predicted to be a manifestation of parental intelligence and achievement-related characteristics (motivation, personality traits) that are transmitted to children, in part, genetically. Observations of families with different degrees of genetic and environmental relatedness provide critical tests of Socialization and Behavior Genetic theories by testing specific predictions made from the theories.

OBSERVATIONS FROM OPPORTUNITY STUDIES

Social Structure, Opportunities, and Achievements

Observations of social class differences in intelligence and achievement are as old as Plato, and their origins are still being debated. Social Environmental and Behavior Genetic Theories make very different predictions about the effects of historical and social-demographic change on the SES-IQ connection. Regardless of theoretical motivation, however, studies of the phenomenon abound and produce remarkably consistent observations (see Jensen, 1980 for a review), not just in the United States, but in other free enterprise nations such as the U. K. (e.g., Essen, Fogelman, & Ghodsian, 1978), Australia (e.g., Marjoribanks, 1987) and Israel, (e.g., Zeidner, 1988); in socialist countries such as Sweden (e.g., Harnquist, 1989) and Denmark (e.g., Teasdale & Owen, 1985), and in developing countries such as Thailand and Malawi (Lockheed, Fuller, & Nyirongo, 1989). In all these diverse settings, higher SES is observed to be associated with higher levels of intelligence and academic achievement for adults and for their children. At issue are the competing theories to explain such ubiquitous observations.

Observations to be Explained

In the United States, IQ test scores among adult Euro-Americans typically vary by more than a standard deviation from the lowest SES group to the highest (Astone & McLanahan, 1991; Herrnstein & Murray, 1994; Jensen, 1980; Lamborn, Mounts, Steinberg, & Dornstein, 1991). IQ and achievement test score differences among children born into these SES groups is typically less -- about one-half to three-quarters of a standard deviation -- a phenomenon called regression toward the genetic mean of the population. Whereas adults who have achieved the highest occupational statuses average IQ 120, unskilled workers average about IQ 90. Among their children, professional status parents have children who average about IQ 115, while lower SES children average about 95. Correlations between adult IQ and SES average about .40: correlations for children's IQ with parental SES average about .30.

Differential Opportunities versus Heritability of IQ and Achievement

In a completely fair, equitable world, all individual differences would have a genetic origin, because there would be no arbitrary environmental differences[1] to create phenotypic variability. In an unfair world, arbitrary environmental differences in opportunity give some individuals better chances to acquire the skills and knowledge sampled by IQ tests and rewarded in schools (Scarr & Weinberg, 1976). Such environmental unfairness also reduces the heritability of a trait in that population, by preventing phenotypic expression of genetic variability (Fischbein, 1980, 1990; Scarr-Salapatek, 1971).

Equal environmental opportunities reduce phenotypic variability and increase the proportion of genetic variability in a trait.

When heritability of a trait in a population is high, it necessarily follows that observed differences in environments have little impact on observed variability. When heritability is low, environmental differences (of some kind) must be implicated. Behavior Genetic Theory predicts the effects of more equal opportunities are to increase the correlation between IQ/achievement and social class by increasing social mobility by IQ/achievements, thereby increasing the association between IQ/achievements and social class, and to increase the heritability of IQ/achievements by reducing arbitrary sources of environmental variance. Genetically-informative studies of twins and adoptees in Denmark (Teasdale, 1979; Teasdale & Owen, 1981; 1984a; 1984b; 1986; Teasdale, Sorensen, & Owen, 1984; Teasdale, Owen & Sorensen,1988), Norway (Heath,, Eaves, Nance, & Corey, 1987), and Sweden (Lichtenstein, 1993; Lichtenstein, Pedersen, & McClearn, 1992; Sundet, Tambs, Magnus, & Berg, 1988) show historical increases in the heritability of IQ and educational attainments with increasing educational opportunities, especially after World War II, and increasing correlations of abilities/attainments with social class across this century. Higher heritability and greater association between SES and IQ/achievement result from more equitable opportunities and more equal environments.

Gender differences in educational attainments were also used to test the effects of more equal opportunities in Sweden, where women who are now over 60 years of age had fewer educational opportunities by ability than younger women, and women had fewer opportunities

[1]"Environmental" differences would still be observed, because different people would elect to spend their time and energy in different pursuits, in different locations, with different associates. Thus, one would still find a correlation between individuals' abilities and achievements and their "environments", because of genotype-environment correlations. But the "environmental" differences observed would result from their different genotypes and not be a cause of their variability.

than men throughout the century until quite recently (Lichtenstein, Pedersen, & McClearn, 1992). Results showed higher heritabilities for educational achievement among the younger than older men, among younger than older women, and among men, rather than women. Among younger cohorts in societies that currently have excellent, universal educational opportunities, studies in Sweden (Fischbein, 1980, 1990; Fischbein & Guttman, 1992), Denmark (Teasdale & Owen, 1981, 1985; Teasdale, Sorenen, & Owen, 1984) and Norway (Heath, et al, 1988; Sundet, Tambs, Magnus, & Berg, 1988) show a secular trend toward higher heritabilities as more equal opportunities prevailed, and associations between social class and genetic differences in ability and achievement increased, while correlations between ability/achievement with family background declined for genetically unrelated persons.

Within the United States, correlations between social class and IQ/academic achievement are consistently higher in the Euro-American than in the African-American population. The degree to which social class is correlated with differences in intelligence and achievement seems to depend on the recent history of equal opportunities across classes. The more equal the opportunities to learn and achieve, the higher the correlations between IQ/academic achievement and social class. How to explain this observation? If opportunity differences among social classes determined differences in intelligence and achievement, more equal opportunities across classes should generate the opposite result; that is, more equal outcomes and lower correlations between abilities/achievements and social class.

So, do opportunity differences explain the SES-IQ/achievement connection in children's outcomes in European and North American populations today? Because studies generated by Opportunity Theory have not used genetically informative designs, there is no way from these data to choose between competing theories. Data generated by Behavior Genetic Theory address the competing predictions and provide results that challenge the Opportunity hypothesis. Data to be presented later will show Opportunity Theory unable to account for critical observations from adoptive families.

OBSERVATIONS FROM ACHIEVEMENT STUDIES

Socialization Studies

Parental rearing styles, observed and reported by family members, have often been found to correlate with child outcomes, including intelligence and school achievement. A recent study serves as an exemplar of the genre (DeBaryshe, Patterson, & Capaldi, 1993). This well-designed study demonstrates problems with causal inference, in the face of competently-conducted, causal analyses, because the authors do not address issues of genetic transmission of intelligence or achievement.

This study predicted academic achievement among 206 youths at risk for conduct disorder with parental rearing styles, parental WAIS-R IQ and education, and earlier measurements of the youths' own behavior problems and academic achievement. The authors proposed seven latent variable models to be tested for best fit. The report made clear that their preferred *a priori* model, which focused on parental discipline and conduct disorder, was not the best model fit to predict academic achievement differences among these boys. *Their best model was the only one that included a direct path from parents' IQ and education to youths's academic achievements.* The observation the authors ultimately could not avoid, which they included **in just one of the seven models,** was that the highest correlate of youths' academic test scores was parental WAIS-R IQ (r = .424).

Behavior Genetic Studies

Behavior genetic studies are characterized by designs that allow inferences about both environmental and genetic sources of variation. If the ecology of rearing environments (including home environments, neighborhoods, communities, and social classes , all of which are shared by family members) are important determinants of variation, then people reared together will resemble each other intellectually and, to some extent, in academic achievement, regardless of genetic relatedness. If, in addition, genetic resemblance plays a role in determining phenotypic resemblance, then genetic relatives will resemble each other intellectually, regardless of whether they were reared in the same ecology or not. If family members are individually variable apart from environmental differences between their families and in addition to genetic variability, then unique or nonshared environments (including biological as well as social environments) and measurement error are implicated.

Table 1. Intelligence Test Correlations of Siblings from Behavior Genetic Studies of Biological and Adoptive Families and Twins (adolescents and adults).

Genetic *r*	Relationship	Same Home?	IQ Corr.	No. of Pairs
1.00	Same person, tested twice	yes	.90	---
1.00	Identical twins	yes	.86	4672
1.00	Identical twins	no	.76	158
0.50	Fraternal twins	yes	.55	8600
0.50	Fraternal twins	no	.35	112
0.50	Biological siblings	yes	.47	26473
0.50	Biological siblings	no	.24	203
0.00	Adopted siblings	yes	.02	385

Sources: Loehlin (1989), Bouchard, et al. (in press); Pedersen et al. (1990); Plomin & DeFries, (1980, in press); Scarr & Weinberg (1978, in press); Teasdale & Owen, (1985).

As described earlier, adoptive and biologically related families, identical (MZ) and fraternal (DZ) twins, reared in the same and different homes, and more recently step-families with full, half- and unrelated sibling have been studied. Table 1 provides a summary of family correlations on IQ tests and the first Principal Component from batteries of tests of cognitive abilities; the results are equivalent, so I will not dwell on possible distinctions. These data have been summarized and discussed so often in textbooks, review articles, and other books that it is not necessary to repeat here what can easily be found elsewhere (e.g., Bouchard, Lykken, Tellegen, & McGue, in press; Plomin, 1990; Scarr, 1992, 1993).

Relatives resemble each other intellectually to the extent they are genetically related, and genetic relatives reared in different homes are somewhat less similar intellectually than those reared in the same homes. Adopted adolescent and adult siblings, reared together since early infancy, are no more similar in intelligence than randomly chosen people in the same populations. In North American and Western European populations, the heritability of IQ past childhood is quite high (about 70%), with small effects of differences between families, which would include opportunity differences by social class and most parental socialization

differences.[1] The unexpected finding is that most of the environmental variation is found in unique, individual experiences that siblings do not share (that is, environments that make siblings dissimilar). Analyses of these family data in simple heritability and in multivariate models can be found in many sources (e.g., Bouchard, et al.; Plomin, 1990; Scarr, 1992) and will not be repeated here. Heritability of IQ test scores has been repeatedly estimated to be between 60 and 80 percent of the variation in Western European and North American white populations.

Socialization Theory, focused on parental rearing practices, which presumably vary mostly *between* families, accounts for less than 10 % of the variation in intelligence in these populations. Studies of MZ twins reared in different homes (MZAs) illustrate this point most remarkably. Five studies that span 60 years all point to the same conclusion: Being reared in most homes provides equivalent opportunities for intellectual development; thus, the high correlations between IQ scores of MZAs, as shown in Table2.

Table 2. Sample Sizes and Intraclass Correlations for all IQ Measures and Weighted Averages for Six Studies of Monozygotic Twins reared Apart

Study and Test Used (Primary, Second./Tert.)	N for each Test	Primary Test	Secondary Test	Tertiary Test	Mean of Tests
Newman, et al. (1937) (Stanford-Binet/Otis)	19/19	.68	.74	-	.71
Juel-Nielsen (1965) (Wechsler-Belivue/Raven)	12/12	.64	.73	-	.69
Shields (1962) (Mill-Hill/Dominoes)	38/37	.74	.76	-	.75
Bouchard, et al. (1990) (WAIS/Raven,Mill-Hill/Raven)	50/45/44	.69	.78	.78	.75
Pedersen, et al. (1992) (First Principal Component)	45	.78	-	-	.78
Weighted Average	164/113/44	.73	.76	.78	.75

Note that each of the five studies included more than one set of cognitive tests or IQ tests, which further reinforce the overall consistency of the results. The general intelligence correlations of MZ twins reared in different homes range from .74 to .78, with a median value of .75. Rarely can one find such consistency in social science data across time, history, and cultures. The implications of these results are that the heritability of general intelligence in these European and North American populations over this half-century accounts for about 3/4 of the IQ variance and nonshared environments plus measurement error account for about 1/4.

[1]Parental goals, styles, and practices are primarily characteristics of the parents (Darling & Steinberg, 1993), but they can vary between siblings in the same family and thus be a source of nonshared environmental variation (Deater-Deckard, 1994; Reiss, Hetherington, & Plomin, 1994).

Critics of the studies of separated twins often focus on alleged similarities in the co-twins' rearing experiences, on the fact that most pairs have met in adulthood, and on other contact and environmental correlations in their backgrounds. The Minnesota and SATSA investigators have dealt systematically with such criticisms (Bouchard, et al., 1990; Pedersen, et al., 1992) and shown them to have little or no effect on the IQ and personality test results. In addition to gathering data about the objective circumstances of the twins' rearing environments (parental educational and occupational levels, material possessions in the homes) these investigators also gathered *perceptions* of the twins about their rearing environments, using instruments such as the Family Environment Scales (Moos & Moos, 1981).

Younger and Older Adoptees

Earlier studies of adopted children, which examined their similarities to their rearing families, compared to biological offspring to their families, included only young children with an average age of 8 years (e.g., Burks, 1928; Leahey, 1935: Horn, Willerman, & Loehlin, 1979; Scarr & Weinberg, 1976). Studies of young adoptees found the genetically-unrelated children's IQ scores correlated .24 on average with their adoptive parents and .34 with unrelated siblings. Although biological relatives had correlations in the .40 to .55 range, heritability estimates based on adopted children were much lower (.4 to .6) than those based on twins reared together and apart. Further, the correlations of unrelated siblings *is* a direct estimate of the magnitude of shared environmental effects, which were found to be negligible in twin studies but accounted for about 25% of the variation in adoption studies. The mystery of inconsistent results was solved when Scarr & Weinberg's (1978, 1983) study of older adolescent and young adult adoptees found IQ correlations of -.03 for older, unrelated sibling pairs and adoptive parent-child correlations of <.10. Shared environmental effects for young adults match the null to small effects estimated from studies of adult twins. With biological siblings' IQ correlations at .35, and biological parent-child correlations at .40, heritability estimates for WAIS IQ in the older samples approached those of the twin studies (.76 and .70). Results of the Minnesota Adolescent Adoption Study have been replicated by three other adoption studies of older adolescents and adults, adopted in infancy (Loehlin, in press; Loehlin, Horn, & Willerman, 1989; Kent, 1985; Teadale & Owen, 1985).

The original finding (Scarr & Weinberg, 1978) of null resemblance between adopted siblings in late adolescence and early adulthood inspired the theory of Genotype -> Environment Effects (Scarr & McCartney, 1983: Scarr & Weinberg, 1983). The theory predicts increasing heritability and declining effects of shared environments as people increasingly choose and make their own environments, rather than being strongly influenced by the home environment provided by parents. To test the theory, McCartney (McCartney, Harris, & Bernieri, 1990) conducted a meta-analysis of twin studies on IQ and personality to evaluate the effects of subjects' age on heritability estimates. She found a correlation of .30 between increasing age and increasing heritabilities, and evidence for declining effects of shared environments, in keeping with our theory (Scarr, 1992; Scarr & McCartney, 1983). Although heritability estimates for IQ variation in these populations range from .70 to .90, there is environmental variance (e^2) that ranges from .06-.30. All or nearly all of this environmental effect, however, is due to unique individual experiences, which cannot be programmed.

Thus, Opportunity Theory, which relies on correlations in biologically related families to make inferences about social class difference in opportunities, fails to account for the data from behavior genetic studies of twins and adoptive families. Observed differences in

intelligence by social class in European and Euro-American populations are not primarily due to differences in opportunities to acquire the skills and knowledge valued by the dominant culture. Similarly, Socialization Theory, which focuses on shared rearing environments, fails to account for the lack of such effects on intelligence past childhood.

Opportunity Theory has consistently claimed that social class differences in intelligence and academic achievement result from difference in opportunities to acquire the knowledge and skills valued by the middle class. Behavior genetic research offers strong evidence that differences in intelligence by social class arise, in large part, from genetic variability and not from differences in opportunities to learn, *in families that are not abusive, neglectful, or culturally different.* The unpalatable fact, generated by Behavior Genetic Theory from the observation of parent-child IQ correlations in adoptive and biologically-related families, is that adults in different social class groups are not genetically equal, nor do children from different social class groups, on average, have equal intellectual potential (Herrnstein, 1973; Herrnstein & Murray, 1994; Scarr & Weinberg, 1978, 1994; Weinberg, Scarr, & Waldman, 1992). Because between-family environmental effects have been shown over and over again to be quite small, social class differences must be largely genetic and to some extent heritable.

Genetic Effects on Environments

The omission of genetically-informative families in socialization studies has produced only uninterpretable results (Scarr, 1993, 1993). Socialization Theory has been moot on possible effects of genetic variability on intellectual development, and it ignores the confounding of genetic and environmental variability reported for the most common measures of family 'environment' (Chipuer, Plomin, Pedersen, McClearn, & Nesselroade, 1993; Plomin & Bergeman, 1991; Plomin & Daniels, 1987; Plomin, Loehlin & DeFries, 1985; Plomin, McClearn, Peterson, Nesselroade, & Bergeman, 1988, 1989; Rowe, 1981, 1983, 1994). Because family members report *perceptions* of the family environment, and because individual differences in social perception are partly genetic, measures of family 'environments", such as the *Family Environment Scales* (Moos & Moos, 1981) and the *HOME* scales (Caldwell & Bradley, 1984) are partly heritable (Anderson, Hetherington, Reiss, & Plomin, under review; Bouchard & McGue, 1990; Deal, Halverson, & Wampler, 1994; Jang, 1993; Plomin, 1994; Plomin & Bergeman, 1991; Plomin & Neiderhiser, 1992; Plomin, Loehlin, & DeFries, 1985; Plomin, McClearn, Pedersen, Nesselroade, & Bergeman, 1988, 1989; , Plomin, Reiss, Hetherington, & Howe, 1994; Rowe, 1981, 1983).

Four observational studies of parent-child interactions provide evidence of genetic effects on family environment, beyond perceptions. In the largest study ever done of genetic contributions to family 'environments", Plomin, Reiss, Hetherington, and Howe (1994; also reported in Plomin, 1994) found large effects for genetic differences (52 to 64% of the variance) and nonshared environments (25-37 %) in adolescents' positivity and negativity in interactions with family members, scored from videotaped observations. Strangely enough, the shared environment (all of the sibling and twin pairs in this study were reared in the same homes) accounted for only 0-23 % of the variance in adolescents' interactions. Parental positivity and negativity in interactions with their adolescent children showed more shared environmental effect (34-63 %) and lesser effects of genetic differences among the children (0-38 %) and nonshared environments (19-34 %).

Peer relationships and the choice of peers have been shown to be genetically variable (Plomin, 1994; Rowe, 1981, 1983), undercutting some rather convoluted environmental arguments (e.g., Brown, Mounts, Lamborn, & Steinberg, 1993; Durbin, Darling, Steinberg,

& Brown, 1993). Adolescents' ratings of positive peer and teacher relationships were moderately heritable (.31 and .38), but parents' ratings of their adolescents' popularity with peers and the delinquent, drug abusing, or college-bound orientation of peers showed more heritability than parent ratings of the family environment. For separate mother and father ratings, the heritabilities of peer popularity were .62 and .73; for peer college orientation, .73 and .85; for peer delinquency, .70 and .49, and for peer substance abuse, .72 and .74 (Plomin, 1994, Table 3.5, p. 86). Finally, evidence of genetic effects emerges from four observational studies of parenting and sibling behavior using child-based genetic designs. The results from these observations studies suggest that the genetic contribution to measures of the family environment is not limited to subjective processes involved in questionnaires. Genetic effects appear to be not just in the eye of the beholder but also in the behavior of the individual.

Similarity in intelligence among biological family members does *not* arise from growing up or living in the same household (Plomin & Daniels, 1987; Scarr & Grajek, 1982; Scarr & Ricciuti, 1991). Even socialization researchers now say that they do not expect that living in the same family makes siblings or parents and children similar to each other (Baumrind, 1993; Bronfenbrenner, Lenzenweger, & Ceci, 1993; Hoffman, 1991), because each person perceives and reacts to the family environment in different ways (for the theory, see Scarr & McCartney, 1983). The observed family correlations are not in dispute, but the causal mechanisms by which family members do and do not resemble each other are very hotly contested.

Parenting child-rearing styles, such as Baumrind's *authoritative*, *authoritarian*, *permissive*, and *uninvolved* classification are certainly genetically variable. Parental styles *are*, after all, parental behaviors, for which there is a great deal of evidence for heritability. Parent behaviors reflect intellectual and other personal differences among people, and the proportion of genetic variance in those characteristics has been repeatedly found to be 50 to 90 %, with much of the remaining nongenetic variance due to individual experiences. I rest my case.

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PARENTAL SHAPING OF GENDER IN CHILD-REARING[1]

Duane F. Alwin

One of the most significant puzzles faced by social and behavioral scientists involves the nature and origin of *gender*. It is usually assumed that if the structural categories of gender persist in society, each new generation of children must be socialized to reproduce them. Thus, some theories emphasize the active differential shaping of children by parents and other adults on the basis of sex (e.g. Block, 1983; Mischel, 1966). Others point to the critical role of 'self-socialization' in the play activities of children, which are often organized and supervised by parents (Piaget, 1965; Lever, 1976, 1978). By contrast, other theories deny the important role of intentional shaping of gender by parents, suggesting instead that 'gender personality' originates from the unconscious psychological processes of identification and role-modeling. For example, Chodorow (1974, p. 45) contends that the origin and perpetuation of gender lies in *sex-linked structural factors* tied to the care and nurture of children, *viz.* the fact that women are the primary caregivers in virtually all known societies, and that *parental socialization* is not a major exogenous factor in the etiology of gender. Although parental shaping of gender in child-rearing may play a role, according to this view, it mainly reinforces elements already put into place by early developmental processes.

Regardless of the potential role of early developmental processes of gender identification, the belief is widespread that the sex of the child is a critical differentiating feature of patterns of child-rearing, not only in Western society, but universally. It is commonly believed that, via parental shaping, girls tend to be socialized to be nurturant and responsible for others, whereas boys are trained to be autonomous and self-reliant (e.g. Barry, Bacon and Child, 1957; Hoffman, 1977; Mussen, 1969; Sears, Maccoby and Levin, 1957). In other words, sex-differentiated parental child-rearing behaviors is often given as an explanation for the perpetuation of gender over time.

Despite the pervasiveness of these beliefs, however, they have not been universally accepted. For example, reviewing the massive literature on sex differences in psychological characteristics and behavior, Maccoby and Jacklin (1974) concluded that the available studies focusing on parental socialization practices up to that time 'revealed a remarkable degree of uniformity in the socialization of the two sexes' (p. 348). They argued that there was little evidence of 'any consistent process of 'shaping' boys and girls toward a number of behaviors that are normally part of our sex stereotypes' (p. 348). Despite these general trends, Maccoby and Jacklin (1974) did find some evidence of differences in parental socialization. For example, with regard to the degree of restrictiveness or autonomy-granting by parents, they (1974:319) concluded that 'during the preschool years, there is a trend in some measures toward greater restriction of boys,' but they concluded, 'the findings from study to study are not consistent, and the bulk of the evidence is that there is little or no difference in the socialization of boys and girls when it comes to independence granting.' At the same time, they noted that 'boys seem to have more intense socialization experiences than girls.' There

[1]Research reported here was supported by grants from the National Institute of Mental Health (MH37289 and MH39761). The author wishes to thank Merilynn Dielman, Tom Carson, Rachel Murray, and Jill Corral for research assistance, and Jacqueline Scott and McKee McClendon for valuable suggestions during the preparation of the paper.

was greater use of physical punishment with boys (1974:330-35), a result consistently found over a wide range of ages. Boys also 'receive more pressure against engaging in sex-inappropriate behavior, whereas the activities that girls are not supposed to engage in are much less clearly defined and less firmly enforced' (p. 348).

The differences uncovered in the Maccoby and Jacklin (1974) review were small, and their general conclusion was that *neither* were there significant differences in sex-linked social and psychological orientations, *nor* were there major differences in sex-based socialization practices. Their argument was that the sexes were not really that different in terms of psychological characteristics and that there was no strong empirical basis for the thesis of sex-differentiated socialization. This coincides with the view expressed later by Maccoby and Martin (1983:82) that, based on studies of intrafamilial correlations in personality characteristics among both biologically-related and -unrelated siblings, parental behaviors seemed to have little effect on child outcomes.

This Maccoby-Jacklin conclusion is problematic for several reasons. First, the view that parents basically treat boys and girls in the same ways, poses a possibility that is very different from what most behavioral scientists teach and accept, given theoretical and empirical support for gender differences (e.g. Block, 1978, 1983).[1] Second, such a view of the relative unimportance of parental shaping of sex-differences would tend to raise doubts about the more general influences of parents on the behavior and qualities of their children. Parental socialization practices are normally thought to be influential on child development, and gender socialization in particular is often thought to be one of the most potent of child-rearing influences (e.g. Kagan and Moss, 1962). Third, this type of conclusion is problematic because any inferences based on the present body of knowledge must be tempered by the quality and sophistication of the research. Most family researchers probably believe, with Kagan (1984:275-76), that the influences of parents on children are subtle and complex, and that families in fact exert powerful influences on their children. Thus, the absence of strong findings pointing toward parental shaping of gender in children may result as much from deficiencies in the research on sex-based socialization, as it does from the absence of potent influences of parents on their children.

Of course, as I noted earlier, the possibility remains that gender does not result from active parental shaping, but emerges separately from processes which transmit *expectations* of gender to children. This view is consistent with the ideas expressed by Chodorow (1974) and Gilligan (1982), among others, who argue that gender is basically a 'structural' dimension and not strongly amenable to parental socialization. What matters in the development of gender is rooted in the child's *gender identification*, an embodiment of *social structure*, which arises out of early psychological development and sex-differentiated processes of individuation. This view suggests that regardless of parental approaches to child-rearing, what matters are the cultural beliefs, norms and expectations attached to the structural categories of *gender*. In this sense, the structural aspects of gender transcend parental uniquenesses, and convey to children, through the media and other institutional arrangements, definitions of gender which

[1]Block's work represents one of the most vigorous challenges to the type of conclusion advanced by Maccoby and Jacklin. She argues that not only is there a much stronger basis in the empirical literature for the conclusion of gender differences, but also that parental socialization practices are to be implicated in producing these differences. She suggests (Block, 1978:35-45) that Maccoby and Jacklin prematurely embraced these conclusions because they looked primarily at studies of young children, they did not consider the interaction of sex and age differences, and they ignored potential differences between mothers and fathers.

shape their development. This suggests that sex differences may not necessarily be observed in child-rearing approaches, but are more likely to be revealed in parental expectations of appropriate social roles, e.g. future occupational roles, for their children and in institutional arrangements consistent with those expectations.

SEX-DIFFERENCES IN CHILD-REARING BEHAVIORS

This paper re-evaluates the hypothesis of sex-differences in child-rearing orientations of parents in contemporary society. I consider both sex-of-child and sex-of-parent as potentially relevant sources of variation, and these are considered within the context of variation in developmental and socio-economic factors. I do so through a detailed analysis of patterns of self-reported child-rearing behaviors of mothers and fathers in a probability sample (n = 1,040) of a large, ethnically and socio-economically diverse metropolitan area, in which measures were selected to explicitly examine the link between gender and parental child-rearing. Specifically, I examine the reported child-rearing values and practices of parents using a survey interview that included a section in which parents of at least one child ranging in age from 2 through 17 were asked to respond to a series of inquiries directed at their *general* child-rearing goals and practices, as well as similar issues with respect to their child, or to a specific (randomly selected) one of their children. The latter permits the examination of differences in parental reports due to the sex of the child and the sex of the parent.

The selection of the sample and measures (described below) were justified according to three conceptual/theoretical and methodological criteria. First, the sample would have substantial numbers of parents, of both sexes, so that comparisons would be possible among mothers and fathers. For example, as Block (1978:36-38) notes, there is a relative lack of information about fathers and their role in the differential socialization of the sexes. And, as Maccoby and Jacklin (1974, p. 348) concede, 'it may be that fathers differentiate between the sexes to a much greater degree than do mothers,' from whom most information on child-rearing practices comes. Second, the sample should be of sufficient breadth to represent families of diverse ethnic, social, and economic backgrounds, with children of different ages. Third, measures should be selected that are linked theoretically to dimensions where differences might be thought to exist. And fourth, the analysis of the data should be developed within a multivariate context, assessing sex differences, while simultaneously assessing the effects of age differences and possible age-sex interactions. In this same vein, given Maccoby and Jacklin's (1974:348) observation that there is a general absence of research on the working class, such analyses should be sensitive to the potential socio-economic differences in sex-based socialization practices.

In addition to assessing contemporary differences in child-rearing orientations by sex of child and sex of parent, I also consider the question of changes in such orientations over time, although this is limited to measures of parental values. Using data from a 1964 survey conducted by Kohn (1969) I draw comparisons over time in sex-differentiation in parental values. Two issues are addressed: 1) Are parental values influenced by the sex of the child? and 2) Has the sex-differentiated nature of parental values changed over the recent past? The focus on these questions is driven in part by Hoffman's (1977) persuasive argument that changes in social roles, particularly those of women, have changed in such significant ways as to lead us to expect historical changes in the sex-linked orientations of parents. She suggests that declines in fertility and womens' time spent in child-rearing have brought about

changes in the family that have contributed to a diminution of sex-linked differences in the socialization of children.

HYPOTHESES

There are several reasons for the hypothesis that parental child-rearing orientations will vary according to the sex of the child. First, in virtually all known societies, there are gender differences in personality and temperament among adults. As Hoffman (1977:644) puts it, 'men in most societies are likely to be more aggressive than the women ... [and] most societies view women as nurturant, cooperative, expressive of emotions and tender.' Classical ethnographic evidence confirms that, though certainly not universal, there is a clear suggestion of tendencies in the direction of socialization of girls for nurturance and obedience and boys for achievement and self-reliance (Barry, Bacon and Child, 1957). As noted in the foregoing, more recent discussions by feminist scholars have acknowledged the presence of such tendencies, and have similarly located them in the early socialization experiences of boys and girls (see Block, 1983; Chodorow, 1978; Gilligan, 1982).

Second, most societies differentially allocate men and women to the societal division of labor, and this generally follows similar lines. Due to the biological differences in reproductive and lactation functions, women are much more likely to be engaged in the care and nurturance of children, although there is clearly a role for fathers in caring for children (see Chodorow, 1978). Exclusive parenting on the part of males, however, is extremely rare in either human or non-human primates (see Lamb, 1976). Along these lines, Redican (1976:345) notes, 'so salient is the role of the mother in caring for dependent young among human and many nonhuman animals that an entire class of animals (Mammalia) is named after one of her life-giving functions.' [Of course, it should be pointed out that men undoubtedly did the naming.] Distinct from their differential role in child-rearing, both men and women contribute to the economic activities of the family, although the contributions of women tend to be those that 'can be carried out relatively near the house, as in gardening or gathering, the cottage industries, crafts, or piecework at home' (Hoffman, 1977:644).

Third, if one assumes there is a role for non-biological factors in producing these differences among adult men and women in society, there must theoretically be some mechanism by which these differences are produced in children. As noted earlier, while some of these differences may result from psychological processes of identification and role modeling, modern social and behavioral science generally accepts the assumption that there is more to it. Block (1983), for example, suggests that there are differences in cognitive mechanisms that are shaped by sex-based socialization practices, differences which themselves engender and perpetuate differences in personality development. Using the Piagetian (1970) concepts of *assimilation* and *accommodation*, Block (1982) argues that by differentially shaping the experiences of boys and girls, their caretakers and co-actors (parents, teachers, siblings, other adults and peers) significantly influence the deep structure of cognitive development by (1) shaping different premises in boys and girls about the responsivity of the environment to one's actions, (2) differentially shaping the opportunities of boys and girls to experiment with and manipulate the environment, and (3) developing different cognitive strategies for 'responding to discrepant, disconfirming experiences' (1983:1345). Assimilative cognitive strategies are those which fit 'new information or experience into pre-existing cognitive schemas,' whereas accommodation involves modifying existing cognitive structures

and forming new ones (Block, 1983:1346). Socialization practices which create relatively structured environments, more typical of parental orientations to females, Block argues, provide experiences that lead one to assimilate the environment as it is, rather than to change it. Girls learn, in other words, to accept the experienced world rather than to restructure it, and the result is a cognitive differentiation that approaches experienced discrepancies in informational inputs differently from boys. On the other hand, the provision of environments that encourage exploration and manipulation, more typical of orientations to boys, tend to shape a more accommodative or manipulative stance toward that environment (Block, 1983:1347; Piaget, 1970).

Finally, a review of the literature on child's games suggests that gender differences emerge relatively early in play activities, which are to some extent organized by adult society. Piaget (1965) observed that boys are more likely to play rule-bounded games, while girls tended to be more flexible and tolerant of changes in the 'rules of the game' (1965:80-84). Gilligan (1982:16) interprets this to mean that in their games 'boys are more concerned with rules while girls are more concerned with relationships.' Lever (1976, 1978) also observed some significant differences in children's play.[1] Whether the effects of childrens' games are exogenous or endogenous is an important issue, but to the extent they are largely or in part endogenous, then they may merely reflect and/or reinforce the sources of gender-role socialization existent in parental behavior and the broader culture. Thus, these differences in childrens' play may stem from more generalized experiences of boys and girls. Even though Lever (1976:479) estimates that children spend nearly three-fourths of their non-school time in play activities, they are obviously spending the majority of their time with parental agents during the pre-school years, and by the age of 6 or 7 spend vast amounts of time in settings controlled by adults. We suspect therefore that the effects of childrens' games are largely endogenous, the nature of which is dependent upon factors in adult society that shape children's behavior. It therefore makes sense to examine adult orientations to child-rearing as exogenous factors in self-socialization processes.

Based on these several strands of research regarding the nature and origin of gender, I hypothesize that important sex-based differences exist in the orientations of parents to their children. Systematic and ethnographic observation can reveal the essence of gender in most cultures, but such research is unable to 'represent' parameters of interest in broad-based populations of relevance and to assess the magnitudes of differences. Thus, for present purposes I rely on data gathered from personal interviews with parents from a large, heterogeneous urban population. Admittedly, the subtleties in child-rearing may be difficult

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[1]Boys were observed to play in games with many more rules (1978:477), to play in games requiring teams (1978:479), to play in games with explicit goals requiring competition (1978:478-79) (in Lever's words (1976:482) "girls played more than boys and boys gamed more than girls."), boys tended to play outdoors much more than girls (1976:480), boys played in larger groups (1976:480; 1978:478), boys were more likely to play in games with greater role differentiation and interdependence of players (1978:477-478), boys are more likely to play in more age-heterogeneous groups, and girls more often played in predominantly male games than boys play in girl games (1976:481), and boys' games tended to last longer than girls' games (1976:482). Lever concludes from her research that the differences she observed in the leisure activities of girls and boys "lead to the development of particular social skills and capacities ... which are, in turn, are important for the performance of different adult social roles" (1976:484). Thus, girls' games appear to prepare them for work settings requiring different skills than those fostered by boys' games. To be specific, girls' games provide a "training ground for the development of delicate socio-emotional skills" (Lever, 1976:484), that is, they are more accommodating, whereas boys' games prepare them for competition in "controlled and socially approved competitive situations," demanding interdependence, teamwork and the development of leadership capacities.

to examine using survey interview methods, but on the other hand, there is probably no other valid approach to assessing these patterns, given the complexity of the phenomenon. The alternate hypothesis is that sex-based differences will not be found, for the following reasons. First, there is considerable within-sex variation in the treatment of children, and even within the same families children are influenced much more by other factors than their sex. Second, as Hoffman (1977) argues, social change in the roles of women may have reduced the extent of sex-differentiation in child-rearing. After all, virtually all of the relevant research on sex differences in socialization practices comes from the 1950s and 1960s, and findings in this area need to be placed in historical context and evaluated with respect to these changes. Third, despite my confidence in the potential of parental self-reports to reveal sex-differences in child-rearing orientations, it could be that gender is such a pervasive influence in social life that parents construct what they feel to be the socially desirable responses to the questions.

DATA AND METHODS

I indicated above that the selection of the sample and measures were developed in order to 1) provide sufficient samples of mothers and fathers, so that they could be compared with respect to the sex-differentiation in their child-rearing orientations, 2) the sample should be of sufficient breadth to represent families of diverse ethnic, social, and economic backgrounds, with children of a variety of developmental stages, 3) the measures were linked theoretically to key dimensions where differences might be thought to exist, particularly the dimension of autonomy versus obedience, and 4) the analysis of the data should be developed within a multivariate context, assessing sex differences, while simultaneously assessing the effects of age differences and their possible interaction with sex, and the potential role of socio-economic differences in sex-based socialization practices.

Samples and Data

I use data from two successive sample surveys of parents (who were raising children between the ages of 2 and 18) in the Detroit metropolitan area during 1982 and 1983. The data were gathered face-to-face in an interview of approximately one hour in duration, focusing specifically on respondents' experiences as a parent and their ideas and plans regarding their childrens' lives. The interviews in the 1983 study were conducted by professional interviewers, employed by the Survey Research Center of the University of Michigan, and trained specifically for this study. Approximately one-half of the interviews in the 1982 study were obtained by trained graduate student interviewers, and the balance were conducted by the SRC interviewers.

The 1982 sample was a standard cross-sectional area probability sample, stratified on race and geographical location, obtained from a sampling frame SRC developed representing the three-county area of southeastern Michigan (Wayne, Oakland and Macomb counties) making up the Detroit metropolitan area. The 1983 sample was somewhat different, involving a disproportionate over-sampling of households in high-density black areas. The response rates for the two surveys were approximately 80 percent, with resulting sample sizes of 540 and 520 in 1982 and 1983 respectively. In a few instances measures were obtained in only one of the two studies, but for most of the analyses data exist in both portions of the study. In the latter case, the data are combined and are weighted to take into account the disproportionate between-race sampling fractions.

Measures

To exhaustively map the domain of gender-relevant child-rearing approaches, I take a 'multiple indicators' approach. However, rather than assume these several indicators measure a common underlying dimension, I examine each subdomain separately, being sensitive not only to the common variation that is linked to gender socialization, but also to relevant variation specific to each indicator. Therefore the examination of hypotheses at this stage is rather more descriptive, or data-driven, than aimed the confirmation of abstract theoretical structures. The conceptual domains of theoretical interest are as follows: 1) *independence granting* -- the age at which the parent is willing to grant independence to children to do things on their own, 2) the extent of *restrictions and/or constraints* -- the degree of parental restrictiveness as shown by the setting of limits on children's activities; 3) *punitiveness* -- the extent to which parents used various forms of punishment to try to control the behavior of their child; 4) *parental warmth* -- the extent to which the parent expressed support in dealing with child's activities and problems; 5) *parental values* for self-direction vs. conformity in their children, involving a complex set of measures assessing the extent to which parental preferences for children's behaviors are oriented toward the fostering of 'self-direction' vs. 'conformity' in socialization of children; and 6) *parental expectations* of educational and occupational attainments, particularly the sex-typing of occupations. All these domains are related theoretically to the main dimension of interest, namely the extent to which parents accord similar treatment of boys and girls along the dimension of autonomy vs. obedience.

Independence-granting was measured as part of a survey experiment in which men and women were randomly assigned one of two questions, one referring to a boy and one referring to a girl. The score used here is based on the age at which the parent thought it was appropriate for a boy or girl to do the following: (a) staying home alone while parents were out for the evening, (b) riding a bicycle off the block, (c) shopping at the mall on one's own, (d) using matches or a lighter on one's own, (e) going places without parental knowledge, (f) discussing birth-control, (f) going out on a single date, (g) having a glass of beer or wine (other than a religious service), and (h) earning one's own spending money. The lower the average age score over these items, the greater the independence-granting.[1]

Restrictions and/or Constraints were measured using parental responses to questions involving the extent to which children were restricted in the following: a) restrictions on the amount of time the child watches television, b) limits on the type of television programs the child can watch, c) whether television viewing is permitted during evening meals, d) limits on how late the child can stay up at night, e) limits on the amount of candy, sweets, and snacks the child has, f) the extent of control the parent tries to exercise in selecting playmates, and g) for school aged children, the extent to which the parent controls free time after school, and h) whether the parent sets a time for homework.

Punitiveness is a trait that is least clearly related to the dimension of independence vs. conformity, as pointed out some time ago by Kohn (1969), since children can be punished for the lack of self-direction, as well as for the lack of obedience. However, prior research (Alwin, Xu, Carson and Spraggins, 1994) suggests that the extent of physical punishment is strongly related to this dimension of autonomy vs. obedience, and for this reason, we include it here. The score measuring this dimension was based on the parent's report of the frequency with which they used a) scolding or yelling, b) spanking, c) sending the child to their room,

[1]There were a few items on the list that were clearly tied to expectations of gender, which were excluded from the present score, e.g. taking care of younger children.

d) taking away privileges, and e) talking things over. In addition to this overall score, I also report results for scolding and spanking, as the literature specifically predicts a sex-difference in the most severe forms of punishment, with boys receiving more severe punishment.

Parental warmth was assessed by four questions asking the parent (a) how well they get along with the child, (b) how often they compliment the child, (c) how often the parent believes they can help the child when s/he is unhappy, and (d) how often they tell the child they love them. This score was included because of the traditional expectation that girls should be protected and coddled more than boys.

Self-direction vs. conformity values were assessed using an exact replication of a set of questions presented by Kohn (1969), in which parents were asked which of a list of 13 child qualities thay considered to be the 'most desirable for children to have.' The measure elicits which of the traits the parent considers the a) most important of all [5], b) one of the three most important, but not the most important [4], c) neither important or unimportant [3], d) among the least important qualities [2], and e) the least important of all [1]. The scoring of these traits in given in the []s. The qualities listed were: good manners, tries hard to succeed, honest, neat and clean, good sense and sound judgement, self-control, acts like a boy/girl should, gets along with other children, obeys parents well, responsible, considerate of others, interested in how and why things happen, and good student. For purposes of examining sex differences in parental values, we focused on good sense and sound judgement, the interest in why and how things happen, and responsibility as measures of *self-direction* values, and good manners, being neat and clean, and obeys parents as measures of *obedience* values. For a detailed analysis of parental values, we also provide data on all thirteen qualities.

Parental Expectations were measured by asking parents the number of years of schooling and the occupation they expected their child would attain. The occupational expectations were scored both in terms of socioeconomic status based on Duncan's Socio-economic Index (Duncan, 1962), as well as in terms of the 'sex-typing' of the occupation, measured here as the percentage female in a given occupation, based on 1980 Census reports.

RESULTS

To examine these issues I assessed mean levels of the above measures within categories of sex of child and sex of parent. These results are given in Table 1. There I present the raw subcategory means, along with the significance of the effects of parent gender and child gender in affecting the outcome variables.

These effects were assessed within a model that included several control variables: level of schooling, age of child, time spent with the child, and parental socio-economic class. Although I examined interactions of child and parent gender, interactions of child gender and age of child, and interactions of parental gender and age of child, here I present only the main effects (i.e. additivity is assumed) of gender of parent and gender of child. There were very few significant interactions, and none were sufficiently strong to alter the conclusions based on the main effects. Most of the control variables are actually orthogonal to gender of parent or gender of child (with the notable exception of time spent with the child), and therefore the primary effect of their inclusion in the regression model is to strengthen the power of the test because they reduce the unexplained variance in the denominator of the F-ratio. These results are therefore even more robust than if I had settled for an examination of the raw means without any control variables.

TABLE 1
Parental Reports of Child-Rearing Behavior by Sex of Parent and Sex of Child

TOTAL SAMPLE

	MOTHER				FATHER				STD.	PARENT GENDER	CHILD GENDER
Dependent Variable	GIRL	(n)	BOY	(n)	GIRL	(n)	BOY	(n)	DEV.	EFFECT	EFFECT
Restrictive	3.25	215	3.48	174	3.34	65	3.28	60	0.85	ns	p < .05
Punitive	2.81	372	2.96	346	2.64	154	2.75	168	0.68	p < .001	p< .01
Spank	2.13	372	2.20	346	1.86	154	1.96	168	1.00	p<.01	ns
Scold	3.37	372	3.60	346	3.30	154	3.52	168	0.99	ns	p < .001
Obedience Values	3.22	356	3.06	328	3.16	145	3.00	166	0.52	ns	p < .001
Nurturance/Warmth	3.58	216	3.57	174	3.43	66	3.45	60	0.70	ns	ns
Independence Granting	14.58	165	14.20	171	14.71	103	14.31	99	1.40	ns	p<.001
Autonomy Values	2.98	356	3.05	328	3.08	145	3.09	166	0.54	ns	ns
Achievement Expectations											
Educational	14.62	362	14.70	339	14.87	149	14.99	164	2.12	ns	ns
Occupational (SEI)	60.67	184	60.68	172	61.49	67	63.21	64	22.27	ns	ns
Occupational (%female)	53.90	186	16.38	178	52.20	69	15.19	66	34.32	ns	p < .001

WHITES

	MOTHER				FATHER				STD.	PARENT GENDER	CHILD GENDER
Dependent Variable	GIRL	(n)	BOY	(n)	GIRL	(n)	BOY	(n)	DEV.	EFFECT	EFFECT
Restrictive	3.04	95	3.54	65	3.30	43	3.18	43	0.88	ns	p < .01
Punitive	2.67	184	2.94	168	2.66	117	2.70	129	0.70	p < .05	p < .01
Spank	1.84	184	2.01	168	1.80	117	1.90	129	0.92	ns	ns
Scold	3.48	184	3.69	168	3.40	117	3.52	129	0.98	ns	p < .05
Obedience Values	3.06	177	2.85	164	3.13	112	2.91	127	0.50	p < .01	p < .001
Nurturance/Warmth	3.58	95	3.70	65	3.46	44	3.45	43	0.70	ns	ns
Independence Granting	14.12	95	13.83	102	14.57	87	14.25	75	1.35	p < .001	p<.01
Autonomy Values	3.11	177	3.23	164	3.10	112	3.16	127	0.52	ns	p < .05
Achievement Expectations											
Educational	14.47	180	14.76	168	14.71	113	14.96	125	2.09	ns	ns
Occupational (SEI)	61.03	84	58.78	85	63.98	46	60.37	48	22.89	ns	ns
Occupational (%female)	48.40	86	16.54	87	49.34	48	16.19	50	32.90	ns	p < .001

BLACKS

	MOTHER				FATHER				STD.	PARENT GENDER	CHILD GENDER
Dependent Variable	GIRL	(n)	BOY	(n)	GIRL	(n)	BOY	(n)	DEV.	EFFECT	EFFECT
Restrictive	3.4	118	3.45	109	3.40	22	3.56	17	0.81	ns	ns
Punitive	2.92	180	2.98	171	2.66	34	2.89	33	0.64	ns	ns
Spank	2.4	180	3.39	171	2.09	34	2.12	33	1.04	p < .05	ns
Scold	3.21	180	3.50	171	3.00	34	3.45	33	0.99	ns	p<.001
Obedience Values	3.37	171	3.26	158	3.32	31	3.34	33	0.48	ns	ns
Nurturance/Warmth	3.58	119	3.50	109	3.39	22	3.43	17	0.70	ns	ns
Independence Granting	15.33	61	14.75	63	15.61	12	14.37	20	1.36	ns	p<.001
Autonomy Values	2.83	171	2.87	158	2.96	31	2.84	33	0.52	ns	ns
Achievement Expectations											
Educational	14.80	174	14.61	164	15.33	33	15.09	33	2.17	ns	ns
Occupational (SEI)	60.20	95	61.98	84	54.86	19	13.31	14	21.70	ns	ns
Occupational (%female)	57.74	95	16.27	87	59.92	19	69.20	14	35.64	ns	p < .001

The results in Table 1 reveal some significant sex-differentiation in the responses of parents in the socialization of boys vs. girls. Parents are more restrictive of boys behavior, they punish boys more, by mainly verbally, not physically, and they stress more obedience values for girls. These effects vary somewhat by race, as black parents do not exhibit as much sex-differentiation, but overall the above conclusions generalize across racial groups. There are far fewer significant effects involving the gender of parent in this table. The main difference is that mothers are more punitive than fathers and use significantly more physical punishment. Note that this is true even when controls are introduced for the amount of time the parent spends with children.

The largest difference due to sex of child in Table 1 lies in the area of occupational expectations. There is little difference in the educational and occupational status expectations for boys and girls, but the result for the sex-typing of the occupation (measured by Census data on the percentage of women in that occupation). There are no differences in this effect by sex of parent, that is, both fathers and mothers expect their boys to go into male and girls into female occupations--the higher the percentage of females in a given occupation, the more (less) likely parents will expect girls (boys) to attain them. In other words, regardless of 'how' parents treat girls and boys, and for the most part parental treatment is very similar, they have very different expectations for their occupational destinations, when it is the sex-typing of occupation, rather than the occupational status, which is considered.

TABLE 2
Average Rank of Child Qualities by Year of Survey and Gender of Parent/Child

QUALITY	1982/83 MOTHERS				1982/83 FATHERS				1982/83 TOTAL			
	BOYS N=314	GIRLS N=347	t	p	BOYS N=157	GIRLS N=141	t	p	MOTHERS N=661	FATHERS N=298	t	p
MANNERS	3.11	3.13	.35	.73	2.88	3.13	2.96	.00	3.12	3.00	2.32	.02
SUCCEED	3.00	3.01	.13	.89	2.95	2.78	1.61	.10	3.01	2.87	2.28	.02
HONEST	3.69	3.75	.97	.33	3.81	3.82	.01	.92	3.72	3.81	1.59	.11
NEAT AND CLEAN	2.37	2.74	6.13	.00	2.61	2.80	2.17	.03	257	2.70	2.47	.01
JUDGEMENT	3.49	3.36	.96	.05	3.41	3.38	.23	.81	3.42	3.39	.44	.66
SELF-CONTROL	3.08	3.02	1.16	.24	2.94	2.90	.52	.61	3.05	2.92	3.05	.00
POLE	2.00	1.78	3.06	.00	2.12	1.79	2.83	.05	1.88	1.96	1.20	.23
AMICABLE	2.93	2.99	.88	.38	2.90	2.92	.20	.84	2.96	2.91	.90	.37
OBEYS	3.52	3.58	.83	.41	3.49	3.59	1.07	.28	3.55	3.54	.29	.76
RESPONSIBLE	3.23	3.19	.65	.52	3.29	3.21	.69	.50	3.21	3.25	.79	.44
CONSIDERATE	3.14	3.18	.73	.47	3.11	3.18	.96	.34	3.15	3.14	.32	.75
CURIOUS	2.60	2.52	1.10	.27	2.62	2.66	.35	.72	2.38	2.64	1.28	.20
GOOD STUDENT	2.84	2.76	1.34	.18	2.89	2.83	.54	.59	2.80	2.86	1.10	.27

The results for parental values are of particular interest because they suggest that parents stress more obedience values for girls, but no less valuation of autonomy (or self-direction). Preferences for autonomy vs. obedience in children can be examined more closely in the Detroit data (see Table 2). It is clear that both mothers and fathers want their daughters to be more 'neat and clean' than sons, and want boys to conform to sex-roles (act like a boy or girl should). Additionally, mothers want their boys to have better judgement and fathers want girls to have 'good manners' more than they do boys. Thus, while our results in Table 1 suggested support for the idea that parents stress values of obedience more for girls, the evidence is not really clear, as role-conformity and cleanliness are similarly linked to obedience values. Fathers are somewhat less discriminating, but do stand out in their greater preference for both 'good manners' and being 'neat and clean' more from their girls than their boys.

INTERPRETATION

Although these results seem to make sense, it should be apparent from the above that, with the one exception of sex-typed occupational expectations, the differences in child-rearing orientations tied to sex of child and sex of parent seem to be small in overall magnitude. Virtually all of the variance in our measures of child-rearing approaches occurs within rather than between the sexes. Why is this, given the theoretical potency and wide acceptance of theories of gender socialization? One possibility is that the theories are wrong; gender comes not from more or less intentional parental socialization, but from other sources, e.g. early unconscious identification with sex-roles and sex-typing, as Chodorow (1974) suggests. Another possibility is that things have changed, so that while we do not observe great differences in the measures due to sex of child and sex of parent, their role is diminishing over time. In other words, if we were able to look at these variables in the 1950s or 1960s the differences would be much larger. Unfortunately we cannot do this because we do not have a comparable array of variables that tap the dimensions studied here. We do, however, have access to Kohn's 1964 data on parental values which we can compare to the Detroit data.[1] Unfortunately, Kohn (1969) only asked the questions of men, not women, so we can only compare our 1982-83 Detroit data on men.[2] There are data from the General Social Survey (GSS) between 1973 and 1984, which include an adaptation of Kohn's parental value measures, and which, thus, permit a comparison of men and women over time.

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[1]We acknowledge the Inter-University Consortium for Political and Social Research of the University of Michigan for obtaining and archiving the data from Melvin Kohn's 1964 study, especially Erik W. Austin.

[2]There are some problems with such a comparison which may serve to invalidate it. For example, the Kohn data are national in scope, while ours represent a single large, urban, industrial area and its suburbs. Second, the Kohn data focused on males, age 16 or older, working at least 25 hours a week (Kohn, 1969, p. 237), whereas the Detroit samples were of both men and women, whose eligibility was determined by parental status rather than employment status. I control for this by comparing only the men in the Detroit sample with Kohn's 1964 data. Since more than 90 percent of these men were working at least 25 hours a week, they are essentially comparable to the men in Kohn's data. Third, the ages of children in the two sets of data are slightly different. The Kohn study focused on men with children ages 3 through 15 (Kohn, 1969, p. 238), while our data pertain to parents with children 2 through 17. This difference is, however, controlled in the following analyses by including "age of child" as a control variable in all comparisons of the two data sets.

The results comparing sex differentiation in Kohn's 1964 national data with the 1982-83 data are given in Table 3. Note that Kohn's 1964 data have many more cases than the Detroit data, so it is easier to achieve statistically significant results there. But I examined each trait for evidence of whether the sex-differentiation involved was in the same direction across years.

TABLE 3
Average Rankings of Child Qualities by Year of Survey and Gender of Child: Fathers, 1964 and 1982-83

QUALITY	1964 FATHERS				1982/83 FATHERS				TOTAL FATHERS			
	BOYS N=688	GIRLS N=667	t	p	BOYS N=157	GIRLS N=141	t	p	1964 N=1335	1982/83 N=298	t	p
MANNERS	3.15	3.20	1.20	.23	2.88	3.13	2.96	.00	3.17	3.00	3.64	.00
SUCCEED	2.79	2.62	3.91	.00	2.95	2.78	1.61	.10	2.71	2.87	2.97	.00
HONEST	3.84	3.72	3.20	.00	3.81	3.82	.01	.92	3.79	3.78	.09	.93
NEAT AND CLEAN	2.50	2.90	8.87	.00	2.61	2.80	2.17	.03	2.70	2.69	.10	.92
JUDGEMENT	3.02	3.07	1.02	.31	3.41	3.38	.23	.81	3.05	3.36	5.30	.00
SELF-CONTROL	2.84	2.82	.57	.57	2.94	2.90	.52	.61	2.83	2.93	2.33	.02
POLE	2.82	2.69	2.30	.02	2.12	1.79	2.83	.05	2.75	2.00	11.21	.00
AMICABLE	3.16	3.21	1.39	.17	2.90	2.92	.20	.84	3.19	2.93	5.22	.00
OBEYS	3.64	3.67	.51	.61	3.49	3.59	1.07	.28	3.65	3.57	1.48	.14
RESPONSIBLE	2.79	2.81	.54	.59	3.29	3.21	.69	.50	2.80	3.21	8.32	.00
CONSIDERATE	3.10	3.19	2.40	.02	3.11	3.18	.96	.34	3.14	3.15	.10	.92
CURIOUS	2.70	2.54	3.08	.00	2.62	2.66	.35	.72	2.62	2.70	1.25	.21
GOOD STUDENT	2.64	2.58	1.30	.19	2.89	2.83	.54	.59	2.61	2.81	3.67	.00

In all but one case the two series have identical findings with respect to direction of the effect, and/or lack of statistical significance (seven of the 13 differences were not significant in Kohn's data, whereas in Detroit ten of the 13 differences were nonsignificant). This provides overwhelming evidence that sex-typing in responses to the Kohn parental-value questions is relatively stable across the two samples, separated by 20 years. Thus, there is no support here for the argument that the reason we find so few large sex differences in child-rearing orientations in the 1980s is because things have changed. Obviously, it could still be true that we need to go back further in time and that before 1964 parental values showed much greater sex-differentiation than was found in Kohn's (1969) study.

It is significant in the context of the question of the magnitude of effects to note that, what little sex-differentiation there is in these measures of parental values it is dwarfed in comparison to the differences across time. The results in the far right panel of Table 3 show that Detroit fathers in 1982-83, regardless of the age and sex of their children, placed greater emphasis on qualities associated with *autonomy* and revealed substantially less overall preference for qualities linked to *obedience* than men in Kohn's 1964 national sample. Specifically, the Detroit men preferred significantly more 'good sense and sound judgment,' significantly more 'self-control,' significantly more 'responsibility,' and somewhat (although

not significantly) more 'curiosity' in their children. Thus, four of the five traits Kohn (1969, p. 58) defines as qualities associated with his concept of *self-direction* reveal changes in the same direction, controlling for the age and sex of the child. At the same time there are some differences in the two samples in preferences for Kohn's (1969) concept of conformity. Men in 1982-83 in Detroit prefer significantly less 'good manners,' somewhat less (but not significantly less) 'obedience,' but no differences in the quality 'neat and clean.' Again, in these results there appears to be little support for the idea that there are sex-differences in child-rearing values, and what has changed appears to be the general level of autonomy vs. obedience preferred for *all* children, regardless of sex.

The results regarding overall changes in parental values are consistent, not only with prior empirical results, but with prior predictions as well. In his 1969 book, *Class and Conformity*, Kohn (pp. 193-194) predicted that 'a major historical trend probably has been--and will continue to be--toward an increasingly self-directed populace.' The prediction is borne out in several recent studies, including findings from the classic Middletown studies (Caplow and Chadwick, 1979; Alwin, 1988), findings from the University of Michigan Detroit Area Studies of the Detroit metropolitan area from 1958 to 1988 (using a different measure of parental values) (Alwin, 1984, 1986, 1990b, 1995), and with national level comparisons of the 1964 Kohn data with later surveys from the General Social Survey (Wright and Wright, 1976; Alwin, 1989b, 1994). All of this evidence supports the conclusion that there is a trend away from conformity and toward self-direction *for children of both sexes*.

Patterns of change in child-rearing linked to gender, thus, appear to be overshadowed by other processes of social change. At the same time, we perhaps could not be more aware of the ways in which the women's movement and feminist thought have shaped the modern consciousness. Thus, it might be possible that the observed trends reflecting greater self-direction, as opposed to conformity, over time, are somehow linked to the progression of the women's movement and the assertion of women's values in more recent times. I examined this issue by examining the differences between men's and women's responses to an adaptation of the Kohn questioned used in the General Social Survey from 1973 to 1984 (data not shown). Again, there appeared to be very few differences between the values of men and women, although there was a slight tendency for women to prefer greater autonomy in children than men. There was no support, however, for the hypothesis that this had changed significantly over the period studied.

CONCLUSIONS

I began this paper by raising the question of the origins and nature of gender in modern social life. I suggested that research traditions in many areas of sociology and psychology have linked the reproduction of gender to the socialization of children, via processes of parental shaping. I raised the question, then, of whether gender differences resulted from processes involving parental shaping, or from other processes such as self-socialization and early unconscious processes of identification and role modeling. In addressing this issue, I found some evidence for parents treating boys and girls differently. Indeed, I found almost exactly what one would have predicted on the basis of the prior research literature. More restrictions were placed on boys and they are punished, mainly verbally, more often. Girls were more likely expected to conform to social conventions of having good manners and being neat and clean, although boys were also expected to conform to sex-roles more. There was no

suggestion in these findings that fathers are more sex-differentiating in their orientations to children, as has been predicted (e.g. see Maccoby and Jacklin, 1974, p. 348); and, in fact, the results that do emerge suggest that mothers make many more sex distinctions than fathers. Mothers were also seen to be more punitive than fathers, even when controlling for the amount of time spent with children.

With one major exception, the magnitudes of the observed differences are relatively small, and while they are consistent with a *parental shaping* viewpoint, they do not provide overwhelming evidence that gender results from differential treatment of children in child-rearing on the basis of sex. Sex of child and sex of parent explain little of the variance in child-rearing values and practices, which is somewhat surprising, given the theoretical potency of theories of gender socialization and their widespread acceptance. These results certainly reflect, and possibly result from gender, but they are simply not strong enough to suggest that gender necessarily originates from parental shaping. In fact, one might argue the opposite--namely that given such few differences, parental socialization acts as much to mollify the effects of gender as anything else. The absence of strong differences in these results is perhaps more consistent with theories that deny the intentional shaping of gender by parents. Chodorow (1974) argues that parental shaping is not a primary determinant of gender, but gender originates from the unconscious psychological processes of identification and role-modeling.

Given the pervasive influence of the structural origins of gender and its preservation via sex-linked structural factors tied to the care and nurture of children, *viz.* the fact that women are the primary care-givers in virtually all known societies, one possibility for the essentially null findings with respect to parental shaping is that the theories are wrong, gender comes not from parental socialization, but from early unconscious identification with sex-roles and sex-typing. This is also consistent with the powerful effects of sex of child observed here on the sex-typing of occupational expectations.

However, before dismissing the Detroit results as suggesting parental shaping makes little difference, I considered the possibility that the reason there were no differences found was that gender-shaping practices have changed, with the role of gender getting smaller over time, at least compared to the 1950s and 1960s. For this purpose I compared the Detroit 1982-83 data to Kohn's 1964 data on parental values for men. These results show that, at least for men, there are virtually no shifts in sexual-differentiation of child-rearing orientations. Moreover, available data on parental values in the General Social Survey further showed that men and women were very similar in the patterns of preferences they express for the qualities they would like their children to have.

Because of the lack of adequate data over time, it is not possible to completely rule out the possibility that vast changes have occurred in the nature of sex-differentiation in parental child-rearing practices, but based on the present set of results, it appears that at least in the contemporary American setting, there is little support for the thesis that sex-differentiated parental socialization is the active ingredient in the development of gender. The measures employed in this research show some predictable differences in the ways parents report raising boys and girls, but they are not overwhelming in their magnitudes, and certainly nowhere near large enough to be thought of as primary causal agents in the formation of gender. At the same time, there is clearly more support for theoretical notions involving *parental expectations* than there is for notions involving differential *parental shaping*. The major domain in which parents were seen to differentiate between boys and girls was not in how they were dealt with in the routine activities of child-rearing, but in the expectations

parents held for their future social roles, particularly the types of occupations they were likely to hold.

Thus, what may finally be the essential conclusion of this research which deserves the most emphasis is that the dimension of social change affecting the orientations of parents to children has little to do with their sex, and in most respects, despite the absence of such sex-differentiated socialization, the structural definitions of gender strongly persist. Rather, the relevant dimensions of social change for parental orientations may have more to do with the changing nature of the broader social and cultural context in which families are embedded. Previous research has shown, for example, that many of the changes observed in parental values for autonomy vs. obedience can be attributed to longterm structural changes in the development of Western society. Central to these are structural changes in the allocation of schooling opportunities, the social and economic assimilation of nineteenth-century ethnic immigrant groups of European origin, as evidenced by the observed role of schooling and religion as factors that shape changes in parental values (see Alwin, 1988, 1989b, 1995). The relative position of women may have also been altered by these changes, consistent with fertility declines and increased labor-force participation of women, and this may be a potent ingredient in the present lack of strong evidence of sex-differentiated parental shaping. But, even in the absence of parental shaping of gender, gender persists, and it can be seen in the expectations of parents, both mothers and fathers, for the types of attainments their children will have. Parents continue to believe that some occupations are for boys and others are for girls. I suspect that this difference points us in the right direction in trying to account for gender, namely toward a structural view, which organizes our thinking around the opportunities and constraints that exist in the cultural beliefs, norms and expectations about gender, and *not* in parental child-rearing practices.

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THE QUALITY OF THE PARENT-CHILD RELATIONSHIP AND CHILD CONDUCT DISORDERS

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In this study we examined relations between child conduct disorders and the quality of the parent-child relationship. By a good parent-child relationship, we mean a relationship that is based on mutual trust, acceptance and appreciation, and that is characterized by mutual emotional involvement and by affection and responsiveness towards each other.

In literature, the quality of the parent-child relationship is conceptualized in different ways. In the first place, there are authors who emphasize parental child rearing strategies and who define the quality of the parent-child relationship primarily in terms of support. Support refers to "...behavior manifested by a parent towards a child, that makes the child feel comfortable in the presence of the parent and confirms in the child's mind that he is basically accepted and approved of as a person by the parent" (Rollins & Thomas, 1979, p. 320). From review studies (Maccoby & Martin, 1983; Rollins & Thomas, 1979) on parental support it is clear that there is a relation between a lack of parental support and child conduct disorders. The less parents support their children, the more their children are conduct disordered.

Often in literature on child rearing, the relationship between parents and child is viewed as unidirectional: a lack of parental support leads to or causes child conduct disorders. Other authors conceptualize the parent-child relationship as bidirectional. Parents and child influence each other and problems arise when something is wrong in the way parents and child relate to each other. This bidirectional view is often represented in the literature on family therapy.

In the intergenerational family-therapy approach, the relationship between parents and child is strongly emphasized. The key concept of this theory is loyalty (Boszormenyi-Nagy & Spark, 1973). Because a child is taken care of by the parents and receives love and affection from the parents, the child owes loyalty to the parents (just as the parents owe the child care and affection). The child "repays" the parents for the care, support, nurturance and guidance received. Thus, a balance of credits and debits, of reciprocal give and take, develops between parents and child (Boszormenyi-Nagy & Spark, 1973).

Problems in the parent-child relationship arise if this balance of give and take is disturbed (Van den Eerenbeemt & Oele, 1987; Onderwaater, 1986). In the first place this may be the case when parents take too much from their child and don't give enough to the child. This is called parentification. The child does not receive the care and attention he/she needs and that the parents owe him/her. In the second place there is imbalance of give and take, when parents give a lot of care and support to the child, but do not allow the child to repay the parents. The child has no chance to give anything to the parents and is overprotected. In the third place problems arise when parents have different expectations from the child. The child wants to be loyal to both parents, but this is impossible, since both parents expect different things from the child (because the parents have different norms and values). To escape from this loyalty conflict, children often show conduct disorders.

In the intergenerational approach the way in which parents and child perceive the quality of the parent-child relationship is emphasized. In a good relationship parents and child perceive the balance of give and take as fair and just. A good parent-child relationship is perceived by parents and child as characterized by mutual trust, appreciation and by justice.

In the communication approach in family therapy, the emphasis is not on perceptions of the relationship, but on concrete behaviors and interactions between parents and children. According to the communication approach, the quality of the parent-child relationship is expressed in the way parents and child interact and communicate. Problems arise when parents and child interact in a dysfunctional way. In the literature many examples of dysfunctional interaction-patterns are given (Lange, 1985; Handboek Gezinstherapie, 1987). Very often the communication between parents and child is characterized by a power struggle, by misunderstanding each other, by criticizing, attacking, blaming and accusing each other and putting each other down, by interrupting each other and by name calling. In general, these dysfunctional communications do not lead to solutions, but very often to escalation of the conflict. Parents and child accuse each other of having caused the trouble. They do not realize that it is an interactional problem and that most of the time it is difficult or even impossible to say who started or caused the problem.

In the literature, child conduct disorders are related to the quality of the parent-child relationship. In this study we examined these relations. Concerning child conduct disorders we distinguished between internalizing problems and externalizing problems. Children with internalizing problems are characterized by an overcontrol of emotions, by shyness, inhibitions and anxiousness. Children with externalizing problems are characterized by an undercontrol of emotions and impulses, by aggressive and aversive behavior (Smets, 1985). We analyzed the relations between the quality of the parent-child relationship on the one hand and internalizing and externalizing conduct disorders on the other hand. We also examined these relations separately for fathers and mothers, and for boys and girls. The results of a meta-analytic study (Rothbaum & Weisz, 1994), seem to suggest that there are sex-differences in the association between the quality of the parent-child relationship and a child's externalizing behavior. It was found that there were stronger associations between the parent-child relationship and child conduct disorders for mothers than for fathers. Furthermore, a child's externalizing behavior was more strongly linked to the parent-child relationship for boys than for girls.

METHOD

Subjects

The sample consisted of 26 girls and 46 boys with a mean age of 14 years. Fourteen families were one-parent families. The mean level of education of fathers was 3.08 and that of mothers 2.79 (range 1-9).

Measures

Support. To assess parental support we asked children to fill in two scales with seven-point items for each parent separately. Both scales were developed in a national survey research on child rearing and family functioning in the Netherlands (Gerris et al., 1993). The first scale "affection" (10 items, Cronbach's alpha = .90) assessed the degree to which a child experienced in his/her parents' child rearing expressions of warmth. The second scale "responsiveness" (8 items, Cronbach's alpha = .91) indicated the degree to which a child experienced that his/her parents react adequately to his/her needs. For each parent a measure of affection and responsiveness was assessed by computing mean scores over the items of a scale.

Perceptions of the quality of the parent-child relationship. To assess whether there is a good balance of give and take between parents and child we asked children to fill in three scales with seven-point items for each parent separately. The scales are from the Nijmegen Gezinsrelatietest (Nijmegen Family Relations Test) developed by Oud en Welzen (1989). The first subscale "justice" (10 items, Cronbach's alpha = .71) assessed how the reciprocity of give and take between parents and child was experienced by the child. The higher the scale score, the more a child felt fairly treated by his/her parents. The scale "appreciation" (13 items, Cronbach's alpha = .89) assessed the extent to which a child felt that he/she was appreciated by his/her parents. The third scale "trust" (12 items, Cronbach's alpha = 88) indicated the extent to which a child had trust in his/her parents. Measures of justice, appreciation and trust were assessed by computing mean scores over the items of a scale.

To assess whether fathers and mothers were satisfied about the relation with their child we asked them to fill in a scale "attachment". This scale was developed in the study of Gerris et al. (1993) and consisted of 9 seven-point items (Cronbach's alpha = .86). The mean score on this scale indicated the degree to which parents experienced a warm, personal relationship with their child.

Communication between parents and child. The quality of communication was assessed with questionnaires and observations. First, we asked parents and child to fill in the Parent Adolescence Communication Scale developed by Olson et al. (1983). This scale consists of 20 seven-point items (Cronbach's alpha = .88). Children were asked to fill in this questionnaire for fathers and mothers separately. Both fathers and mothers were asked to fill in the questionnaire separately with regard to the communication with their child. Mean scores were computed. The higher a score on the scale, the more positive the communication between parent and child was.

Parent-child interaction was also observed in three different task situations. First, we asked father, mother and child to talk about subjects they disagreed about. Preceding this discussion we asked parents and child to fill in a questionnaire consisting of 20 items about rules and norms that are important in families. After checking the answers, the observer asked parents and child to discuss during 15 minutes rules and norms they disagreed about. The second task was the Family Criticism Task. Parents and child were each asked to write down three issues, expressing dissatisfaction about particular behaviors of a family member. Father, mother and child had to discuss during 10 minutes the relative importance of the 9 issues written down. Third, we used the Family Discussion Task. Parents and child were asked to write down an issue they disagreed about. After that they were invited to explain their ideas about these issues and to try to reach agreement about solutions. Family members were allowed to discuss these issues during 20 minutes.

A tape recording was made of all verbal interaction. After that all interaction was transcribed and coded. The unit of analysis was an utterance from a parent or a child. The coded verbal behaviors included the following categories (The Cohen's Kappa's for each category are in parentheses): 1. Neutral problem talk (for example explaining one's point of view, asking neutral questions (.61)); 2. Positive communication (for example joking, agreeing with someone else, approving, emphatic remarks, encouragement, proposing solutions, compromising (.67)); 3. Negative communication (for example commands and prohibitions, attack questions, showing disapproval, mindreading, putdown, sarcasm, testing and challenging, threat and indifferent or evasive reactions on remarks of someone else (.73)); 4. Disagreements with someone else (.73). Because remarks of disagreement are not necessarily negative, we decided to group these remarks in a fourth category.

For each utterance we did not only code the content of the verbal behavior, but also who (father, mother or child) had spoken and to whom the message was directed. Because family members differed in their total amount of verbalization during the tasks raw frequencies were transformed into percentages, using the total number of utterances of a particular family member as denominator. In this study we used the proportions of negative and positive communication directed by one family member to another.

Conduct disorders. To assess conduct disorders we asked the parents to fill in a Dutch version of the Child Behavior Checklist (CBCL) (Verhulst, Koot, Akkerhuis & Veerman, 1990). The CBCL consists of 118 three-point items. Based on the norms published by Verhulst et al., two normalized T-scores have been computed, one to assess the amount of internalizing problems and one to assess the amount of externalizing problems. In the total sample these two measures were highly correlated ($r = .79$, $p < .01$). This finding might suggest to collapse both measures. We decided not to do so, because the correlation between externalizing and internalizing behavior was much smaller in the subsample of families with a conduct disordered child ($r = .60$) than in the subsample of the other families participating in this study ($r = .78$).

RESULTS

In Table 1, correlations are presented between externalizing and internalizing behavior on the one hand and measures of parental support and measures of the perceived quality of the parent-child relationship on the other hand. First, it was clear that affection and responsiveness were negatively related to externalizing and internalizing behavior. The less affective and the less responsive parents were according to their children, the more conduct disorders parents experienced. This held for boys as well as for girls, and for fathers as well as for mothers. Second, not only were the indicators of parental support (affection and responsiveness) related to conduct disorders, but also the parents' and the child's perceptions of the quality of their relationship. The less parents felt attached to their child, the more conduct disorders the child showed. And the more a child felt that he/she was not fairly treated or was not appreciated by his/her parents or reported a lot of distrust, the more conduct disorders the child had. Nearly all correlations in Table 1 were significant. That means that all relations found between parental support and the child's and parents' perceptions of their relationship on the one hand and conduct disorders on the other hand held for boys and girls, for fathers and mothers, and for externalizing and internalizing behavior. Comparing the strength of the correlations, it appeared that the relations were somewhat stronger for externalizing than for internalizing behavior, and stronger for mothers than for fathers.

In Table 2 correlations are presented between conduct disorders and the measures assessing the quality of parent-child communication. All questionnaire measures were highly related to conduct disorders. This means that the amount of externalizing and internalizing behavior was greater as parents and child experienced their communication with each other more negatively. This finding also held for boys and girls, for fathers and mothers and for externalizing and internalizing behavior. Correlations between observation measures of communication and conduct disorders were less impressive than the correlations between questionnaire measures of communication and conduct disorders.

Table 1 Correlations between conduct disorders and measures of parental support and measures of the perceived quality of the parent-child relationship

	externalizing behavior				internalizing behavior			
	fathers		mothers		fathers		mothers	
	boys	girls	boys	girls	boys	girls	boys	girls
Parental support								
affection	-.23'	-.67**	-.48**	-.47**	-.23'	-.47*	-.15	-.35*
responsiveness	-.32*	-.48*	-.53**	-.47**	-.31*	-.30	-.35**	-.37*
Quality of parent-child relationship								
Attachment	-.48**	-.54**	-.55**	-.76**	-.40**	-.42*	-.25'	-.65**
Trust	-.45**	-.47*	-.59**	-.66**	-.28*	-.29	-.35*	-.56**
Appreciation	-.38**	-.72**	-.40**	-.60**	-.21	-.46*	-.11	-.36*
Justice	-.40**	-.64**	-.50**	-.52**	-.27*	-.51*	-.35**	-.54**

** = p < .01 * = p < .05 ' = p < .10

Table 2 Correlations between conduct disorders and measures of parent-child communication

	externalizing behavior				internalizing behavior			
	fathers		mothers		fathers		mothers	
	boys	girls	boys	girls	boys	girls	boys	girls
Questionnaires filled in by:								
parent	-.56**	-.74**	-.46**	-.74**	-.43**	-.59**	-.33*	-.73**
child	-.51**	-.54**	-.58**	-.45*	-.39**	-.31'	-.30*	-.41*
Negative communication								
Parent to child	.27'	.27	.39*	.61**	.21	.07	.15	.48*
Child to parent	.07	.11	.46**	.43*	.29*	-.11	.24'	.35'
Positive communication								
Parent to child	-.26'	-.42*	-.28'	-.12	-.11	-.51**	-.31*	-.22
Child to parent	-.22	-.27	-.22	-.29'	-.29'	-.06	-.27'	-.29'

** = p < .01 * = p < .05 ' = p < .10

The strongest correlations were found between measures of mother-child communication and externalizing behavior. The more negative the child's communication directed to the mother, and the more negative the communication from mother to child, the more externalizing behavior children showed. This held for boys and girls. We also found some evidence that negative interaction exchanges between mother and daughter were related to internalizing behavior of the daughter. The quality of the father-son communication hardly correlated with

a son's conduct disorders, neither when communication from father to son nor when communication from son to father was studied. We only found more internalizing behavior of a son as his communication directed to father was more negative. With regard to the father-daughter communication we found that girls showed more externalizing and internalizing behavior as their fathers communicated less positively with them.

DISCUSSION

In this study we examined relations between the quality of the parent-child relationship and child conduct disorders. With regard to parental support we found that the more parents were supportive (affective and responsive), the less their children showed conduct disorders. The question is whether a parent-child relationship that is not supportive causes child conduct disorders, or whether child conduct disorders lead to less affective and less responsive parental behavior. This relation cannot be interpreted causally; the design of this study does not allow us to answer that question. In reciprocity theory (Rothbaum & Weisz, 1994) it is assumed that parents influence their children as well as children influence their parents. It is emphasized that parent-child reciprocity develops over time. Child behavior becomes intermingled with parental behavior. Parent and child mutually influence each other in interactions and in linked streams of behavior. Thus a match between parents' and children's functioning develops. Parents and child develop generalized expectations about each other and about each other's behavior. These expectations have built up over an extended period of time and influence subsequent interactions (Rothbaum & Weisz, 1994).This means that it is difficult to unravel cause and effect in parent-child interaction.

In the intergenerational family-therapy approach, it is emphasized that a good parent-child relationship is characterized by mutual trust, appreciation and justice. We found that the more children were conduct disordered, the less the relationship with their parents was characterized by mutual trust, appreciation and justice (according to the children) and the less the relationship was characterized by feelings of attachment (assessed by the parents).

In the communication approach in family therapy, the emphasis is on concrete interactions between parents and child. Children were more conduct disordered in families in which parents and child communicated in a more negative way. The results of the observations were less impressive and less convincing than the results of the questionnaires. This finding is very striking, because the before mentioned meta-analytic study of Rothbaum and Weisz (1994), yielded significantly greater effects for observations than for questionnaires. The question is how the opposite results of our study can be explained. One explanation might be that observations can only indicate how parents and child interact at a given moment in time. It is not unlikely that family members tried to make a good and favorable impression in the presence of the observer, and tried to communicate in a friendly way. The questionnaires, on the contrary, were filled in by the family members without the observer being present, which may have given them a sense of anonymity and may have made them feeling free to answer the questions honestly. Moreover, the questionnaires assessed the way in which parents and child perceived their way of communicating and interacting not only at this given moment in time, but during the last few weeks or months.

From the results of the observations it appeared that relations between child conduct disorders were more strongly related to the child's communication with mother than with father, especially with respect to negative communication. The reason for the stronger effects

for mothers than for fathers may simply be the fact that mothers interacted more with their children than fathers did. In most families, mothers still are the primary caregivers. Children may be more influenced by and more likely to influence the parent who is most involved with them (Rothbaum & Weisz, 1994).

Summarizing all the results, it was very clear that there were relations between the quality of the parent-child relationship and child conduct disorders. These relations held for fathers as well as for mothers, and for boys as well as for girls. These findings are in contrast to the results of the meta-analysis conducted by Rothbaum and Weisz (1994). They found that relations between parental caregiving and a child's externalizing behavior were stronger for boys than for girls, and were stronger for mothers than for fathers. Although in our study the relations were somewhat stronger for mothers than for fathers, there were no large differences, and the relations for mothers and for fathers were in the same directions.

We also distinguished between externalizing problems and internalizing problems. The results showed that the quality of the parent-child relationship was related to externalizing problems as well as to internalizing problems. Although the relations seemed to be somewhat stronger for externalizing problems than for internalizing problems, again there were no large differences.

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IS IT POSSIBLE TO KNOW WHAT YOU'RE NEVER TOLD?: AGE-RELATED RESTRICTIONS IN THE AVAILABILITY OF INFORMATION AS AN EXPLANATION OF CHILDREN'S THINKING ABOUT ILLNESS AND HEALTH

Esther Hosli

Illness and health have become important topics in psychological and sociological research. With respect to children, the main areas of interest have been illness and emotional development, children's concepts of illness and health, and children's health behavior (e.g. Susman et al., 1992; Bibace & Walsh, 1979; Tinsley, 1992).

This chapter is confined to the area of children's concepts of illness and health. The position is taken that in research on the development of children's thinking about illness and health too little attention has been paid to the influence children's surroundings have on this development. It will be argued that there are age-related restrictions in the availability of information about illness and health to children and that these restrictions determine what children know about these phenomena to a considerable extent.

Two research traditions

Research on children's concepts of illness and health can roughly be divided into a 'cognitive' and an 'environmental' tradition. In the latter tradition the mother has often been thought to have a major influence on the child's concepts, and in this sense the child's 'surroundings' have been defined rather narrow. Researchers in this tradition found that children's concepts are becoming increasingly similar to adult concepts when children grow older. This applies to group data but, contrary to what was expected, not to individual mother-child dyads (e.g. Campbell, 1975). The 'cognitive' research tradition has been dominated by a 'Piagetian' perspective (e.g. Bibace & Walsh, 1979, 1994; Perrin & Gerrity, 1981; Burbach & Peterson, 1986, Koopman, 1993). Because research in this tradition has been based on an interpretation of Piaget not everyone will agree with, Piagetian is put between quotes when this interpretation is meant. In his theory of cognitive development Piaget defined structures that are supposed to underlie four general stages of cognitive development. In applying Piaget's theory on the development of children's concepts of illness and health, researchers have conceptualized it as self-generating, as arising 'from within'. Typically, little attention has been paid to the role that the child's (social) environment plays in this development.

A standard study within the cognitive research tradition is the study by Bibace and Walsh (1979) on children's concepts of illness. The aim of these researchers was to formulate a series of categories that reflected children's general cognitive developmental level as well as their specific concepts about illness characteristic for each level. 252 Healthy children of different ages were interviewed. Questions were asked about various illnesses, for instance 'were you ever sick? why did you get sick? how did you get sick? how did you get better?' and 'what is a cold? how do people get colds? where do colds come from? what makes colds go away?'. The answers were categorized using general reasoning characteristics characterizing the different developmental stages suggested by Piagetian theory. Bibace and Walsh were able to formulate two substages in the development of children's concepts about illness within each of the three major Piagetian stages (Table 1). Although Bibace and Walsh claim to have categorized the answers according to reasoning characteristics, it is evident from

the labels and descriptions of the stages that the successive stages contain more elements of the 'medical model', which is the dominant model for describing and explaining illness in Western culture. In the 'Piagetian' tradition, this development of the *content* of children's concepts of illness cannot be explained by the cognitive development of the child alone without confusing form and content of thinking.

TABLE 1 (sub)stages in children's conceptions of illness (Bibace and Walsh, 1979, 1994)

Magical level/ pre-operational: Explanations based on association

1. Phenomenism. The child describes the illness in terms of any phenomenon s/he has experienced as associated with the illness, without clear differentiation of cause and effect. 'A cold is from .. it is when your nose runs'.
2. Contagion. The child describes the illness in terms of body experiences or symptoms. S/he associates a specific external cause with the illness, but cannot explain how the cause leads to the effect. 'It's from being out in the wintertime', 'from other kids .. you just catch it'.

Concrete level/ concrete operations: Explanations based on sequence

3. Contamination. The child describes illness in terms of experienced symptoms and explains its cause as originating in external acts or situations. The child explains how a sequence of causal events leads to the illness by contacting or involving the body as a whole. 'Cause the cold air, it gets to your skin'.
4. Internalization. The child describes the illness and explains how a sequence of mechanical actions leads to changes in specific internal body parts.

Abstract level/ formal operations: Explanations based on interaction

5. Physiological. The older child or adult describes an entire internal disease process involving the interaction of multiple causes and effects on multiple body parts.
6. Psychophysiological. The older child or adult explains how multiple causes and effects interact by describing transformations at the cellular level.

Age-related restrictions in information

Neither the 'environmental' nor the 'cognitive' research tradition thus can explain the succession of children's concepts of illness and health found in research. Environmental influences, other than mother-child transmission alone, need to be incorporated in order to generate a plausible explanation for this succession. One explanation might be that, in spite of the fact that culture is usually seen as a 'bath', there are age-related restrictions in the availability of information about illness and health to children. If such restrictions exist, the explanations which children are able to generate might well be constrained by them. To explore this possibility, television programmes for children of various ages, being one major source of information about illness and health, have been analyzed.

METHOD

It was decided to analyze a limited amount of television programmes. The focus was on three themes: Illness, health and bodily functioning. Programmes chosen to be videotaped were

Sesame Street (3-6 year olds) and four different schooltelevision programmes: 'Nijntje' (4 year olds), 'Koekeloere' (4-5 year olds), 'Warreltaal' (4-5 year olds) and 'Huisje, Boompje, Beestje (H,B,B)' (6-7 year olds). The programmes chosen are among the programmes most looked at by young children, and they were expected to contain information about the themes to be analyzed. Schooltelevision episodes to be videotaped were chosen in advance on the basis of themes which were announced in a radio and television guide. The period covered was from september 1993 to june 1994. Because of the fact that themes were not announced for Sesame Street, each episode of this programme was videotaped during half a year (june to december 1993) and appropriate scenes were selected afterwards. Sesame Street episodes often center around one theme, but this is not always the case.

The frequency of information about illness, health and bodily functions given in these television programmes was not very high (Table 2). However, it has to be remarked that Sesame Street episodes are regularly repeated. Because repetitions were not counted, the net information given was more than the 36 scenes mentioned. The 'Huisje, Boompje, Beestje' scenes analyzed had 'bodily functioning' as a main theme, but also contained elements of illness and health. Written transcripts were made from the episodes (for Sesame Street from the selected scenes). These were categorized according to their topic. For each transcript it was determined which information was given, which connections were made and what sort of information was not included in the scene. Then the different scenes of a single programme were compared: Was the nature of the information given and not given consistent over the scenes and the different themes? The final step consisted of a comparison between the programmes. An example will be given below to illuminate this procedure.

TABLE 2. frequency of information in television programmes analyzed

programme	number of scenes broadcast / analyzed	topics (frequency)
Sesame Street	± 1250 / 36	illness (16) health (15) bodily functioning (5)
Nijntje	28 / 1	illness (1)
Koekeloere	24 / 1	bodily functioning (1)
Warreltaal	13 / 4	illness (3) bodily functioning (1)
H,B,B	24 / 3	bodily functioning (3)

One of the sixteen recorded Sesame Street scenes covering the topic 'illness' shows us Mister Aart sitting at a table and playing cards. The young adult Lot enters, bringing Aart his shoppings. She wears a scarf and sneezes. Aart asks her why she is wearing a scarf and Lot answers that it is because of her cold. Meanwhile she sneezes Aart right into his face (this happens some more times in the scene). Aart wants to know how Lot caught her cold and Lot tells him that she caught it from Paula, who sneezed as much as a hundred times when they met that morning and so infected her. Aart asks whom Paula had caught her cold from. Lot explains that Sien gave it to Paula, and when Aart continues his questioning she tells that Sien caught

it from Lex, Lex from Frank, Frank from Pino etcetera. At the end of the scene Aart gives Lot the advice to turn in and we see Lot leave. When Lot is gone, Aart looks very self-confident because he seems to be the only person in Sesame street who is not ill and thus not weak. Then, suddenly, he sneezes loudly and looks puzzled into the camera.

The information in this scene is given verbally as well as non-verbally. It can be described as follows:

1) A label for the situation is given, namely 'a cold'.
2) Some symptoms are mentioned: Sneezing, coughing, snivelling and an itchy nose.
3) The causing factor of the cold is indicated verbally as 'infected by someone else' (Dutch: 'aangestoken') and non-verbally as 'sneezing someone in the face'. Should we want to categorize this cause in terms of Bibace and Walshes model, this explanation would fall under the pre-operational stage, substage contagion, because it is based on association.
4) Who infects who is obvious and retrievable in this scene.
5) The time needed for infection is very short, apparently some quarter of an hour.
6) Illness-related behavior includes wearing a scarf and turning in but at the same time a cold does not prevent one completely from performing ones daily activities.

It is striking that the connections between these elements remain implicit most of the time. It remains implicit for instance that sneezing someone in the face infects this last person. This is not mentioned verbally and has to be inferred by the watching child. Also the connections made are unmediated ones. Regarding the cause of the disease for instance an intermediary, a pathogenic organism is not mentioned.

The restrictions in the information given are obvious. Most important is the fact that only the term 'to infect' is mentioned but that, as already mentioned, the mechanism by which this happens is not elaborated at all. Falling ill is not related to an internal, physiological mechanism. Also, no reasons for illness related behavior (wearing a scarf, turning in) are mentioned.

Finally, part of the information given is false. It is suggested that the incubation time for a cold is about a quarter of an hour. And it is suggested that it is obvious and retrievable who infected who.

Below I will briefly describe the results of the text-analyses per programme and main theme.

SESAME STREET

TABLE 3. Sesame Street: Main topics and subtopics in analyzed scenes

ILLNESS (16)	HEALTH (15)	BODILY FUNCTIONING (5)
illness (5)	dental hygiene (8)	function (2)
doctor (7)	exercise (3)	body part (3)
injury (4)	food (3)	
	general (1)	

Illness

Illness as well as injury and visits to the doctor are depicted as social-emotional events, to which belong particular scripts. Topics in the scenes are all about things familiar to children,

e.g. catching a cold and sticking oneself with a needle. The causes of illness are explained in terms of association, if they are explained at all, and pathogenic organisms are not mentioned. In the 'going to the doctor' scenes the doctor, white-coated and wearing a stethoscope, performs a series of seemingly unrelated, stereotypical actions on the patient (e.g. listening to the patient with the stethoscope and looking in the patient's throat). Two times mention is made of the fact that children also have an 'inside' (heart) but in the majority of scenes explanations remain on the 'outside' of the child's body.

Health

These scenes are strongly directed at teaching children 'healthy' behaviors like eating vegetables and brushing your teeth. No rationales other than (un)desirable consequences are mentioned, and connections between different sorts of healthy behavior are not made. Two scenes mention the fact that children have an 'inside' by using the word 'muscles'.

Bodily functioning

Two scenes focus on the function of breathing, which is defined in concrete and 'perceptual' terms: 'In and out, in and out'. You have to breath to stay alive. The lungs are mentioned in one scene. Essential aspects of breathing like the exchange that takes place in the lungs and the fact that the lungs are connected to the other parts of the body are not mentioned. In the episodes focussing on a body part (nose, skin and knees) explanations also are very concrete and in functional terms.

NIJNTJE

The episode analyzed is about what children experience in hospital. Events are enumerated, without explanation (sore throat, tonsils have to be blanched, lying in a big white bed, getting an injection etc.). The part of the story the child does not experience consciously, this is the surgery, is completely left out. Anaesthesia is conceptualized as 'falling asleep'.

KOEKELOERE

The episode analyzed concerns the idea of 'growing'. Some features of growing are mentioned, like 'growing is getting bigger and bigger'. Some questions about 'puzzling' things are asked, but not answered, e.g. 'why do baby creatures grow and adult ones not?'. Things that grow are distinguished from things that do not grow. Growing is not explained in bodily terms and neither is it explained what one needs to grow.

WARRELTAAL

Illness

All three episodes concern events which children are likely to meet, like a broken leg, tube in ear. Although it is stated explicitly that one has an 'internal' side, emphasis is on behavior and emotions belonging to illness, and on things happening when one is ill. Notably, the

episodes conceptualize anaesthesia as getting nice dreams. Things the child does not experience consciously, like the surgery, are not shown and little explained.

Bodily functioning

The episode analyzed concerns the 'body scheme'. Parts on the outside of the body are mentioned and functions of these body parts are given. Functions that are important in the everyday life of the child, like 'a nose is for smelling', are emphasized. The only internal body part mentioned is the heart which does 'boumboum'. No further explanation is given.

HUISJE, BOOMPJE, BEESTJE

The episodes analyzed cover the topics 'digestive system', 'heart and blood circulation' and 'breathing'. They have about the same structure: Starting point is the function itself, some connections are made with essential other functions and with children's everyday reality. Part of the internal architecture is shown, the function of the system is explained up to some level and 'excursions' are made to related things that children know from everyday life. In the episode covering the digestive system for instance 'excursions' are made to choking, burping, vomiting and being ill and having diarrhoea, listening to the intestines and the sound of the stomach when it is empty. Although it is obviously the goal of these episodes to teach children things about their internal functioning, the explanations given are as concrete as possible and much attention is given to connections to children's everyday experience.

SUMMARY OF RESULTS

It seems safe to conclude that the programmes analyzed differ from each other and that a certain sequence is present in the information which is given. The programmes for the younger children (in particular Sesame Street and Nijntje) are 'script-like' and focus on the outside of the body, on phenomena which children can perceive. As the target group grows older, programmes (in particular Huisje, Boompje, Beestje) become less script-like and focus more on biological knowledge, on the 'inside' of the body and phenomena not directly perceivable. However, a connection with the child's everyday world remains. The programmes each have a relatively consistent structure. The level upon which explanations and information are given are fairly consistent over different episodes/ scenes and topics of the same programme. Where the level of explanation varies somewhat, an obvious ceiling is present. The number of relations made between different phenomena increases with the age of the target group. In Sesame Street for instance breathing is explained in terms of 'in and out' and the relations made are with 'staying alive' and with 'burping' (in one scene). In Huisje, Boompje, Beestje breathing is explained in terms of an exchange process and relations with blood circulation, shortness of breath, inflatable things, trees and drowning are mentioned.

When we compare these findings with results from studies on children's concepts of illness and health, some interesting parallels appear. All the television programmes analyzed focus on diseases that children are likely to contract. This parallels the finding that children's knowledge about diseases they are likely to contract is larger than their knowledge about other diseases (Koopman, 1993; Perrin & Gerrity, 1981). From the results of Bibace and Walsh (1979) and Koopman (1993) we can conclude that most 4 and 5-year olds are in the

'contagion' stage. This means that they explain illness in terms like 'catching it from someone else' or 'from the wind', and cannot give any further explanation. This parallels the information and restrictions in information in the television programmes. In the case of health children up to about 9 year can only enumerate 'healthy behaviors' like eating vegetables and fruit, and brushing your teeth well, but they cannot give any rationales for these behaviors apart from 'it's just good for you' or 'because of the vitamins' (authors interviews). This is what also happens in the television programmes. Even in 'Huisje, Boompje, Beestje' healthy behaviors are only enumerated and not explained.

DISCUSSION

In the introduction it has already been mentioned that cognitive development alone is not a sufficient explanation for the sequence in the content of children's ideas about illness and health found in research. Some sort of 'environmental' explanation is also needed. The question with which this study was started was: 'Can age-related restrictions in the availability of information about illness and health explain the sequence in the content of children's ideas about these topics?'.

We can conclude from the results that the answer to this question might well be affirmative. There *are* restrictions in information given to children in these television programmes. And these restrictions parallel research findings of children's thinking about illness and health. It seems reasonable to conclude that restrictions in information available to them constrain children's thinking. However, an alternative explanation for these results is that the television programmes are tuned to what children 'are ready for' at different ages. According to this view, limits in children's cognitive development constrain information in television programmes and not the other way round. The question becomes one of which came first, the hen or the egg?

In my interviews with parents and programme directors the idea that children 'are ready for' certain things at certain ages was stated repeatedly. But when asked what this 'being ready for' means in concrete terms, both parents and programme directors could not give a satisfactory answer. They got stuck in statements like 'because young children are egocentric, their own world has to be emphasized' (programme director) or 'when he is older I will tell him (this and that) but now he is just not ready for it' (parent). When children's 'readiness' constrains information in television programmes, we would expect it to be clear *which* things children are ready for *when*. However, in the interviews this expectation was not confirmed. This weakens the interpretation of the results of this study in terms of 'what came first was readiness'. It looks like if considerations about what children 'are ready for' are based more heavily on common sense ideas of adults than on what children really 'are ready for'. And this strengthens the interpretation that age-related restrictions in information which is available to children are at least to a considerable extent responsible for constraints in the content of children's thinking about illness and health.

Finally a few remarks have to be made. The first is that saying that restrictions in information came first is not the same as saying that children can understand everything an average adult can. Be it alone because knowledge is often cumulative and needs time to build up. Furthermore, I acknowledge that children play an active role in knowledge acquisition. But in research on the development of children's thinking about illness and health too little attention has been paid to the influence children's surroundings have on this development.

This study does not give us a conclusive explanation of the development of children's concepts about illness and health. It concretizes an 'environmental' influence that may well play a considerable role in constraining children's thinking about these topics.

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THE REARING OF THE UNWED MOTHER'S CHILD IN GREECE
(The case of foster care)

Anastasia-Valentine Rigas and John Markantonis

In Greece, in the eighties, despite social development, equality between the sexes remains in many cases theoretical, taking into account that the term unwed mother still evokes a moral and social bias, a social problem. The two parent family is still in Greece the most dominant family form. For the *rural Greek society*, illegitimacy presents a family and a social stigma, because the patriarchal and conservative surroundings reject to rear an illegitimate child. An unwed mother living in a village, who decides to rear her child by herself is in the majority of the cases regarded immediately as problem of the family breakdown phenomenon and disorganization. This is a reason why, a young Greek girl or woman prefers to avoid an undesirable baby through abortion, rather than to give birth to a child which will create enormous problems for her later on. Accordingly, one derives from various statistical studies and samples that, since unwanted pregnancies and abortions run so high, very few children conceived out of wedlock are brought into the world. (Zavitsanos et al., 1980, Rigas, 1992). However, for the past ten years, the birth-rate of children born out of wedlock in Greece runs around 2% of the overall number of babies born alive.

TABLE I

Total Greek Children's birth

	Total alive babies'birth	Ligitimate Births	Illegitimate births	%
1984	125.724	123.628	2.096	1,6
1985	116.481	114.384	2.097	1,8
1986	112.810	110.754	1.056	1,8
1987	106.392	104.169	2.223	2,0
1988	107.505	105.286	2.219	2,0

Source: Direction of the Natural Populations' Movement National Greek Statistical Service (ESYE 1990)

This conscious and responsible choice for an illegitimate birth accounts unfortunately only for a small percentage of the overall number of reasons which explain illegitimate motherhood in Greece.

For socially lower Greek environments, illegitimacy is the price that children born out of wedlock often pay for their mother's transgression of the unwritten laws governing sexuality.

So, on the one hand, a Greek family is presented in several studies as *child-centered*, with a great part of its activities aiming at securing the means for the child's needs: love and

protection that is provided with the means necessary for the improvement of the quality of the every day life-style of the child, (good quality of foods, clothes, educational quality etc). (Markantonis 1991).

On the other hand, children out of wedlock grow up in their majority, but not totally, in foster families care, because the unwed mothers families often face multiple burdens. Many of these families are likely to be poor and from low-status minorities, most of them receive little or no support what so ever from the Government or from the fathers. (Kamerman - Kahn, 1988).

However, some of these children whose mothers cannot for various reasons fulfill their parental obligations, face in essence three possibilities for being assimilated:

a) Adoption, b) placement in an Institution and c) placement in foster care. The child can be placed in a foster care family after agreement on a personal level between the unwed mother and the Institution. In Greece, foster care is considered to be the traditional and most accepted solution for the protection, the development and the welfare of an abandoned child.

PREVIOUS RESEARCH AND THEORETICAL PERSPECTIVES

The number of studies within the field is in itself impressive. In his interesting book on *'one-parent families'* Benjamin Schlesinger (1985) presents an annotated bibliography from 1960 to 1985. Geadah (1986) in the book of the proceedings *"La mere isolee et l'enfant"* presents a great number of contributions concerning the useful role of the foster family on the abandoned illegitimate's child development and socialization.

The above mentioned studies show that differences exist between the unwed mother family and the foster family as far as the process of socialization of the child is concerned. The results show a more negative pattern in the one-parent families: their socialization is lower than that of two-parent families and the foster families. The unwed mothers have a relatively lower perception of themselves, and less control of their situation, because of the negative social behavior and the stigmatization, so, they bring up their children, in a more rigid way than the other types of families.

The living conditions in combination with other factors seem to affect the child's development as well.

Important factors interacting with child rearing have been found to be the *socioeconomic level, the family stability* and *the ecological settings* (space factors, characteristics of the culture within which the child lives). (Shinn 1978, Guidubaldi 1986, Lassbo 1988, Rigas+Giziaki 1993).

According to these perspectives we have tried to examine in the present contribution the process and effects of the rearing of the illegitimate child living in a foster family. In other words: *Are the socioeconomic level the living conditions, and the family status of the foster care important factors interacting with the child's rearing*?

METHOD

The research was undertaken in Athens from 1988 to 1992; it is part of a larger qualitative research programme concerning *the role of the family support on the formation - of the illegitimate child's social identity*. We have used the data from the Archives of P.I.K.P.A.

(National Foundation for the Welfare of Mother and Child). We have set out to approach 91 cases of abandoned children and adolescents aged between eleven to eighteen, of both sexes, through their CV's. Sixty per cent (60%) of them have been placed by the Foundation, P.I.K.P.A., in foster care.

Information was collected also in the homes of foster families at one or more sessions by the research members.

We have compiled a biographical record with closed and open questions for illegitimate children from the P.I.K.P.A. files. This record contains 235 variables including information about the socio-demographic characteristics, socio-economic status and employment of the natural parents of the foster family, the psychosocial status, health conditions and education of the child, the status of the Foundation and the welfare of the child, foster family relations with the unwed mother, the child and the Foundation. Finally many different types of data were collected to create a concise psycho-social and ecologically valid picture of the illegitimate adolescent and the environments in which he or she is developing. The present study uses data and information, concerning the sociodemographic and economic level of the unwed mother and the foster family living conditions. These variations should be related to the child's development.

We used for the data analysis the SPAD N multi-dimensional statistical package.

RESULTS

Relationships between the socioeconomic variables of the different family status conditions and the children's development.

a) *The natural mother's background*: Most of the natural mothers have a low educational background. In general they have not completed the High-School Education level (see Table 2). Their families appear as offering neither emotional nor financial support, so changing jobs for them is quite often. The majority of these mothers have been out of work for along period (Table 3). It is not rare that they have moved away after their baby's birth or they may live at their current address since the very first months of their pregnancy. Even more, it is remarkable to note that very often these natural mothers do not meet their children whom they have abandoned in an institution or in a foster family. These mothers used to form short and unsteady relationships with male partners and some of them have had repeated pregnancies. Their family structure at home is primarily parent-centric and involves a wide range of cases such as: divorce, separation or widow-wood. Furthermore, some serious psychosomatics or mental illness and handicaps of one of the parents are reported. This is one of the reasons why the unwed mothers in our study, generally live alone, without receiving any emotional of financial back-up from their babies fathers. We also point out that for the majority of these women the *social stigmatization* the unexisted *financial support* combined with the ungiven *social welfare* (Table 4), constitute the important reasons that have forced them to give away their children for adoption or fostering (Table 5).

The tables herewith present the 'numbers' in the single mothers' life (i.e. family)/educational/financial issues etc.

Table 2

UNWED MOTHERS

Educational level of the unwed mothers

Category	Cases	%
Illiterate	6	7
Primary	42	46
High School/Lyceum	7	8
Not mentioned	37	39
Total	91	100

Table 3

Occupation of the Mothers

Category	Cases	%
Unemployed	20	23
Servants or private employees	18	19
Workers	13	14
Prostitute and other occupations	22	23
Not mentioned	20	23
Total	91	100

Table 4

Social security aid for the mother

Category	Cases	%
Public social security	9	10
Without security	12	14
Non mentioned	71	77
Total	91	100

Table 5	
Reason for their children being institutionalised	
Category	Cases
Mother having financial problems	23
Mother deserted the child in the maternity hospital or negative attitude of relatives	35
Mother being a psychopath, severally ill, died delivering the child or child being bodily or mentally ill	13
Parents who face problems with the law mother abused the child	11
Non mentioned	9
Total	91

b) *The Foster family's background*: The composition of the foster family is now limited to the pair of spouses or one of the spouses and their charge.
In more than half of the foster families both spouses are present in 1/4 of them, the father is absent or deceased while in only 2% of the families the mother is absent because of death. Around 10% of the families include grandparents. It is remarkable that 40% of families have their own children, specifically, in most cases, there is an almost equal number/percentage of girls and boys (26% boys, 27% girls).

FOSTER FAMILY'S SOCIOECONOMIC CHARACTERISTICS

Table 6				
Educational level of the foster mother			foster father	
Category	Cases	%	Cases	%
Primary	20	23	12	14
High School/Lyceum	12	14	22	23
Undergraduate studies	6	7	10	11
Total	38	44	44	48

Table 7				
Occupation of the foster parents				
of the mother			of the father	
Category	Cases	%	Cases	%
Housewife	38	42	-	-
Old age pensioner	12	13	12	13
Public employees	4	5	32	33
Total	54	60	44	46

Table 8		
Social Security Aid for the foster parents		
Category	Cases	%
Public Social or private security	54	60

The profession (Table 6) and the mean monthly income of foster families corroborate the aforementioned, surmise, that fostering is motivated mostly by moral/emotional reasons rather than by economic ones. It is established that a small number of foster families belong to a low income bracket, which runs, according to their own statement, from 165 $ to 242 $ or 242 $ to 413 $ monthly. This ascertained fact could be considered as correborative to the view that people choose to become foster parents out of feeling of love and solidarity or out of their need for companion especially it is sentiment of worry about their future than due to any economic motives.

The striking majority of foster parents come from middle income social strata (Table 7) where simple hardworking family men, pensioners having worked until the recent years in civil services and public or private employees and a small number of farmers make up the main body of the sample of our research plus the social security aid (see Table 8). The increased percentage of incomplete data on the profession of foster parents, and especially on that of fathers (62%), surely does not reflect well off families, since high income in a factor that facilitates fostering. Incomplete data probably reflect an equally low level of earnings and a poor social status for these families.

THE DEVELOPMENT OF THE CHILDREN: TYPES OF THE FAMILIES AND DURATION OF THE CHILDREN'S REARING

Based on the file data, we can elicit the following information on the first placement of the children and their domicile during the time of the research (Table 9).

THE DEVELOPMENT STATUS OF THE CHILDREN: TYPES OF THE FAMILIES AND DURATION OF THE CHILDREN'S REARING

Table 9

Rearing of the child/1st placement

Category	Cases	%
Natural mother	9	10
Foster families/friends	68	73
Institutions	14	17
Total	91	100

The children in the sample move from one foster family to another five times at most. A study of the mobility proves that the striking majority of adolescents remain where they were first placed, especially in the case of related foster families (Table 10).

Table 10

Type of foster family	Rearing of the child during their replacement				
	A	B	C	D	E
Related	10%	1%	1%	1%	-
Foster	54%	31%	18%	18%	-
Total	64%	32%	19%	8%	-

In spite of our reasonable reservations on the limitations of the sample, which are however counterbalanced by the careful qualitative processing of the cases, this classification, in connection with the examination of other variables, give us the space to draw the following results:

a. Children ex principio like their first foster family, they become attached to it emotionally and stay there.
b. Related foster families as a rule ensure a higher degree of protection for their charges, while mobility from them is a rare exception running at 10%. In fact it has not been proved to be the fault of the related foster parents.
c. The constant, repeated mobility in the case of foster families is a sign of the need for an increased control of the living conditions of the adolescent, that is if, as the appraisal of the data shows, the main reason for the replacement of the children is his/her mal adjustment to the family.

d. Obviously there are numerous reasons for the repeated change of domicile. One of the chief ones seems to be the age of the charge: the younger the child is during the first placement, the more difficult is its replacement later, given the fact that the percentage of cases with good adjustment runs high in such cases.
e. Furthermore, in connection with the children's life style, a quantitative approach indicates that there is a small but significant discrepancy between where the child/adolescent has been placed and where it is actually living. Consequently, it is not self-evident that the child always remains where it has been placed. This is due to the fact that adolescents express a slight but important preference for foster families as place of domicile, even if they have been placed in other forms of care. A comparison between the data (a classification of adolescents according to their place of domicile at the time of the research) leads to their results that there is a small but quantifiable increase in the number of adolescents who, in spite of their placement elsewhere, prefer in the end to live with their natural mother of with a non-related foster family, a percentage that runs round 5 to 3 points respectively. This corroborates the urgent need for support for these two sources/units of protection: the biological and foster family.

The children's upbringing and rearing: The degree of interest in the upbringing and education of their charges is illustrated in percentages in Table 11. This data, shown in cardinal numbers and the equivalent percentages, stems from the pertinent statistics (data sheet 100) on "assuming of expenses for the education of the adolescent", and permits us to educe noteworthy conclusions.

Table 11

Upbringing and education interest

Cases	%	
PIKPA	41	45
Natural mother	2	2
Foster or related foster family	16	17
Friends, elsewhere	12	13

If we unit the main welfare service PIKPA representing the foster family, the major unit expressing a relatively high interest is assuming the expenses for the education of its charges. Judging from table 12 these two forms of foster care control, either together or separately, the education of their charges to a satisfactory degree.

This effective cooperation, if it is verified in the course of the research, suggests a need for further financial and moral support of the relationship between PIKPA and foster families in the field of education.

No child abuse are mentioned from foster families. On the contrary, there are four cases (4,5% of the sample) of major abuse mentioned by natural families (natural mother).

Table 12		
Present rearing of the child		
Cases	%	
Natural mother	14	15
Foster family	66	73
Friends and elsewhere	11	12
Total	91	100

CONCLUSION

As a conclusion, one would say that adolescents living with foster families are under more favorable conditions than those living with related foster families.

Previous studies have demonstrated that the socio-economic status of the family the different life style between the family types (two parent families, one parent family), influence child development.

The development status of the children of our study in the two groups of family type/family stability (two parents foster family - unwed mother) and of the two groups socioeconomic level (grouped by parent's level of education, occupation, social security aid) were compared. The result of this comparison in the analysis indicated that the illegitimate children living in foster families were represented the following aspects of socialization:

a) *Social ability*, *personality* and *adaption* to various aspects of school (in writing, reading, verbal and non verbal communication).

b) *Cognitive ability* and *concentration*

All the above mentioned aspects, were indicated that in higher ratings of illegitimate children lived in a good level educated foster parents. At the opposite the unwed mothers represented a poor integration, between expectations and practice, in their parental role.

The socioeconomic level also seem to be more powerful in unwed mother family, because that woman for the greek society is generally more socially closed and the setting more uniform (Lassbo, 1990).

Also, variables as personal social networks, the non organized public day-care system, the low social security aid and the low economic support systems, formed a negative perception of their self as parents.

We have also reduce the general importance of two parents presence *in the household* of the foster family, as a very useful independent variable to explain child rearing.

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CHILD CULTURE AND THE FAMILY

K.A. Torrance & M. du Bois-Reymond

Since World War II, a range of social developments have changed childhood in Western industrialized societies fundamentally. In this paper, we examine the impact of this modernization process in two fields of childhood. Our starting point is that some modes of childhood are modern and others are more traditional (these terms are used in a relative sense), as children are not a homogeneous group, and social developments will affect children's lives in different ways.

The first domain of childhood is child culture: the range and organization of children's out-of-school activities, the way they interact with friends and make use of social and environmental resources (Büchner, in press). The second domain of childhood is part of the family context: how parents and children communicate about the child's attitudes and behavior.

We will describe the general changes in these two domains in Western industrialized countries and report data derived from a qualitative longitudinal study conducted in three European regions (in Germany and the Netherlands). This study aims to fill in the gaps in empirical research on modernization in childhood, as there is a lack of projects in which children themselves are the informants and which provide in-depth details from case studies. Furthermore, the age-group on which our study focuses (12-13 years old) has received only little empirical attention.

In section 2 we examine the influence of social developments on the two domains of childhood. In section 3 we describe our project and formulate our research questions. In section 4, we present two models, one of child culture and the other of parent-child communication. In the concluding section (5) we examine our data, and compare our findings with the East and West German studies. Finally, concentrating on the Dutch sample, we asses the relationship between the two domains of childhood, and determine the influence of social class.

SOCIAL DEVELOPMENTS IN WESTERN SOCIETIES

Changes in leisure activities

Firstly, children's leisure time has increased in the last decades, due to the lengthening and broadening of compulsory education and the decreasing necessity of children helping their parents in and round the house (Fine, Mortimer & Roberts, 1990; Hendry, Shucksmith, Love & Glendinning, 1993). Due to individualization, children nowadays learn to pursue their own, personal (leisure) goals and participate in leisure activities that take place independently from home and the family. At the same time, participation in traditional (church-bound) youth organizations has declined, children participate in commercial clubs in which they have more freedom (Te Poel, 1990; Coleman & Hendry, 1990).

Secondly, from the fifties onwards, a commercial activity market, especially aimed at young people developed. Many different -and historically new- sports and other activities (music lessons, creative clubs) can now be practiced. Because many activities are now organized by institutions, they must be planned beforehand. This is a major change compared to children of former generations, who spent their time playing out on the streets and could decide spontaneously what to do.

Children nowadays do not only join clubs for fun, but also to build up a 'leisure career': projects of which the goal lies in the future. Modern western societies are 'achievement societies' (Mc Clelland, 1961), conveying the message that, to succeed in society, it is not enough to excel in the educational field, but that leisure time should also be spent in a 'profitable' way (Coleman & Hendry, 1990).

Changes in relationships with friends

Children spend more time with peers and friends than they used to (Feldman & Eliot, 1990; Jackson & Rodriguez-Tomé, 1993). The way in which children form friendships has changed accordingly. Children of former generations did not make friends through decisive personal preference, but were friends because they lived in the same neighborhood (Du Bois-Reymond & Jonker, 1988). Children of different ages intermingled, as younger siblings tagged along with older children. These neighborhood groups have almost ceased to exist, since today's children no longer exclusively choose their friends on the ground of where they live. On comparing two representative studies among young people, Van der Linden (1990) found that, even over the last decade, equality between friends - sharing the same interests and opinions, and being 'well matched' - has become of increased importance to children. These friendships are part of independent social networks: (small groups of) friends that children have met in different geographical or social settings (school, leisure clubs). As children are more mobile than they used to be, and school and leisure clubs are further away from the child's home, children meet and befriend peers from other neighborhoods or towns. Maintaining these friendships has been made possible by the rise in transport facilities and by the telephone (Diskowski, Preissing, & Prott, 1990). These changes increase the amount of organization necessary, as friends living further away can not be visited spontaneously. The possibilities and schedules of public transport, or the times and distances parents are willing to travel must be taken into account. Also, children wishing to see their friends regularly would be ill-advised to leave this to chance, as their friends probably have busy schedules as well.

Changes in use of space and material resources

There are two changes in the way children use their spatial environment. Firstly, they spend more time either indoors or in sheltered and controlled zones. In the decades after the Second World War, outdoor space changed to an area almost exclusively meant for traffic and trade (Du Bois-Reymond & Jonker, 1988). As a result, there is less room for children to play outside spontaneously, yet more space has been reserved for specially designed playing-grounds. Indoors, families nowadays have more living accommodation and less children, so most children have rooms of their own. As we have seen, modern children also spend more time participating in indoor-activities at the football club or the library as opposed to former generations of children, who spent most of their time out on the streets. All these developments have lead to children increasingly being in space that is organized, sheltered and supervised by adults. German researchers call this transfer from uncontrolled outside space to controlled (indoor) space 'verhauslichung' (Nissen, 1992; Behnken, Du Bois-Reymond & Zinnecker, 1988), a term we have translated to 'domestification'.

Secondly, individuals have gradually freed themselves from spatial restrictions. The connection between place of work and residence has been loosened, and clubs, schools and other facilities are no longer at the corner of the street. The distances children travel have increased. A pattern of 'island-hopping' has become apparent (the German 'verinselung' (Zeiher & Zeiher, 1994)). Children's activities take place at separate locations, scattered as

islands over a larger region. For instance, a child goes to one quarter for flute lessons, to another to go to school and a different town to see a friend. The area in between locations can be compared to water: it is unknown territory, as the distances are covered by public or parental transport.

Changes in the way children use material resources are due to the increase of prosperity. Children nowadays have their own material goods and money. Pocket money is no longer a favour that a parent grants a child, but is seen as the child's right. It does not have to be laid by for the future but may be spent to satisfy spontaneous desires. Pocket money teaches the children to handle money as competent consumers, and parents begin training their children to be critical consumers at an early age. The increase in prosperity has made it possible for children to start developing an own life style at an early age. The commercial market has discovered children as a group of autonomous consumers, worth aiming advertisements and goods at. The media and the child's peers and friends also 'tell' children what to buy (Fine, Mortimer & Roberts, 1990). Modern, individualized children are convinced of the necessity of developing an own style in appearance, and they have strong opinions on issues such as clothing, furnishing and music.

Changed communication between parents and children

As a consequence of the decreasing number of children per family, and the increase in prosperity it has become possible for parents to pay more attention to their individual children's needs and wants. As a result, the relationship between parents and children has become more intimate. De Swaan (1982) postulates that human relationships have changed over the last decades from a basis pattern of demand and subordination to a pattern of recurrent negotiation between partners. There is a shift in the power balance between the genders and the generations: Women and children have gained power in personal and social matters. In accordance with De Swaan, we can also describe the changing relationship between parents and children as a transformation from strict parental control to a pattern of negotiation between the generations (Du Bois-Reymond & Torrance, 1994). In the fifties and sixties, parents were in charge, there were fixed rules, and punishment followed the child's misbehaviour. Discussion about the rules was out of the question. In contrast, the modern pattern is characterized by negotiation between the generations and a greater autonomy of the child. Arrangements and compromises about attitude and behaviour are reached in discussion between parents and child. There is less emphasis on formal manners, formal ways of addressing one's parents ('U' and 'Sie') have become out of date.

CASE SELECTION, METHODS AND RESEARCH QUESTIONS

We looked for between 30 and 40 parent-child couples in each of three regions. The first region was around the East German town of Halle, the second was around the West German towns of Marburg and Frankfurt, and the third around the Dutch town of Rotterdam. We selected the cases via the method of 'theoretical sampling' (Glaser & Strauss, 1967). This implies that we looked for interesting cases on the basis of theoretical insight and hypotheses and tried to make sure that a great variety of different family structures and child culture were represented. In practice, we selected the first fifteen to twenty families by means of the 'snowball' method. We started out with a few families in each region. They were asked for the names of friends or relatives who may also be willing to participate in the study. In turn,

we approached these families, made sure they were would participate and asked them for friends or neighbours names, and so forth. We looked for additional cases via students and schools, to make sure that there were as many boys as girls in each sample and that the families were spread equally over three social classes, measured by the mother's and father's educational and employment level (For an elaborated description of the sample see Du Bois-Reymond, Büchner, Krüger, Ecarius & Fuhs, 1994). Applying this method of case selection does not make this study representative. This is not the object of the project. Rather, we wish to gather in-depth data about different modes of childhood and in this way generate hypotheses about the effect of modernization processes on childhood.

With a semi-structured questionnaire, the parents and children were interviewed separately (but simultaneously) in their own homes. We asked them similar questions about the family situation and mutual communication, the child's leisure activities and friends, the child's school life and (the child and the parents') plans for the child's future. The children were twelve or thirteen at the start of the study in 1991, follow-up interviews are planned twice, over a period of four years. In this paper we will concentrate on the first round of interviews.

The main question in this paper is: What is the relationship between the style of parent-child communication and the form of child culture? To answer this question we concentrate on the Dutch material. Additionally, we will compare the Dutch findings with regard to child culture and parent-child communication with the West and East German findings, to determine if the influence of modernization is equally apparent in all three regions.

We expect modernity in different domains of childhood to be connected, as we assume the process of modernization is a multidimensional concept. Therefore, we expect children who are raised in a modern family context of negotiation to have a modern child culture, and children growing up in a context of parental control to have a traditional child culture. Furthermore, we expect social class to influence child culture. As higher social classes generally display more modern behaviour, we expect to find more modern child cultures in families with high social backgrounds than in families from the lower social class.

TWO MODELS: CHILD CULTURE AND PARENT-CHILD COMMUNICATION

We will present a model in which the main characteristics of child culture are placed on an scale from traditional to modern (as suggested by Büchner, in press) and a model of modern and traditional parent-child communication (based on Du Bois-Reymond & Torrance, 1994). The framework for the model of child culture was produced on the basis of the theory of modernization in child culture. Next, the research team in each region looked for the cases that best fitted the description of modern and traditional modes of child culture, described in the model. Then the remaining cases were examined extensively, to determine if and where each child culture could be placed on the scale from traditional to modern. In the Dutch sample, we could fix one empirical distinct point in the middle of the scale (partly modern) for some aspects, for others we could only empirically describe the two poles. The operationalisation of each aspect is given below the model.

The model of communication was developed in the same way: theoretically and then empirically by examining all the variants of parent-child communication. Again we determined the most extreme modes first, based on the model below, and then looked for graduations and varieties, of which there were three. Here, we will discuss the general difference between the modern, negotiating parent and the traditional disciplining parent.

Table 1 *Model of Child Culture*

Modern child culture	Traditional child culture
A. Leisure activities	**A. Leisure activities**
1. Many different activities	1. Few different activities
2. Modern activities (judo, fitness, youth theatre etc.)	2. Traditional activities (playing outside, traditional clubs)
3. Organized (commercial) activities	3 Mostly spontaneous activities
4. Orientated towards leisure career	4. Here-and-now orientation
B. Relationships with friends	**B. Relationships with friends**
5. Leisure time mostly spent with friends	5. Leisure time also spent with family
6. Highly differentiated friendship networks	6. Merged group of friends (neighbourhood)
7. Different friends for different activities	7. All activities with the same friends
8. Plans and organizes meetings with friends	8. Meets friends spontaneously
C. Use of space and material resources	**C. Use of space and material resources**
9. Own (bed) room	9. (Bed)room shared with siblings
10. Activities take place in institutions	10. Activities not in institutions
11. High degree of mobility	11. Activities neighbourhood bound
12. Use of (public) transport facilities	12. No transport necessary, walks
13. Conscious consumer attitude	13. Childlike attitude 'money innocence'
14. Particular taste concerning clothing, furnishing, music etc.	14. Leaves all this to parents, no opinion

The operationalisation of each aspect in table 1 is as follows:
1. Modern: three or more, different, (at least) weekly activities. Traditional: less than three activities.
2. Modern: Child is engaged in modern activities weekly (at least). Traditional: Child is mostly engaged in traditional activities.
3. Modern: many activities organized by adults in (commercial) institutions at set times. Traditional: most activities spontaneous;
4. Modern: child sees some activities as projects with (future) goals. Traditional: child participates in leisure activities purely for fun, relaxation.
5. Modern: almost all of child's activities are with friends. Traditional: child's leisure activities are partly with friends, partly with family members.
6. Modern: Child knows friends from three or more social settings. Partly modern: Child know friends from two (independent) social settings. Traditional: Children know friends from school and neighbourhood, both located nearby.
7. Modern: different friends for almost each activity. Traditional: one group of friends.
8. Modern: High amount of organization (almost all meetings planned); Partly modern: Some organization (half of meetings planned); Traditional: No organization (no planned meetings).
9. Modern: Child has own room for activities and visits from friends. Traditional: Child shares a room with siblings, spends leisure time outside.
10. Modern: More than three times a week organized activities. Little time spent spontaneously; 2. Partly modern: One to three times a week organized activities. Part of time spent spontaneously. 3. Traditional: One weekly organized activity at most, most of time spent spontaneously.
11. Modern: three or more 'islands' visited at least weekly; Partly modern: one or two 'islands' visited at least weekly; Traditional: No 'island-hopping': all activities are nearby. (An 'island' is a location outside of the quarter where the child lives).
12. Modern: Child uses public or parental transport at least weekly. Traditional: Child can walk or cycle to all activities.
13. Modern: Child talks knowingly of money matters. Spends pocket money consciously, planning beforehand what to buy, and saving up for something expensive. Traditional: Child spends money almost immediately, does not plan expenditure.
14. Modern: Child has specific taste in clothing, furnishing, parents' clothes and music. Child uses arguments as to why it likes or dislikes certain things. Partly modern: Child has own taste in clothing, but also lets itself be lead by parents. Child is content with the furnishing of the house. expresses a wish to change details. To a certain extent, child also has an own taste in music and other matters. Traditional: Child has no own taste in clothing, 'my parents know what is nice'. Child likes the way the house is furnished, can not specifically say why. Child also follows parents in other matters.

It was not possible to define an 'in-between group' as we did in the case of child culture, as the full scale consists of two forms of parental control and two of negotiation (and some cases in which parents were unable to discipline their children in any way. These families are not included in the analyses).

Table 2 Model of parent-child communication

Parental control (traditional)	Parents and child negotiate (modern)
1. Fixed rules, obligations and sanctions concerning child's attitude and behaviour, no flexibility;	1. Rules and obligations are flexible and take on the form of arrangements and compromises between parent and child;
2. Rules determined by parents, who do not always give reasons for rules. Parents have all the power, and do not take the child's opinion into consideration when determining the rules or sanctions for misbehaviour. There is no discussion or negotiation between parents and child about parental standards or the child's behaviour;	2. Rules and obligations reached in discussion between parents and child. Parents give detailed reasons for rules. Power is more balanced between parents and child as parents listen to child's opinion and take it into consideration when discussing rules/misbehaviour. There is much discussion and negotiation between parents and child about parental standards and the child's behaviour;
3. Child is granted little autonomy with regard to arranging his/her own life inside and outside of the family.	3. Parents grant child much autonomy with regard to arranging her/his life inside and outside of the family.

RESULTS AND DISCUSSION

We developed two empirical typologies: one of child culture, the other of parent-child communication. The child culture typology runs from the most traditional modes, through partly modern variants to highly modern modes of child culture. The typology of parent-child communication stretches from strict parental control, through gradations of control and negotiation, to far-reaching negotiation between parents and child. In the following, we will examine these typologies with data from the Dutch study and compare this with the East and West German findings. We look at child culture first.

We see that there are not very many cases of modern child culture, although there are at least some (partly) modern child cultures to be found in each area. The pace of modernisation differs per region: West Germany seems to fulfil the role of forerunner, having the highest number of modern and partly modern child cultures, East Germany has the lowest number, and the Netherlands rank in between (du Bois-Reymond et al. 1994). In the former communistic system of East Germany it was normal that both mother and father were employed fulltime, and had little time for housework. Therefore the children spent an important part of their 'leisure' time in the home, performing household tasks. Family activities such as visiting relatives were planned in the weekend, leaving the children little time to participate in other leisure activities. Furthermore, there was often a shortage of money, which prevented children from participating in expensive activities. Leisure provisions for children were lacking, and the inferior infrastructure limited children's mobility. Although the structure of daily life in East Germany is changing, the influence of the former communist society on childhood is still detectable today.

The relative lack of modernity in Dutch children's cultures, compared to West Germany may have to do with the typically Dutch family climate, which surrounds children with much care and attention. This is made possible by the high number of mothers who (choose to) stay at home and look after their children, and work part-time. The Dutch family context is based

on spending much (leisure) time together, and thus the child often sticks to a traditional or partly modern child culture.

Table 3 Child Culture in the three regions

	Modern	Partly modern	Traditional	Total
The Netherlands	3	11	24	38
West Germany	8	16	14	38
East Germany	1	6	23	30
Total	12	33	61	106

In conclusion, theory on childhood may exaggerate the extent to which child culture has modernized, as traditional forms of child culture are still normal and exist next to modern forms. Next, we will look at the typology of parent-child communication.

Table 4 Parent-child communication in the three regions

	Negotiation	Control	(Inability)	Total
The Netherlands	16	17	(5)	38
West Germany	23	12	(3)	38
East Germany	14	14	(2)	30
Total	53	43	(10)	106

Modernisation -negotiation between the generations- is apparent in all three regions. Half of all the parent-child relationships are based on negotiation. Again, traditional forms of parent-child communication still exist next to modern ones. As with child culture, West Germany is the forerunner, having the largest number of negotiation relationships (60%).

Relationship between child culture and parent-child communication

Do children being raised in a family where the modern pattern of negotiation is apparent, more often have a modern child culture than children being raised under parental control? To answer this question, we concentrate on the Dutch sample. Table 5. shows us that the Dutch data do not support this assumption.

Of the 17 children being raised under parental control, 6 (35%) have a modern child culture. Of the 16 children raised within a context of negotiation, 7 (44%) have a modern child culture (one child with a modern child culture belongs in the group of parental inability). The difference between these percentages is very small. In examining these data further, we find that three of the five children growing up in families with far-reaching negotiation, have partly modern child cultures. So, the lack of connection between the two domains in the Dutch sample may be partly explained by the fact that we did not find many

'extremely modern' cases in either field: it may be that only extreme negotiation is connected to highly modern forms of child culture.

Table 5 The relationship between child culture and parent-child communication

	Parental Control	Negotiation	Total
Modern Child culture	1	1	2
In-Between Group	5	6	11
Traditional Child culture	11	9	24
Total	17	16	37

However, it may also be that all of today's children (in whatever context they are raised) have much freedom in determining their child culture, and that this domain of childhood is much out of their parents' range of influence. This agrees with historical and social research in which has repeatedly been found that changes in parent-child relationships first became evident in the field of leisure. Parents may refrain almost completely from interfering with their children's leisure activities and friendships, and only stipulate certain 'border' conditions such as the time a child has to be home. Thus, child culture may largely be shaped independently from the general way in which parents and children communicate.

However, child culture is certainly not completely independent from the total family context. We found a strong connection between child culture and the family's social background. Only one child from a low social class had a modern child culture, the other modern and partly modern child cultures stem from the middle and higher class. Without doubt money plays an important role in this, as families from the middle and higher social class can more often afford to let their children travel and take part in expensive activities. Moreover, families with different social backgrounds may convey different messages about the way leisure time should be spent. Families from high and middle social classes are often accustomed to participating actively in forms of cultural recreation themselves, such as reading, art, and music. Even though middle- and higher-class children may not be pushed by their parents to participate in these activities, they still may learn from their parents' example to appreciate such cultural recreation forms, to choose from the variety of cultural activities the ones they wish to participate in, and to develop their own individual taste in, for instance, music. As families from the lower social class are less acquainted with cultural recreation and more often value participating in traditional family activities such as visiting relatives together, their children are also more likely to stick to traditional activities. Furthermore, children from the same social class often meet and befriend each other, and may influence each others child cultures, which become increasingly modern as children motivate each other to travel, to join organized leisure activities and to befriend peers from different geographical and social settings. Traditional child cultures remain traditional if friends also stay close to home and participate in spontaneous activities.

In the future, it will be interesting to determine the connection between child culture and parent-child communication and the influence of social class in West and East Germany to be able to track down intercultural similarities and differences. For the time being we speculate that a child from a high social class, growing up under the strictest parental control has a far greater chance of developing a modern child culture, than a child from a low social

class, growing up in a context of negotiation between parents and child: modernity in these two domains of childhood may not be connected at all.

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THE HOME ENVIRONMENTS OF AT RISK CHILDREN IN THE NETHERLANDS

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The way in which parents educate young children has far reaching consequences for the child and society. It is generally believed that parents have a great impact on their children during infancy and early childhood (Bloom, 1964; Howes, 1990).

High quality parenting during the early years seems particularly critical in view of research which indicates the disappointing effectiveness of schools for children who start with limitations in conceptual knowledge, literacy, language skills, and motivation to achieve (Ceci, 1991; Rutter, 1983; Snow, Barnes, Chandler, Hemphill & Goodman, 1991). To be successful in educating children, schools generally depend on parents to provide children with a basic set of expectations about school, the value of learning and complying with adult directions, and a basic set of cognitive and social competencies, including proficiency in the language used in the schools and a working knowledge of the culture. Unfortunately, in Western Europe as well as in the US large numbers of ethnic minority children have problems with the transition from home to school because they lack some of the requisite skills, attitudes, and knowledge (Eldering & Kloprogge, 1989; Ogbu, 1992; Pels, 1991; Slavin & Madden, 1993). The difference in or lack of cognitive, social and emotional demands in the home setting and the limited didactic skills of parents and other family members are seen as decisive contributors to children's developmental limitations (Kook & Vedder, 1991; Leseman, 1993; Sameroff, Seifer, Baldwin & Baldwin, 1993). The public concern is that children will fail at school and will not become self-supporting productive members of an increasingly complex society.

Notwithstanding commonalities in the home environment and educational experiences of preschool children from North American and Western European countries, there is also considerable variability in the actual educational opportunities and incentives in home and school environments present both within and across those countries (Field, Widmayer, Adler & DeCubas, 1993; Henderson, Bergan & Hart, 1992). The focus of this study are the circumstances present in the home environments of children from four socio-cultural groups in the Netherlands (Dutch, Surinamese, Turkish, and Moroccan). Our goal is to examine the usefulness of the Home Observation for Measurement of the Environment (HOME) Inventory as a measure of the home environment in the four socio-cultural groups and as a predictor for children's cognitive competence.

THE HOME INVENTORY

The HOME contains a large number of items representing types of environmental inputs that the majority of parents, at least in Western countries, do afford their children. Discriminating between these families and those that do not afford their children this level of quality stimulation and support is the purpose of the measure (Bradley & Tedesco, 1982; Caldwell, 1968).

The HOME is designed to measure the quality and quantity of stimulation and support available to a child in the *home environment.*

The early childhood version of the HOME is used with families having children between the ages of 3 and 6 years. It contains 55 items clustered into 8 subscales: 1) Learning Materials, 2 Language Stimulation, 3) Physical Environment, 4) Parental Responsivity, 5) Learning Stimulation, 6) Modeling of Social Maturity, 7) Variety in Experience, and 8) Acceptance of Child.

In most countries the pattern of scores on subscales tends to vary from group to group. In the US, for example, Hispanic families often get very high scores on the Responsivity and Acceptance scales, but low scores on Academic stimulation. The patterns for African-American families and Asian American are different. African-American families have low scores on Academic Stimulation as well as rather low scores on Modeling. Asian American families are likely to have high scores on Academic Stimulation (Bradley, 1993).

Home education in the Netherlands

In the Netherlands several studies give us a picture of the education migrant children receive at home. We know, for instance, that migrant children generally have less learning materials (Van der Hoek, 1994), with Surinamese children having a slightly better access to these materials than Moroccan and Turkish children. Studies of Moroccan and Turkish families (Pels, 1991; Van der Leij, 1991) show that mother child interactions in these cultures are geared more to social functioning than to manipulation and exploration of physical objects. As a result the children are quick in learning concepts expressing varying sorts of family relationships and behaviour suitable to a variety of social situations, but they lack more general concept knowledge. This might negatively effect children's cognitive functioning and academic achievements. A peculiarity in the Surinamese group is that parents leave their children for longer times unattended at home and are not very strict and consistent with meal and sleeping times (see for a review Van der Hoek, 1994).

Three research questions

The studies that yielded this information often were expensive studies using time consuming observation and interview methods. Using the HOME was a rather easy and inexpensive way to analyze educational practices in four ethnic groups in the Netherlands. It allowed us to find out whether the HOME scores would parallel the findings in these studies.

It has been shown in North American samples that HOME predicts children's cognitive competence beyond what is predictable using socio-demographic markers (Bradley & Caldwell, 1979, 1988; Elardo & Bradley, 1981). Our second question is whether the Dutch sample yields similar results.

A third question is whether the home situation of immigrant children in the Netherlands is different from the situation of minority children in the US; and, if so, in what respect?

METHOD

Sample

In 1987 the Dutch Ministry of Welfare, Public Health and Culture initiated a two year home intervention program for 4 to 6 year old children, internationally known as HIPPY.

Children whose parents have less than ten years of formal education are eligible for participation in the program. From 1987 to 1992, an evaluation study was carried out with Dutch, Surinamese, Turkish, and Moroccan mothers and their children living in Amsterdam

(Eldering, 1992; Eldering & Vedder, 1992, 1993). The findings presented in this article derive from this study. The HOME was administered to 54 Dutch, 28 Surinamese, 32 Turkish, and 19 Moroccan families upon entering the program. At the end of the program the HOME was administered again. The mothers from Surinam, Turkey and Morocco were first generation immigrants, who, on average, lived for more than ten years in the Netherlands. Table 1 displays characteristics of the participating families.

Table 1: Characteristics of 133 families participating in HIPPY (missing information for eight families)

	Dutch (54)	**Surinam (28)**	**Turkish (32)**	**Moroccan (19)**
number of years of school education[a]	10.0	9.1	5.8	1.8
number of children in family[b]	1.8	2.4	2.9	4.1
length of stay mothers (yrs)		11.0	10.4	10.3
length of stay fathers (yrs)[c]		11.3	11.9	17.8
% single parent families[d]	17	33	0	0
% fathers unemployed[e]	11	28	48	61

a) $F = 45.5$, $p < .001$ (MRT/LSD: Dutch > Tur. & Mor.; Sur. > Tur. & Mor.)
b) $F = 34.3$, $p < .001$ (Dutch < Sur., Tur. & Mor.; Mor. > Sur. & Tur.)
c) $F = 15.7$, $p < .001$ (Mor. > Sur & Tur.)
d) $Chi^2 = 20.0$, df 3, $p < .001$ e) $Chi^2 = 25.2$, df 3, $p < .001$

Table 1 shows the differences between the four ethnic groups. Surinamese families resembled Dutch families in mothers' educational level, but differed in number of children. An important characteristic of the Surinamese group is the relatively high percentage of single parent families. More than half of the Moroccan mothers were illiterate and did not speak Dutch. More than 60% of fathers of the Moroccan families were unemployed. Moroccan families had the largest number of children. Sixty-nine percent of Dutch mothers and 83% of Moroccan mothers did not work outside the home. For Surinamese and Turkish mothers the percentage was about 75. The demographic characteristics of the groups participating in this study are representative of the populations in the Netherlands.

Instruments

Information needed to score the HOME inventory is obtained during a 45 to 90 minute home visit done at a time when the target child and the child's primary care giver are present and awake. Other family members, and even guests, can be present. The procedure entails semi-structured observations and an informal interview done so as to minimize intrusiveness. Throughout the visit observations of parent/child interaction and discussions with the parents about objects, events, and transactions that occur are probed and interpreted from the child's point of view. The intent is to understand the child's opportunities and experiences. The HOME has been introduced and administered in the family's home language (Dutch, Moroccan-Arabic and Turkish). The mothers generally enjoyed the conversation during which

the HOME was administered. Some mothers preferred to have a family member or friend present during the interview. Psychometric information about the inventory is found in the Administration Manual (Caldwell & Bradley, 1984).

We used scores on a non-verbal intelligence test (SON-R; Snijders, Tellegen & Laros, 1988) as a measure for cognitive competence. The test was administered individually at the end of the home intervention program.

RESULTS

The Cronbach alpha reliability for the total HOME scale was good (.85), although it was a little lower than the reliability estimate reported for the US normative sample (.93; Caldwell & Bradley, 1984). Many of the items, however, contributed little to the scale's overall reliability. The resulting alpha for the subscale learning material was .79. The other subscales all had alpha's lower than .60. Four subscales had near ceiling scores in all groups: language stimulation, physical environment, responsivity and acceptance. Ceiling effects on the HOME have previously been reported for middle class samples in the US (Elardo & Bradley, 1981; Zimmerman, 1981,) and are a consequence of the rationale used in constructing the HOME: it was primarily meant as a screening instrument distinguishing the large amount of safe, secure and developmentally enriching home situations (high scores) from the much smaller number of homes that make developmentally poor environments for children (low scores).

Dutch families had the highest mean score on the HOME (40.1, S.D. = 6.0) (see table 2). The scores of Turkish families averaged about two points higher on the HOME than families from Surinam. This is a somewhat surprising finding given that mothers from Surinam had spent an average of 9.1 years in formal schooling as compared to only 5.8 years for Turkish mothers. Parents' education has a rather strong correlation with HOME scores (Bradley, 1993; see also Table 3). Correspondingly, 48% of Turkish fathers were unemployed as compared to only 28% of Surinamese fathers, albeit 33% of Surinamese children lived in homes without fathers. Both being raised by only one parent and having an unemployed father are risk factors for children's cognitive development (Bosman, 1993; Cherlin, Furstenberg, Chase-Landsdale, 1991; Sameroff, Seifer, Baldwin & Baldwin, 1993).

Table 2: Mean HOME scores (plus standard deviations)

	learning materials 11 items[a]	**EC-HOME 55 items[b]**
Dutch (54)	6.8 (2.2)	40.1 (6.0)
Surinamese (28)	4.6 (2.7)	34.1 (7.8)
Turkish (32)	2.9 (1.7)	36.4 (3.8)
Moroccan (19)	2.5 (2.4)	34.1 (7.5)
Total (133)	4.8 (2.9)	37.1 (6.7)

a) $F = 28.6$; $p < .001$ (MRT/LSD: Dutch > Sur., Tur. & Mor.; Sur. > Tur. & Mor.)
b) $F = 7.8$; $p < .001$ (Dutch > Sur. & Mor.)

The mean score of HIPPY participants in the Netherlands (37.1, SD = 6.7) was essentially the same as the mean score for the normative sample reported in the Administration Manual for the HOME (37.5, SD = 10.4 at age 3, and 41.9, SD = 10.0 at age 4½), although the variability in the Dutch sample was smaller. The normative sample for the HOME was not a US population based sample. It contained about 30% welfare recipients. However, almost half of the US normative sample would have qualified for HIPPY participation using years of education as a criterion as was done in the Netherlands.

The mean total scores of the three immigrant groups were not substantially different from the mean scores for some minority groups in the United States (Bradley, Caldwell, Rock, Barnard, Gray, Hammond, Mitchell, Siegel, Ramey, Gottfried & Johnson, 1989), although the pattern of subscale scores for immigrant groups in the Netherlands varied from those reported for US groups. Most notably, there were fewer learning materials available to immigrant groups in the Netherlands, while scores on the Physical Environment, Parental Responsivity, and Acceptance subscales tended to be higher than for poor families in the US.

In the Dutch sample significant differences between ethnic groups were observed for the subscale learning material and for the total scores.
Families differed considerably in terms of the quantity of Learning Materials made available to children (puzzles, books, etc.). These were abundantly present in Dutch homes but were scarce in Turkish and Moroccan homes. The Surinamese families had a score in between. The pattern of scores for this subscale was as expected.

In the HIPPY experiment we used the HOME at the start and the end of the program. As stated already pretest scores were high and many items had high pass rates. For answering our second question we used an abridged, better discriminating version of the Inventory. The following criteria were used for item selection: (1) Since we wanted to use HOME again at the end of the program, some 18 months after conducting the pretest, we included only those items that were age appropriate. This criterion led to the exclusion of three items in the Academic Stimulation subscale. (2) Pass rates (p-values) could not exceed .80. (3) Items used at the pre-test and post-test had to be the same.

The result of the scale reduction process was a 16-item short form of HOME. Most of the items came from the Learning Materials subscale, three from the Academic Stimulation subscale, and two concern mother's evaluation of the child's activities or achievements. The mean pre-test score for the 16-item short form was 7.0 (SD = 4.0). The mean post-test score was 8.0 (SD = 4.3). The Cronbach alpha for the pre-test was .83 and for the post-test .84.

We analyzed the correlations between the scores on the 16-item short form (henceforth called HOME16) and a few family characteristics. The results are displayed in Table 3.

Table 3: Relationships between HOME-16 scores and structural family characteristics

	pre-HOME-16		**post-HOME-16**	
	n	**r**	**n**	**r**
length of mother's education	96	.54**	50	.57**
number of children in family	99	-.48**	52	-.42**
father's job size	86	.33**	46	.31*

* $p < .05$ ** $p < .01$

Maternal education showed a moderate positive correlation with HOME16 whereas the number of children in the family showed a moderate negative correlation. Fathers' job size (unemployed, part time or full time employed) manifested a low but significant correlation with HOME16 scores.

The standard version of HOME contributes to the prediction of children's cognitive competence beyond what is predictable from socio-demographic indices (see Bradley, 1993, for a review). Therefore, we were interested in whether the shortened version of the Inventory (HOME16) might better predict children's intelligence than does mother's educational status alone, even though HOME16 was correlated with maternal education .54 in the HIPPY sample. We used scores on a non-verbal intelligence test as the dependent variable in two regression analyses, both involving forced entry of variables in a specified order to test for specific additive contributions of model variables. In the first analysis, maternal education was entered, followed by the post-test HOME16 score. In the second analysis, children's pre-test intelligence score was entered first, followed by maternal education, then the post-test score on HOME16. Results are presented in Table 4.

With the first analysis the sample size was 55, and for the second 52. These analyses show that scores on HOME16 contribute to the prediction of children's post-test intelligence scores beyond what is predictable from both mothers' educational status and children's initial intelligence scores.

Table 4: The outcomes of regression analyses with post-test intelligence as the dependent variable and mothers' school education, HOME-16 scores and pre-test intelligence scores as independent variables

	MR	R^2(-change)	F(-change)	p
education mother	.30	.09	5.2	.03
post-HOME-16	.51	.17	11.7	.002
pre-intelligence	.52	.28	19.0	.001
education mother	.59	.08	5.8	.02
post-HOME-16	.68	.11	10.3	.003

DISCUSSION

The home environments of Dutch, Surinamese, Turkish, and Moroccan families who participated in HIPPY were assessed using the Early Childhood version of the HOME Inventory. We wanted to answer three questions: (1) Does information yielded by HOME scores for a variety of cultural minority groups in the Netherlands parallel what we know from other sources about children's educational situation? (2) Is HOME a better predictor of cognitive competence than number of years of mother's education? (3) Is immigrant children's home situation in the Netherlands different from the situation of minority children in the US, and in what respect?

Because of the near ceiling scores on several subscales and the corresponding lack of variability on those subscales with our sample in the Netherlands, the standard version of the

Early Childhood HOME Inventory appeared limited in terms of making useful discriminations between families. We selected the best discriminating items to construct an abbreviated scale. With this scale we could answer the questions.

There was significant variability in the level of educational stimulation available to children in the home environments of all four ethnic groups; and there were some characteristic differences between groups in terms of their scores on the HOME Inventory. As expected Moroccan and Turkish families made less learning materials available to their children than Dutch and Surinamese families.

Educational interactions in these cultures are geared more to social functioning than to manipulation and exploration of physical objects. As a result the children are quick in learning concepts expressing varying sorts of family relationships and behaviour suitable to a variety of social situations, but they lack more general concept knowledge (Pels, 1991; Van der Leij, 1991). In general the Dutch families provided their children with a greater variety of enriching cultural and educational experiences than the other families.

The shortened version of the Early Childhood HOME appeared to be a better predictor of children's cognitive competence than a simple socio-demographic marker like number of years of mother's education. Scores on the abbreviated HOME16 were correlated with children's intellectual performance even when mother's education and the child's previous intellectual performance were statistically controlled. These findings are consistent with findings with younger children reported by several investigators in the United States (Bradley & Caldwell, 1977; Gottfried, 1984).

The mean total scores of the three immigrant groups were not substantially different from the mean scores for some minority groups in the United States (Bradley, Caldwell, Rock, Barnard, Gray, Hammond, Mitchell, Siegel, Ramey, Gottfried & Johnson, 1989), although the pattern of subscale scores for immigrant groups in the Netherlands varied from those reported for US groups. Most notably, there were fewer learning materials available to immigrant groups in the Netherlands, while scores on the Physical Environment, Parental Responsivity, and Acceptance subscales tended to be higher than for poor families in the US. These differences probably reflect the child-rearing practices of immigrant families in the Netherlands and the relatively high standards of the social security system in terms of support for income, housing, health care and education for children.

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ATTACHMENT SECURITY ASSESSED WITH THE ATTACHMENT Q-SORT: A REVIEW OF EMPIRICAL STUDIES

Carolus M. J. L. Vereijken

In this paper I will review studies that apply the Attachment Q-Sort (AQS) to assess security of attachment. The aim is to evaluate the congruent and predictive validity of the AQS as an instrument for the assessment of attachment security.

The AQS consists of a large number of cards. On each card a specific behavioral characteristic of children between 12 and 48 months of age is described. The cards can be used by an observer as a standard vocabulary to describe the behaviour of a child in the natural home-setting. From this description a security score can be derived. For example, by comparing the description with the behaviour profile of a prototypical secure child, described by several experts in the field of attachment theory.

The AQS has some advantages over the Strange Situation. First, it can be used for a broader age range. Moreover, AQS derived attachment security is based on observation of the infant's secure base behaviour in the home and may therefore have higher ecological validity. Furthermore, the AQS doesn't require induction of stress.

Obviously, if the AQS is a valid instrument for the assessment of attachment security, it would be an important addition to the attachment researcher's tool box. In the present study two types of validity are discussed. First, congruent validity indicates the degree to which a construct assessed with a given instrument is related to the same construct as measured with another instrument assumed to assess the same construct. Secondly, predictive validity is defined as indicating whether the construct measured with a given instrument is related to other constructs in the way theory predicts. In the case of attachment theory, the following three propositions are central theory and have been supported by empirical evidence.

First, the child's security is assumed to be the resultant of so called "attachment relevant experiences" such as the caregivers sensitive responsiveness. Life stress and social support are supposed to influence the caretaker's sensitive responsiveness and thereby the child's attachment security.

Secondly, stability of attachment security is influenced by life events and changes in life circumstances which influence the caregiver's sensitive responsiveness (Lamb et al., 1985). To properly evaluate whether a certain level of stability is consistent with attachment theory, data on life events and life circumstances should be included in the analyses. Because this was done in none of the studies reporting on stability, I will not further discuss stability of attachment in this review.

Thirdly, quality of attachment is assumed to predict later social and cognitive competence.

Children can be attached to mother, to father but also to a day care teacher. The child's security in all these relationships is with the AQS. It is assumed that theoretical relations described above should hold true for each of the child's attachment relationships.

There are some additional issues that should be considered in evaluating the AQS as assessment instrument for security of attachment. The AQS can be used by trained observers to describe the attachment relationship of a child with its caretaker, but also by the caretaker, who is a member of the relationship. Because in both cases the same attachment relationship is described they should yield the same results. There are, however, some reasons why these Q-sorts may yield different results. First, the very presence of the observer in the family may

influence the mother-child interaction. Secondly, the amount of time an observer can spend with the family is very limited in comparison with the time the mother can observe her own child. The situations that the observer has access to are also limited. Thus, the sample of child behaviour that the observer can describe may be limited. At the other side, because of mother's involvement in the attachment relation with her child, she may be subject to social desirability in describing it. For these reasons, AQS sorted by mothers and by observers might yield different results. Therefore, in this review I will discuss the validity of AQS descriptions collected by observers and by caretakers separately. Hereafter, AQS descriptions by observers are called 'Observer AQS'. AQS descriptions by a caretaker are indicated by naming the caretaker before "AQS", e.g.: 'mother AQS'. Empirical evidence found for convergence between the two measures will be discussed in a separate section.

Since the first publication on the AQS in 1985 (Waters & Deane) various data-collection procedures have been applied. Waters and Deane proposed an extensive procedure to collect observer Q-sorts, using free observation of mother-child interaction in the home. Several studies, however, used more limited procedures and structured home-visits. Also, training of caretakers for the AQS description varied widely over studies. Several authors have suggested that the way in which Q-sort descriptions are collected may affect the validity of the AQS (Teti & McGourthy, submitted). Therefore, I will discuss data-collection separately.

SELECTION OF STUDIES

In this review I discuss published studies and a few studies that are to be published soon. I chose for this strategy because publication is a safeguard for methodological quality of the studies. However, there is also a disadvantage that readers should be aware of. Light and Pillemer (1984) explain that manuscripts reporting negative findings are less likely to be submitted by authors and less likely to be accepted by editors of journals than manuscripts reporting positive results. Such a publication bias may result in overestimation of effect size. This may also bias the conclusions of the present review. Indeed at several conferences, researchers have expressed informally that they found negative results using mother AQS descriptions (see Teti and McGourthy, submitted; Fifth European Conference on Developmental Psychology, 1992, Seville, Spain).

The literature research yielded 31 articles, which represented 28 different samples. In some cases, two or more articles report on the same sample of subjects. In these cases, the results of that sample are treated as belonging to one empirical study. Of the 28 samples, 24 were conducted on the North American continent. Mothers described their attachment relationship with their child in 19 studies, fathers did the same in 5 studies. Trained observers described attachment to mother in 12 studies and attachment to a day care teacher in 5 studies.

RESULTS

Validity of the observer AQS for the assessment of attachment security

Congruent validity

In four studies observer AQS-security has been related to security measures derived from the Strange Situation. Three of the studies reported considerable convergence between the two

measures of attachment security (Atkinson, Vaughn, Chisholm, Blackwell & Tam, submitted; Howes & Hamilton, 1992a; Vaughn & Waters, 1990). However, Mangelsdorf, Plunkett, Dedrick, Berlin, Meisels and McHale (submitted) found that AQS-security and Strange Situation were not significantly related. From these results, I conclude that the AQS possesses at least some congruent validity as an assessment instrument for security of attachment.

Predictive validity

Moran, Pederson, Pettit and Krupka (1992), Pederson, Moran, Sitko, Campbel, Ghesquire and Acton (1990), Vereijken and Kondo-Ikemura (submitted) and Vereijken, Kondo-Ikemura and Riksen-Walraven (submitted) studied whether maternal sensitivity predicted AQS attachment security with mother. The reported correlations are all significant and higher than .44. Howes and Hamilton (1992a) and Howes, Phillips and Whitebook (1992) related attachment security with teacher to behaviour of the teacher towards the child. They found that sensitivity, involvement and appropriate caregiving behaviour all significantly predicted AQS attachment security.

As described, maternal stress and social support may affect security by influencing maternal sensitivity. Jacobson and Frye (1991) reported that a self report measure for maternal well-being was indeed related to AQS-security. A coaching program designed to increase attachment security by providing social support to the mother succeeded in increasing AQS-security. Nakagawa, Teti and Lamb (1992) found that maternal parenting stress predicted AQS-insecurity. Maternal general stress and maternal social support, however, were not related to AQS-security in the expected direction. According to attachment theory, attachment security should predict social and cognitive competence. Atkinson et al. (submitted) claim that cognitive competence can be an important influence on mother-child attachment quality, but can also be a consequence of attachment quality. In their study with children with Down's syndrome, AQS-security was considerably correlated with the mental and psychomotor developmental quotient and with general adaptive skills. Studies on the relation of AQS security with later social competence have focused on prediction of peer competence. Howes et al. (1992) found that security with day care teacher, as assessed by observers, was related to concurrent peer competence. Furthermore, Howes, Matheson and Hamilton (1994) and Howes, Hamilton and Matheson (1994) found that AQS-security with day care teacher was related to measures of peer competence both at the same time and at later ages.

Thus, for observer AQS security clear support has been found for the links with maternal sensitivity and with later social and cognitive development.

Validity of the parent AQS for the assessment of attachment security

Congruent validity

Parent AQS security has been related to the Strange Situation in three studies. Belsky and Rovine (1990) found a significant but moderate convergence between AQS-security and Strange Situation. In the Youngblade, Park and Belsky study (1993) the same result was found for mother AQS-security but not for father AQS-security. Van Dam and Van IJzendoorn (1988) found that mother AQS-security was not significantly related to the Strange Situation. Stevenson-Hinde and Shouldice (1990) related mother AQS-security to attachment security as assessed with the system developed by Cassidy and Marvin (1989). AQS-security was not significantly related to any of the indicators of attachment security. Vereijken and

Hanta (submitted) studied relations with a number of child-behaviors indicating attachment security. None of the correlations was significant.

These results show that congruent validity of the mother AQS is very limited.

Predictive validity

The main proposition of attachment theory concerning the relation between the caretaker's sensitivity and attachment security is investigated in four parent AQS studies. Pederson et al. (1990) found moderate correlations between maternal sensitivity and AQS-security. These findings are confirmed by Caldera (submitted) who also reported moderate relations. However, in the studies by Van Dam and Van IJzendoorn (1988) and Vereijken and Kondo-Ikemura (submitted) maternal sensitivity was not related to AQS-security. In two other studies more general measures assessing maternal child rearing behaviour were used. Teti, Nakagawa, Das and Wirth (1991) found moderate correlations with maternal involvement. Wachs and Desai (1993) found a strong relation with quality of the social environment provided by the caregiver.

Measures of maternal stress and social support have been related to AQS-security by Howes and Markman (1989), Jarvis and Creasey (1991) and Teti et al. (1991). Howes and Markman found that AQS-security was related to premarital and concurrent measures of marital harmony for mothers, but not for fathers. The studies by Teti et al. (1991) and Jarvis and Creasey (1991) found considerable correlations between maternal stress and AQS-security to mother. However, in all three studies the estimates of maternal stress and social support have been provided by the caretakers themselves. As the AQS descriptions have also been provided by the caretakers, the results may be biased by halo effects.

The relation between AQS security of attachment and later social and cognitive development have been extensively studied. Four studies report relations with peer competence. Park and Waters (1989) and Kerns (1994) observed dyads of children. Either both members of the dyad were assessed as secure with the AQS or one member was secure and the other member insecure. Secure-secure dyads turned out to be more competent than secure-insecure dyads on one out of four factors of peer competence at 45 months and on two out of four factors of peer competence at 59 months. LaFreniére, Provost and Dubeau (1992) found that only AQS-security by mother, not by father, was related moderately to peer competence. However, Vereijken and Hanta (submitted) found no correlation between AQS-security assessed by mothers and peer competence. Youngblade et al. (1993) found that for the mother AQS neither 12-months nor 36 months AQS-security predicted later peer competence. For father, AQS-security was moderately related to only one out of four factors of peer competence. Apart from the relation of AQS assessed attachment security with peer competence, LaFreniére et al. (1992) studied relations with internalizing behaviors. It is hypothesized that attachment quality is associated with later internalizing behaviors such as withdrawn behaviour, depression, anxious or fearful behaviors. LaFreniére et al. (1992) found that AQS-security by mothers, not by fathers, was related moderately to internalizing behaviors. Stevenson-Hinde and Shouldice (1990) studied anxious and fearful behaviors. They found that AQS-security was moderately related to fear of a strange room but not to separation distress or to fear of strangers.

I conclude that, for mother AQS security, support for the link with maternal sensitivity is reasonable, but evidence for the link with later social and cognitive development is very limited.

Data collection procedure and validity of observer AQS for assessment of attachment security.

To describe a child with the AQS, it is necessary to collect a representative sample of child behaviour. Trained observers can achieve this by observing the child over different occasions, for an extended period of time and with more than one observer. Waters and Deane (1985) proposed to collect a representative sample of child behaviour by visiting three times three hours. In later studies, discussed in this review, data collection procedures were simplified by reducing number and duration of the visits and sometimes number of observers. However, if the data collection procedure is simplified too much the sample of child behaviour may become too limited. This could explain negative findings with the observer AQS reported in two studies (Nakagawa et al., 1992; Mangelsdorf et al., submitted). For example, Nakagawa et al. (1992) observed only once for 2 hours with sometimes only one observer. They found no relation between maternal life stress and AQS-security, less social support was related to higher AQS-security. More direct support for the influence of quality of data collection on validity of the AQS as assessment instrument of attachment security is given by Teti and McGourthy (submitted). They estimated quality of data collection by asking observers to indicate confidence in their own AQS description. This estimate was significantly correlated to concordance between mother and observer AQS.

To collect a representative sample of child behaviour in a relatively limited amount of observation time, some researchers succesfully applied structured home-observation procedures instead of free observation (Moran et al., 1992; Vereijken et al., submitted). For example, in a study by Moran et al. (1992) one or two observers conducted a 90 minutes structured visit. They found that maternal sensitivity was significantly related to AQS-security.

Data collection procedure and validity of mother AQS assessed attachment security

In comparison to observers, mothers have much greater access to their children's behaviour. Thus representativeness of the sample of observed child behaviour will not be a problem for the mother AQS. However, some other problems may arise. The Q-sorting procedure itself may cause problems. Teti and McGourthy (submitted) mention three crucial points that should be considered for the proper use of the AQS by mothers. The mothers should be given ample time to familiarize themselves with the Q-sort items before sorting. Furthermore, it should be stressed that the mother is to describe current child behaviour. Finally, the instruction on how to perform the sorting task should be given by a trained researcher in person. Because during the sorting task questions may arise about the Q-sort items, the mothers should be assisted while sorting the AQS. The reviewed studies give some support for the view that, if properly collected, the mother AQS is a valid instrument for the assessment of attachment security. Two studies in which the three points discussed by Teti and McGourty were followed reported positive results (Jarvis & Creasey, 1991; Teti et al. 1991) whereas two other studies in which mothers had to sort the Q-sort alone at home showed negative results (Vereijken & Kondo-Ikemura, submitted; Vereijken & Hanta, submitted; Youngblade et al., 1993). However, quality of data collection cannot explain the results of studies in which proper data collection procedures yielded negative results (Van Dam & Van IJzendoorn, 1988; LaFreniére et al. 1992).

Furthermore, application of the criteria mentioned by Teti and McGourthy (submitted) also has some disadvantages. First, the precautions mentioned are very time consuming. Secondly,

supervision of mother during the sorting task includes answering questions about the contents of the separate items. By discussing the concrete child behaviour descriptions that are written on each Q-sort card the parents' AQS description may be influenced by the supervisor.

Validity of mother AQS for assessing attachment security: social desirability and maternal personality.

Apart from proper collection of Q-sort descriptions, two other factors may play a role in the validity of the mother AQS. First, mother Q-sorts may be susceptible to response bias. It has been argued that the Q-sort method suppresses response bias. Although this may be true for some forms of response bias, it's obvious that the Q-sort method does not keep subjects from giving socially desirable Q-sort descriptions (Edwards & Horst, 1953). This problem cannot be solved by partialling a social desirability score from the security score. It is doubted whether this is a justifiable procedure if, as is true for security, the concept to be measured is also socially desirable (Edwards, 1990; Nicolson & Hogan, 1990; Paulhus, 1984).

Secondly, in order to provide a valid AQS description, mothers should be able to perceive their children's behaviour accurately. According to Ainsworth, Bell and Stayton (1974), the ability to pick up a child's signals and to interpret them correctly is an important prerequisite for a mother to respond sensitively to her child's behaviors. Obviously, the same ability is required for describing the child accurately with the AQS. This may explain Vereijken and Kondo-Ikemura's (submitted) observation that the convergence between mother and observer AQS was significantly correlated with the mother's sensitive responsiveness as observed in mother-child interaction. Stevenson-Hinde and Shouldice (1990) also argue that bias in mothers' perception of their child may be related to the child's attachment quality. They found that mothers of secure children consistently assess their children's attachment security lower than observers, whereas mothers of insecure children consistently assess their children's attachment security higher than observers.

Distinguishing mother and observer AQS.

Mother AQS and observer AQS were discussed separately. Support for their congruent and predictive validity is different. Furthermore, each has specific data collection problems. Whether mother and observer AQS should be seen as different instruments can also be studied by computing concordance between the two measures. In several studies the mother and observer AQS have been used parallel. Waters and Deane (1985) reported an average correlation between observer and mother-AQS descriptions of .80. However, this correlation is difficult to evaluate because correlations between AQS descriptions from randomly selected subjects are also expected, on the average, to be higher than zero. Other studies report a measure of concordance that does not have this problem.

Of three studies reporting such correlations, two show considerable concordance between mother and observer AQS; Pederson et al. report .57 concordance, Teti & McGourthy report .53 concordance. Vereijken and Kondo-Ikemura (submitted) found only a .21 concordance. These results suggest that although concordance may be significant, only limited variance is shared. Thus mother and observer AQS are not interchangeable.

CONCLUDING REMARKS

This paper reviewed studies in which the Attachment Q-Sort was used. From the review of studies it becomes clear that both congruent and predictive validity of the observer AQS are sufficient. However, proper attention has to be paid to data collection procedures. I argued that representativeness of the observed sample of child behaviour can be achieved by longer by more observers or by structuring the home-visit.

Support for the validity of the mother AQS was less convincing. Congruent validity is weak and predictive validity was only partly supported. A considerable improvement can be made by adhering to the three important aspects of the data collection procedure as discussed by Teti and McGourthy (submitted). However, it is questionable whether this can solve all problems with the mother AQS. Especially social desirability and maternal characteristics that are linked to the child's security of attachment may influence the validity of the mother AQS as assessment instrument of security of attachment.

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THE SECOND CHILD: A DECISIVE FACTOR IN FAMILY ORGANIZATION

Christian Alt and Alois Weidacher

"Don't think that with a second child you will have less troubles. They will be different in type. You have got used to the fact that you have to reorganize your life completely, true enough. But don't forget that with one child you still get done these or other tasks which you wan´t be able to do with two children. Having just one child you can go among people, having two children in your own you'd better stay at home right away. And when I think of having the whole procedure again all from the beginning, getting up at night, swaddling the baby and rocking it to sleep in my arms when it is crying and you just don´t guess why: How dreadful! And yet: I wish to have the second child. Why? Because it´s too nice, I can´t describe it." (Rerrich, 1988.)

Comments and arguments of this sort one can hear when asking a woman why she decided or decides to have a second child. It is a characteristic feature that the very reasons for having a first child (to experience pregnancy and birth, to have a child in common with the partner) are not at stake anymore in connection with a second child. You will hear more often concerns about growing up as a single child, having no playmates, no opportunities for learning to share with others. On these grounds parents often start feeling that family begins but with the second child.

Families with children up to their higher school-age (e.g. 14 years) have one main problem in common, the time-economical problem. The problem increases with a higher number of children and as a function of disposing facilities depending on unfavourable material and other resources.

The following remarks should show that families are forced to decide upon reorganizing their everyday life on account of two or more children depending on conditions of social stratification (educational status, professional position, income level), point of time of founding the family, family life cycle. The main thesis on the subject being that a higher number of children (two children and more) leads to more traditional forms of family life organization.

The label *traditional* is supposed to stand for: high appreciation for marriage, strong positive attitude to educational targets such as a sense of duty, employment status of the husband only, trend to an earlier point of time of family foundation, two or more children, a stronger priority in favour of family work as against employment of the mother.

Opportunities related to professional perspectives, career chances, time structure of employment varying by professions and professional positions, educational status and income level carry effect on possibilities of everyday family life organization in connection with employment.

The decisional process of family organization in the situation with two or more children is linked to the attachment to values greatly depending on the educational level or as a compensational effect due the lack of alternative chances.

METHOD

The analysis is based on data produced in a state-financed (Federal Ministry for Family and the Elderly) family survey on more than 10 000 persons (aged 18 to 55 years) interviewed on the subject of change and development of life forms. This representative study had its first wave in 1988/89 and is being replicated 1994 for the first time. The data now available for the analysis refer to the old federal countries. The population referred to by the following analysis includes only about 6500 persons (out of 10 043), all of them corresponding to the official status 'married, living together with their partner' at the time of the interview.

The majority of the data are of a nominal or ordinal scaling level. It was therefore decided to choose HOMALS, a method of non-linear multivariate analysis. In the case of discrete multivariate distributions at a low data level the homogeneity analysis is expected to give information on distributions by means of transformation of data, reductions in dimensional quantity and operations as e.g. by principal component analysis.

To understand the output of these analyses you had to look up for two things: the length of the arrows and the neighbourhood of these arrows. The length is the importance of the value, the closeness is shown us the homogeneity of different variable values.

RESULTS

Employment situation, children, family cycle and the parents' social status.
The relation between the employment status of parents, their number of children und their level within social stratification constitute a main object of our analysis. Our presumptions in this connection tend to the opinion, that the number and age of children takes a decisive influence on the employment behaviour of the mother, though not independent of their level in social stratification.

At a first look on the results it strikes that the pattern of homogeneity analysis appears to be almost the same for men and women. In both cases we observe clear differences between the first dimension *no children, number of children* and the second dimension *smaller children versus older children* (up to the age of 14 years/15 years and older). The situation regarding the employment status (of the mother) seems to be rather independent from the factor of social stratification (see figure 1): If there is more than one child in the household and if the youngest child is under the age of 14 years then only the husband is employed in the majority of cases. It is far more likely that both husband and wife are employed, if there is only one child in the family.

Discriminating the result by the variables of sex it appears that women more frequently tend to traditional forms of job division especially if they count themselves as belonging to the upper social strata and if there are more and younger children in the household. Among young women up to the age of 35 year (less pronounced also women of higher age) those with low educational status and professional position less frequently have no child, more frequently one or three and more children than women with a higher educational status and professional position.

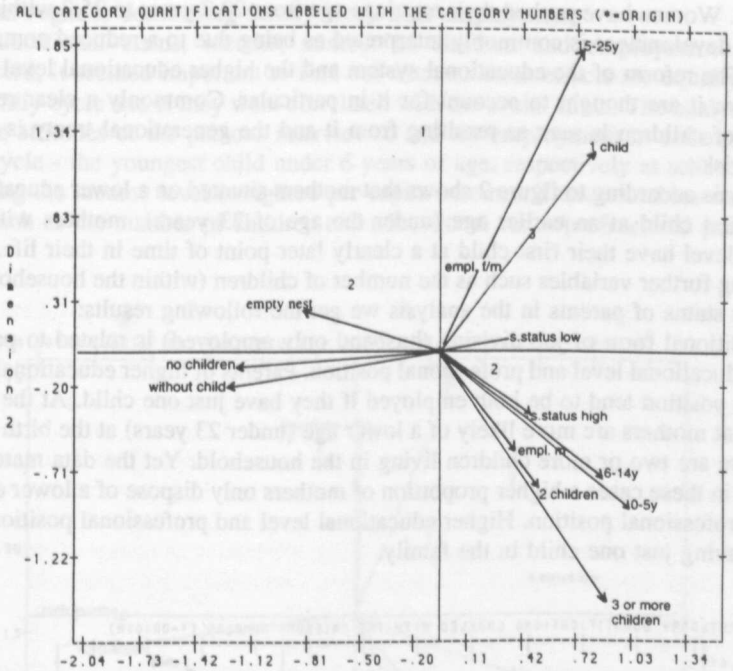

Figure. 1 *Employment status, number of children, family life cycle and the husbands' educational and professional status*

As it can be expected these young women prefer to remain employed to a fairly high percentage as long as they have only one child; their behaviour changes drastically with a second child, but there are only minor further changes on account of a third child. There are striking differences to be stated in the employment behaviour of women (by the number of children) according to their level of education and professional position:

Table 1 **Number of Children, educational and professional status and employment situation of parents**

	1 child	2 children	3 children
husband only employed (% from 100 each)			
high educ./prof. position	25	46	44
low educ./prof. position	51	59	59

Point of time of family foundation

According to official statistical evidence since the seventies women more frequently than men postpone their marriage. The average marriage age of men was 25,3 years in 1975 but already

27,7 in 1987. Women have pushed their marriage age from 22,7 years to 25,2 within the same period. This development is commonly interpreted as being due to a reduced commitment to the family. The reform of the educational system and the higher educational level of women resulting from it are thought to account for it in particular. Commonly a clear reduction in the number of children is seen as resulting from it and the generational treaty is thought of as being at risk.

The analysis according to figure 2 shows that mothers situated on a lower educational level have their first child at an earlier age (under the age of 23 years), mothers with a higher educational level have their first child at a clearly later point of time in their life.

Integrating further variables such as the number of children (within the household) and the employment status of parents in the analysis we get the following results:
A more traditional form of job division (husband only employed) is related to parents with rather low educational level and professional position. Parents of higher educational status and professional position tend to be both employed if they have just one child. At the same time it appears that mothers are more likely of a lower age (under 23 years) at the birth of the first child, if there are two or more children living in the household. Yet the data material shows clearly, that in these cases a higher proportion of mothers only dispose of a lower educational status and professional position. Higher educational level and professional position is clearly related to having just one child in the family.

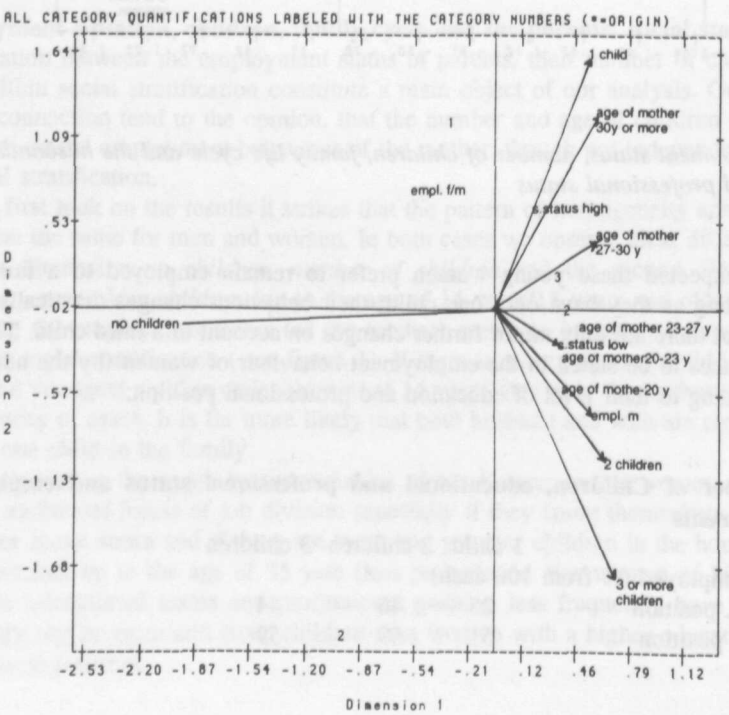

Figure. 2 *Number of children, employment situation, educational/professional status and age of the mother at the birth of the first child*

Attitudes as regards combining family work and employment

Because educational status, income, number of children and employment status were interconnected, it seemed important to find out whether these effects are equally distributed over the family cycle and if they were correlated with the social strata. The analysis therefore includes the attitudes of the persons interviewed and the employment in different situations of family cycle - the youngest child under 6 years of age, respectively at school age level - and regarding the income level (weighted per-capita-income). These variables were added to the items such as the number of children and educational status/professional position.

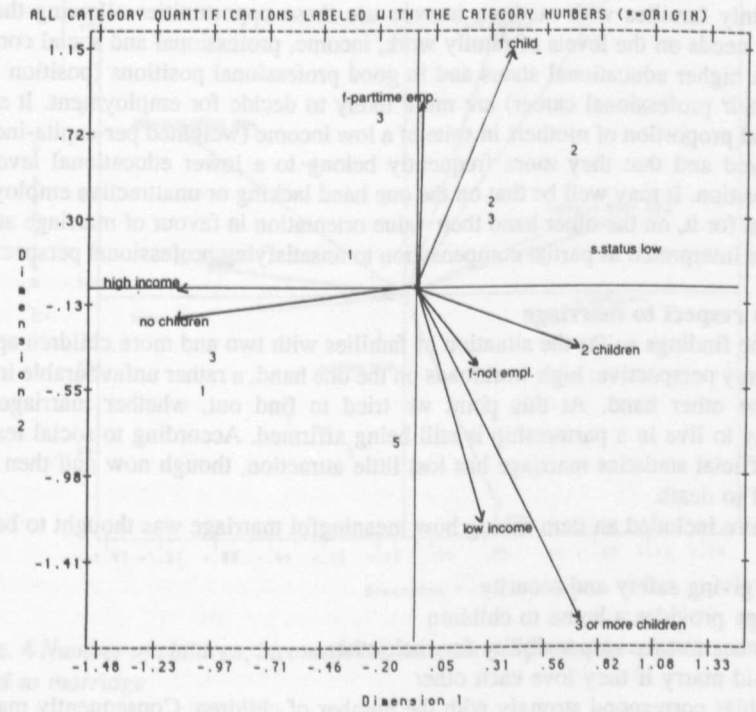

Figure. 3 *Number of children, income level, educational/professional status and attitudes with regard to employment*

Parents with two and more children and a low income are more likely to think that mothers should abstain from employment, if there is a child at the age under 6 years or at school age level in the family; more frequently this is the case with parents of a lower educational status and professional position. That mothers should be parttime employed is thought of predominantly by parents with a higher income and higher education and professional position having one child only.

Answers given by mothers interviewed do not differ much from those of men interviewed. They too state clearly that mothers having a second child should not be employed, while employment (of the mother) seems commonly accepted when there is one child only to be looked after. It is interesting to state in this context that the level of social stratification plays an unexpected role. While predominantly mothers with higher education think that parttime employment is a normal arrangement in the situation with one child, a somewhat different opinion can be stated regarding men only interviewed.

The relatively high proportion of married women not employed having a medium or high household income, with two and more children, finds some explanation by the fact of existing taxation politics (tax reduction for the husbands' income due to the splitting taxation). Above that, there exists the possibility of casual work or minor employment without tax liability. It seems that mainly families with medium income use these opportunities allowing them to cope with their needs on the levels of family work, income, professional and social contacts. Mothers with a higher educational status and in good professional positions (position at the beginning of their professional career) are more likely to decide for employment. It strikes that a substantial proportion of mothers in spite of a low income (weighted per-capita-income) are not employed and that they more frequently belong to a lower educational level and professional position. It may well be that on the one hand lacking or unattractive employment chances account for it, on the other hand their value orientation in favour of marriage and the family might be interpreted as partial compensation to unsatisfying professional perspectives.

Attitudes with respect to marriage

Summing up the findings so far the situation of families with two and more children appears in a rather gloomy perspective: high workloads on the one hand, a rather unfavourable income situation on the other hand. At this point we tried to find out, whether marriage as a meaningful way to live in a partnership is still being affirmed. According to social research findings and official statistics marriage has lost little attraction, though now and then it has been sentenced to death.

The questionnaire included an item asking how meaningful marriage was thought to be: "Do you think that

- marriage is giving safety and security
- only marriage provides a home to children
- marriage means to take responsibility for each other
- people should marry if they love each other

All these variables correspond strongly with the number of children. Consequently marriage appears more meaningful if there are more children in the family. Official statistics confirm the findings stating a decreasing divorce rate with a higher number of children.

There seem (cf. figure 4) to exist three main positions of attitudes as regards marriage. The first type is directly connected with the fact, that people interviewed so far had no children. They would not regard marriage as highly meaningful. The second type refers to the situation of parents having two or more children. They almost unanimously show high appreciation for marriage. There is a third position in between; this position is related to people of higher educational status/professional position having mainly one child or belonging to the empty nest family cycle.

Parents with a lower educational status/professional position having two and more children are found to bear the highest appreciation for marriage.

Attitudes regarding educational targets

We finally want to have a look at different attitudes towards educational targets such as self reliance, sense of duty, individuality and cooperation. Again we presume to find a close connection between the number of children in families and the educational status/professional position of parents and that educational attitudes would differ according to family cycles. We also presume that educational targets would differ according to sex.

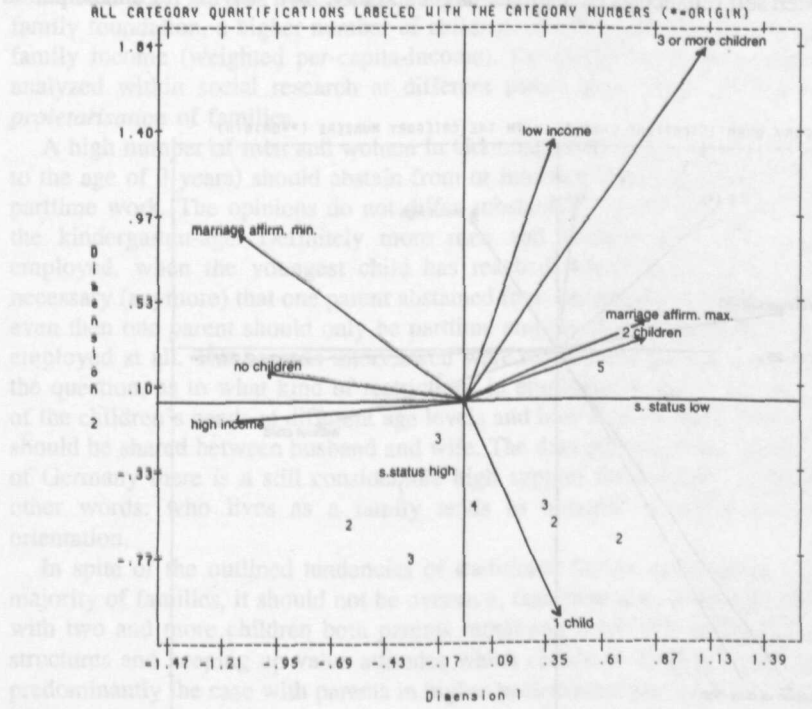

Figure. 4 *Number of children, income level, educational/professional status and attitudes with regard to marriage*

The educational target *sense of duty* (see figure 5) appeared to be of minor importance, if the persons interviewed had no child so far. For the older generation of parents in the empty nest situation i. e. when the grown up children have left home, a sense of duty is (has been) of rather high importance.

Parents with children under the age of 15 years differ in their appreciation regarding this educational target depending on their educational level: only every second of the persons interviewed with higher education thinks of this educational target as being important but confirmation increases up to 90% along with a lower educational level of the parents. Referring to men only interviewed we get a still clearer connection according to the educational level.

Self reliance as educational target is again hold to be differently important depending on the situation of parents in different stages of the family cycle: Persons having no children so far would appreciate less strongly of this target. A high percentage of parents with children under school age level - first of all mothers with higher educational status - show strong appreciation for self reliance. It could take surprise that men are insisting far less on this target. It might on the one hand be that education is thought to be women's business especially if they have a higher educational status; on the other hand women might see a connection between self reliance as educational target and their own striving for emancipation and equal rights.

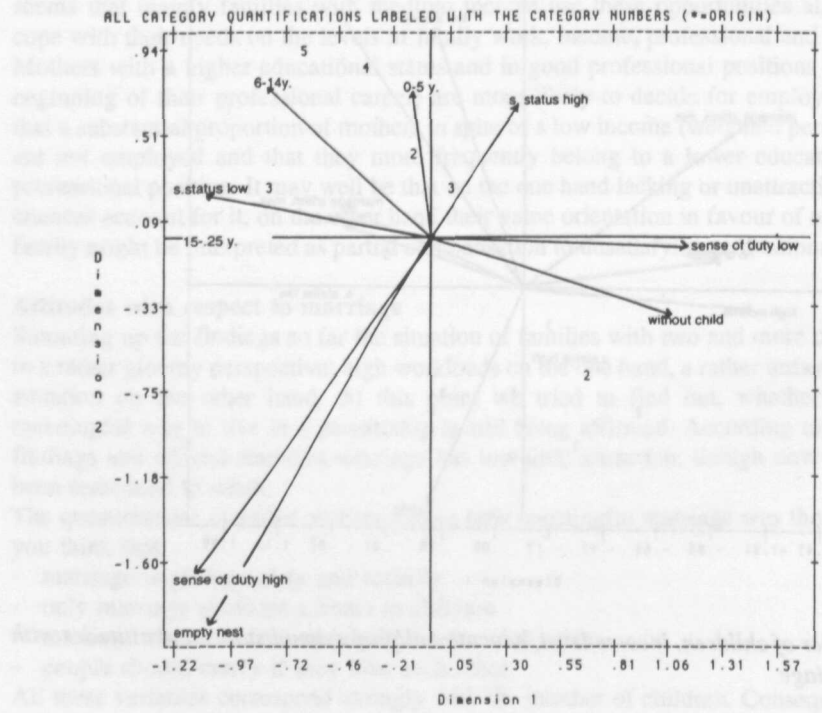

Figure. 5 *Family cycle, educational/professional status and attitudes with regard to the educational target "sense of duty"*

In general though there appears to be a clear connection as far as parents with a higher educational level strongly insist on self reliance when in the situation of a family cycle with small children (under school age level); a sense of duty and even cooperation (thought to combine individualism and cooperative attitude) appear to be educational targets of higher importance for parents of lower educational status/professional position having children at the school age level.

DISCUSSION

The analysis has clearly confirmed the assumption that more traditional family forms are practised, if families have two or more children. As the data used for the analysis derive from a cross-sectional survey only, the results can only be interpreted as indicators. We will be able to verify these findings within the panel study which is in process just now.

Special implications (of high political importance) result from interconnections between conditions such as low educational status/professional position, an early point of time of family foundation, a higher number of children, employment of the husband only and a low family income (weighted per-capita-income). Developments of this kind which are being analyzed within social research at different places have been labelled by the slogan of *proletarisation* of families.

A high number of men and women in Germany think that mothers of young children (up to the age of 3 years) should abstain from or interrupt their employment or be employed in parttime work. The opinions do not differ substantially given the situation with children at the kindergarten-age. Definitely more men and women think that mothers should be employed, when the youngest child has reached school age, respectively that it is not necessary (anymore) that one parent abstained from employment. Though 54% still think that even then one parent should only be parttime employed, 42% that one parent should not be employed at all. The persons interviewed were expected to give a corresponding answer to the question, as to what kind of restrictions in employment would be appropriate in favour of the children's needs at different age levels and how roles in family work and employment should be shared between husband and wife. The data give evidence that in the old countries of Germany there is a still considerable high support for a model of family child care; in other words: who lives as a family tends to organize it along with traditional value orientation.

In spite of the outlined tendencies of traditional family orientations as practised by the majority of families, it should not be overseen, that there also exists a percentage of families with two and more children both parents remaining employed and families practising time structures and keeping up value attitudes which cannot be hold as being traditional. This is predominantly the case with parents in higher professional positions and with higher income. While the family type *two and more children* goes more according to the traditional family model, families with *no children or one child* tend to practise the organizational model: employment of both parents, (medium or) a later point of time of family foundation, a more modern type of value attitudes.

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CHILDREARING AND CHILDREARING SUPPORT: THE PERSPECTIVE OF PROFESSIONALS

C.S. Zwiep

The childrearing support movement tries to support and help educators to avoid extensive assistance in the future. Childrearing support aims to help educators with childrearing by providing them, among other things, with information and advice (Hermanns, 1992, p.21).

For the Dutch government prevention is the main reason for a policy of childrearing support (Ministry of Welfare, Health and Cultural Affairs, 1991b, p.24). This childrearing support should be different from the traditional youth assistance because the parents are supported, instead of the children. Furthermore, the offer should be geared to clients' demands, it should be consistent, recognizable, accessible and have a short-term character (Ministry of Welfare, Health and Cultural Affairs 1991a, p.3). People who work in this childrearing support should not be patronizing to parents or taking over the education.

Several programmes for childrearing support are based on the policy of the Dutch government. One of them is *StOp* (*Steunpunt voor Opvoeding*, centres for childrearing support initiated in several cities in Holland). The aim of *StOp* is to support parents and other educators of children aged 0-12 in solving educational problems and issues by providing them with the necessary information, advice, indications and minor assistance. The *StOp's* are a concerted initiative of youth care and mental welfare institutions.

Evaluation of the process and effect is now taking place within three *StOp's*. The initiating process of the *StOp's* presently existing in Zaandam, Harderwijk and Maastricht has been studied. Because *StOp* is a new initiative to support educators, the ideas of professionals about childrearing and about how to support clients are very important. They are the ones that can make theories of supporting clients concrete. That is why a inventory round of interviews has been held with 23 *StOp* professionals. The questions in this study are the following: (1) *What kind of ideas do StOp professionals have about childrearing?* (2) *Are these ideas reflected in their work and activities?* (3) *What kind of ideas do professionals have about their relationship with their clients?*

METHOD

The 23 *StOp* professionals work for several collaborating youth-care institutions. For *StOp* they operate respectively on the a policy, an organizational or a clients support level. These professionals are experienced and involved with *StOp* from the start.

Open semi-structured questions are used in this study. The interviews contains 19 open questions. Part of the interviews were used for a broader evaluation research. An account of these findings can be found in another report (Zwiep, 1994).

Heyting and Mulder (1994) developed an instrument for analyzing educational theories. In this study we used this instrument to analyze ideas about childrearing. Heyting and Mulder distinguish the following elements: *educational means, ideals and conditions*. *Ideals* are ideas regarding the aims of education. Such an aim could be for instance teaching a child how to become a critical adult. Pedagogical *means* can be defined as relevant measures taken in order to achieve certain educational ideals. Such means could be, for instance, punishing or

rewarding a child for it's behaviour, but also giving children formal education. There are various *conditions* or circumstances which are considered relevant for a favourable educational climate such as offering a child affection and a sense of security. The research questions about childrearing were classified according to the above mentioned elements.

All interviews were typed. The respondents' answers were marked by keywords, which were then tallied (The interrater reliability of one item is Cohen's Kappa .73).

RESULTS

Generally, childrearing *StOp* professionals defined childrearing as the process of growth towards maturity, in which 'guiding the child and letting him/her go' is considered very important. One of the professionals says: "Childrearing is the very difficult combined action of time, child, environment and the child's family." This definition is given in more detailed terms by another respondent: "Childrearing is a very broad term: it covers everything that has to do with bringing up children and youngsters aged 0-21. But it also refers to the way in which parents feel, and to the various bottlenecks they encounter in this process. Both parents and children should feel at ease in this process, there is nothing wrong about it if they have periodical conflicts, but none of them should become a victim in these conflicts."

According to *StOp* professionals, to educate means to bring a child up and, further, help it to become independent. That is, have a comprehensive view of the various consequences of its behaviour and be able to make its own choices. A recurring element in this process is the respect that parents should have for their children. A professional: "Childrearing means to set the child free, a child is not one's property, it has the right to have good parents and a balanced family relationship."

The question 'What is childrearing' can not be easily answered in concrete definitions. Further, we asked professionals about their educational means, ideals and conditions.

EDUCATIONAL IDEALS

Table 1 shows that the ideals *autonomy, good functioning, well-being and stability* are often mentioned. Each professional could mention more then one ideal, on average, two were found.

Table 1. Educational ideals, frequency classification (n=23)

autonomy	11
good functioning	8
well-being and stability	8
maturity	7
socialization	5
transference of values & standards	4
being able to make choices	4
personal development	2

The *autonomy* of a person is described as the independent and well-balanced adult. One of the professionals answered as follows: "I find that the goal of childrearing is to help children

stand firm on their feet, learn how to make their own choices, be satisfied with their lives, be socially active; children should be free to do this in their own way if only they are able to see the consequences of their behaviour through the response they get from the outside."

The ideal defined as *maturity* of a person was generally not further described. One or two professionals characterize it as 'people that feel at ease in their work and relations', but it has also been defined as being able to assume responsibilities. Professionals mentioned the process of *socialization* and the *transference of values and standards* as short term ideals. During the process of growing towards maturity, the child learns to *make choices* and adults should stimulate its *personal development.*

Most of these ideals are aimed at the child's future: to be an independent adult. They are described in common and abstract definitions.

EDUCATIONAL MEANS

Counselling is essential in childrearing, according to ten professionals (see Table 2). For them counselling is providing children with the necessary information and helping them to think for themselves. A professional: "It means teaching them how to discern between dangerous and safe actions."

Another of the educational means is the *communication* between parent and child. A professional mentioned that sometimes this can be rather difficult, for instance when parents have a headache. One professional defined the importance of listening as follows: "You are trying to follow the child's ideas, coaching it and stimulating the autonomy, showing the child how to find answers to the questions it is confronted with, and how one should adjust standards and values." Through a good *educational relationship* parents set an example for their children, they have a 'modelling' function, according to seven *StOp* professionals.

Table 2. Educational means, frequency classification (n=23)

counselling	10
listening & talking	8
educational relationship	7
supporting & guiding	5
punishing & rewarding	5
bargaining	4
stimulation	2
schooling	1
intuition	1

Five professionals consider *punishing and rewarding* a good educational means: "I think that it is good for every child to experience the limits one should not pass. Applying sanctions as a consequence of a child's deeds, certainly for small children, and with a short-term character: 'Go out into the corridor and remain there until you have cooled down'. But I prefer positive sanctions, paying attention and rewarding a child when it does something good or nice."

Another means is *supporting and guiding* children in their personal development. Professionals describe it as setting conditions, showing the child the consequences of it's

actions and establishing the limits. A professional: "We are talking here about a process in which parents begin to release the child."

Bargaining is a means to learn children how to make choices adjusted to their age and developmental stage. In this process of growth towards maturity *stimulation* and *schooling* were also mentioned. One professional mentioned that *intuition* of the parent was essential.

In summary, each *StOp* professional mentioned on average 1.8 means. They have specific ideas about educational means, which are described in terms refering to childrearing.

EDUCATIONAL CONDITIONS

On average each *StOp* professional mentioned 1.3 conditions. They described several conditions (see Table 3) for providing the child with an optimal educational climate and used abstract, emotional and some concrete concepts. The following quotation offers a general illustration: "There should not be only fun and pleasure in a child's life. Children and adults should be equal, sometimes the parent has to come first, but this should always go in harmony. Parents are always responsible, although they have the right to some peace and quietness. This can be easily disturbed, when one makes an appeal on your sense of responsibility."

Table 3. Conditions frequency classification (n=23)

providing a distinct structure	10
offering a sense of security	5
paying attention	5
giving love & affection	4
respecting the autonomy & unicity	3
giving chances	2
physical care	2
starting from the developmental stage	1

According to ten professionals, a child needs a clear *distinct structure*. This term is a very common one and refers to the regularity in the child's life, learning to deal with certain rules and the consequences when breaching them. As one of them indicates, this should be achieved by "... remaining consequent and affectionate, creating a serene, well-balanced climate." Offering children a *sense of security* is also considered important by five professionals. "When a child grows up in an unstable family it will never be able to find it's own place. Therefore, the more peace and quietness within a family, the better for the child." Further, professionals attach much importance to *paying attention*, giving *love and affection* to the child and have *respect* for the autonomy and unicity of the child. Giving a child enough *chances* for personal development implies in fact all other categories, according to one professional: "You can do that by offering a child the five principal ingredients: a sense of security, structure, care, schooling, attention and affection". One professional mentioned *physical care* as an important condition. Another finds that it is important to consider the *child's age*: "by playing along with the different developmental stages, doing some evaluation, examining the bottlenecks and showing some flexibility in dealing with them without having to go over one's own limits (as a parent); sometimes it is the parent that comes first and sometimes the child."

In summary, the emphasis lays on several psycho-social conditions, in order to create a climate for an optimal development.

EDUCATIONAL IDEAS IN REAL PRACTICE

Fourteen professionals out the 23 said that their ideas about childrearing were reflected in their work. One professional: "The discussions that I have with my clients are based on one's own ideas, stimulating certain skills, offering some structure. One should see children as individuals that have their own say and rights, and, in principle, as worthy interlocutors."

An important element that is reflected in the work of professionals is the respect for children and adults. One professional defines this as follows: "In my work I show respect for the unicity and autonomy of the child. You do not see your client as a 'bunch of defects' but you try to discuss and shed some light on the positive aspects, and you do this with children too. A child might be very bad at mathematics, for instance, but then again he might be very good at drawing and painting. Then you should break out of the negative spiral."

The professionals' experience as parents also plays a very important role: "Because I bring up children myself, I am always open for other parents' problems. I offer them advice based on my own experience, I approach them carefully (...), I try to find solutions together with them, eventually by guiding them in finding these solutions." Previous working experience also plays a role: "The keywords like providing a clear structure and guidance, offering it a sense of security, setting the limits, are certainly reflected in my work, sometimes even more intensively: what a child needs in youth care is precisely a sense of security and safety."

Several professionals have some remarks: "Ideas about education are always reflected in my work. I teach people how to talk and how to make arrangements with each other, how to encourage the child's participation in it's own education. Still, I regard this differently, depending on the parent I'm dealing with." Another professional also indicates: "You have underlined that people have their own way of childrearing and their own particular aims. In the discussions I have with my clients I try to make this very clear for them: that they do not do it 'wrongly'. My own values and standards do indeed play a role, but I try to minimize them in dealing with my clients."

Several keywords among those mentioned before can be traced back: respect, acceptance and the importance of a good interaction between parents and children. Parents should offer their children a distinct structure and a sense of security they should accept their children's wishes, but they should try to fit these in the family structure by means of consultations, according to the professionals. But how are these ideas reflected in the work of professionals?

SUPPORT

According to professionals, giving assistance to one's clients with regard to various educational questions consists of the following characteristics (see table 4).

Generally, professionals regard the kind of assistance *StOp's* offer to their clients as a form of support. One of the professionals expresses this as follows: "When parents feel at ease, the child is doing all right too. Parents should learn how to recognize the needs of their child and separate their own problems from their child's functioning. A parent can always bring and offer something positive and you can encourage the parent by realizing that."

Table 4. Assistance frequency classification (n=23)

providing an overview & insight	8
practical advice	7
helping reduce the problems	6
improving clients' skills	4
stimulating the parent-child interaction	3
individual differences by client	2

On average the professionals mentioned 1.3 kinds of assistance. Table 4 shows that for eight professionals *providing an overview* on the various problems is an important element in their work of assistance. Seven of them intend to give *practical advice*: "First you should discuss the problem openly, and then you should search the point of departure: what has already been done about the problem? Then you should draw up a plan: together with the parents you should try to solve the problem, and in this way you can help them (learn how to) recover their self-confidence." Helping *reduce the problems* and *improving the client's skills* is also mentioned. According to one of the professionals this means: "Trying to break out of the negative spiral by stimulating positive aspects in the child and removing the idea of the 'ideal family'. Many parents think that things should go this way or another: you teach them how to adapt to the situation." Offering clients insight into the *interaction* and achieving a collaboration between parent and child is also mentioned. The following quotation illustrates this: "You should let parents have a good look at their child and say what they want from him/her and what they don't, and then see what is really feasible. How do they deal with all that; the child is more important than the parents because he/she is helpless. Therefore parents have to intervene by positively rewarding the child or by ignoring it's behaviour."

Much assistance offered by *StOp's* differs from one individual to the other or depends on expectations and possibilities of the client. A professional: "When a four-year old child does not speak, you try to discover the reasons, of course. Are there any physical disorders, or are there perhaps problems in the child's family? First you have to examine all these aspects. The child's parents conclude only too fast that 'my child is no good', in which case you should ask them what their problem is, are they influenced in their conclusion by any reactions from the outside, or do they personally find it annoying that their child does not speak."

Summarizing, the support of clients aims to guide and improve their skills, to make them independent of the childrearing support and able to solve their own problems.

THE RELATIONSHIP BETWEEN CLIENTS AND PROFESSIONALS

StOp's intend to become easily accessible social service. The offer must be geared to clients' demands. Professionals intend to start from the idea that educators are competent to solve their own problems; they just need some support for a while. In this respect, the assistance offered by *StOp's* could be based on the principle of equality between clients and professionals. What do professionals think about their relationship with their clients?

The relationship between clients and professionals was characterized by nineteen professionals as being an equal one. But there were some marginal comments. One of them expresses it as follows: "There cannot be any equality here because you are the competent person in this relationship and clients feel that. Although I do not consider myself as being

competent in all the situations, still you have a number of specific skills, that's a fact. But in a certain way, there is, indeed, some equality: you 'think together' with your client (...) by going deeply into it's problems."

According to nineteen professionals, the difference in knowledge, this inequality, is also counterbalanced by the fact the client has the option to 'take it or leave it'. There is always a difference between somebody that has the necessary knowledge, and skills and a client that needs help and assistance. Basically, this does not alter the idea of equality between people, according to several professionals. As one of them expresses: "I think that we are talking about equal positions here, one of the interlocutors has studied these matters and the other one did not, that's all there is to it. Asking for money could be a good idea, because then it looks more like a kind of exchange, in which you pay for what you have 'bought'."

Equality in the relationship between clients and professionals appears in the respect one has for one's clients. Clients should be taken seriously, and given the feeling that they can always come here with their problems. A professional: "You should address them warmly, show some concern and you should not take a normative attitude. You should respect the unicity of your clients. And you should be careful not to take the position of 'super parent', as this could be a pitfall." Another professional also indicates this aspect: "Parents are able to educate their children and you can indeed steer them, but finally they have to do it themselves. Yes, we are indeed talking about equal positions, and this makes the strength of this relationship, I think. In this light you should address the parents as follows: we are both educators, only I know a little bit more about these things' and 'educating is not at all easy, but I have some tips for you'."

Improving clients' skills is regarded as the most important element of the support. Not only offer advice but see to it that people become stronger: "You should not just lead them by the hand, but you should know how to render yourself unnecessary. This is what *StOp* is all about. For instance, if a client comes here with a sleeping problem, you deal with it in such a way that the child will learn to solve an eating problem the latter by means of analogy."

Three professionals consider the relation with their clients as unequal because one of the parties has the 'know-how' and overview. A professional expresses this as follows: "A client will never see you as an equal partner, as you are called in for your special knowledge. But it is you, the professional, who tries to do it from an equal position. We try not to fall in the pitfall of direct recommendations, and we lay the emphasis on support: helping people build some abilities for solving their own problems."

Some ideas concerning professionals' attempts to make this situation more equal are mentioned as consultations with the clients. A professional: "You try to find a solution together, you must respect the parents. In principle, we are equal partners. At the very most I have more knowledge, but as persons we are equal. Only, in this situation there is here a learning aspect for my clients. In consultation with them I make a plan in order to solve the problem."

In summary the professionals aim for an equal relationship with respect for the clients wishes and expectations. The choice for a specific form of assistance lies with the client.

CONCLUDING REMARKS

What kind of ideas do professionals have about childrearing? Are these ideas reflected in their work? And what do they think about the relationship they have with their clients? Based on the above-mentioned findings we can sketch the following picture.

Childrearing is often defined as the process of growth towards maturity, in which guiding and respecting the child are essential elements. Remarkable is the fact that people did not seem to have a ready-made answer to this question. Only a few could directly mention educational ideals and means. Most of the professionals described these elements in abstract terms. All ideals are aimed at the child's future, described in common and abstract definitions. The means are described in terms that can also be used by parents during the process of childrearing. The emphasis lays on several psycho-social conditions.

There is a tendency showing that the professionals' perspective on childrearing has an influence on the work situation. Their experience as parents as well as professionals plays a role in their work. The central catchwords in their work are: stimulating a good interaction between parents and children, showing respect for one's clients, teaching parents how to offer their children a distinct structure and a sense of security.

According to *StOp* professionals, offering support to one's clients with regard to various childrearing questions is aimed at providing an overview and insight into the problems, giving practical advice and helping reduce the problems. Professionals generally want to increase the degree of autonomy and independence in their clients. The relationship between professionals and clients has been characterized as an equal one by the majority of the professionals. Only a few professionals consider that there is an unequal relationship, caused by the difference in knowledge. In order to make this relationship as equal as possible, several professionals do their work in consultation with their client.

Based on the findings in this inventory study, we can say these *StOp's* professionals do have concrete ideas about childrearing. These ideas are being practised in there work for the childrearing support programme. This work is mostly characterized by respect for the autonomy of children and clients, equality of the relationship between clients and professionals and avoiding a patronizing attitude. The previous themes in this study will be discussed again in the second phase of the broader evaluation research.

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DIFFERENTIAL EXPERIENCES WITHIN THE FAMILY DURING ADOLESCENCE: CONSISTENCIES OF RELATIONSHIP ASSESSMENTS AND CONCRETE COMMUNICATION BEHAVIORS OVER TIME

Kurt Kreppner

The purpose of this article is to present some of the most salient results of a longitudinal family project in which *differential* aspects of family influences on developmental courses in early adolescence were studied, particularly family-specific communication patterns and their possible impact on individual development. The family as the smallest unit of society has been characterized by a multitude of both economical and sociological, but rarely by interactional features. However, as we have learned from family-developmental psychology, families cannot be considered as stable units. They change, as this has been elaborated by Reuben Hill and Evelyn Duvall (1948) or Joan Aldous (1978) in their conceptualization of families as developing units. Under a family-developmental perspective, the members of a family have to accomplish different family-developmental tasks according to the changing needs and skills of both adults and children within the family. Thus, every family has to adapt to new and changing conditions and has to renegotiate extant relationship patterns during times of transitions. Changes occur either by growth of the family system, when, for example, a new child is born and has to be integrated in the extant well-balanced system or when one member, such as the child, runs through a major developmental challenge as is the case during the transition from childhood to adolescence.

Ernest W. Burgess published a revolutionary thought in March 1926 in the sociological journal "THE FAMILY", when he wrote in his article with the promising title "The family as a unity of interacting personalities" the following sentences: "...I found peculiarly revealing a classification of families by the pattern of personal relationships between husbands and wife and parents and children...The study of patterns of personal relationships in family life led directly to the conception of the family as unity of interacting persons. By a unity of interacting personalities is meant a living, changing, growing thing. I was about to call it a superpersonality." (Burgess, 1926, p.4-5).

Although no dynamic systems approach existed at this time, during the twenties of this century, the idea to classify families with regard to their patterns of interaction and not according to sociological or economic criteria appeared exceptional. The notion of the family as the unit of interacting personalities gave way to a new and *individual-centered* view and formulated a new focus: Interaction- and communication patterns as the *essential* format which constitutes the distance regulation and well-being patterns of the single family members, a format well suited to be used as a kind of "finger print" by which single family types can be identified.

In other words, the orientation to distinguish patterns of families went from the *outside* (ethnic types, roles, norms, economic hardship etc.) to the *inside* (i.e. communication characteristics and interaction patterns), it moved from content-related, economic or sociological identification marks to relation- and communication-specific characteristics. Under this perspective, the family unit was considered more as a dynamic than a static concept and the role of the individual family members as active creators of their family type came more to the fore.

To link this shift in thinking about the family a little to the history of thought about the interaction between man's environmental conditions - as is the family - and man's activity to create a fitting environment, attention is directed to William Stern (1918a, b, c), who underlined a personalistic perspective in psychology. As Burgess has introduced the inner dynamic of the family as a crucial aspect for describing a family's characteristics, William Stern, the German psychologist has introduced two concepts which in the one or the other form are still present in today's discussion of person-environment interchange. One is the concept of *"convergence"* by which Stern describes the essential conflux of an individual's "endowment" or disposition and the "environment" in the individual when he or she becomes a "person" characterized as a "unitas multiplex", a unique and multifaceted personality.The second concept is a new approach to define a person's relevant environment as a "*personal space*". Stern emphasized the activity of the individual which is forming its environment but is also formed by it at the same time, creating the person as a goal-directed but flexible entity. This interactive access to the individual was formulated as early as 1918 and meant - after fruitless fights among elementarists and wholists- a return to a personality concept in which the dynamic exchange between genetic endowment (dispositions) and environment was an essential part. At his time, Stern challenged the nature-nurture debate by his new approach. Aside from the subjective (person-related) and objective (environment-related) schism which he called a two-pronged approach, he suggested a three-pronged approach with focus on the process of interaction between person and environment: "Objective events can only become part of an individual's experience by the fact that they fit into the world in which he or she exists. The relationship we have to explore, therefore, is not two-pronged (objective world, subjective experience) but three-pronged (objective world, world of individual existence, subjective experience). Between the physical stimulus and the experience of perception lies the integral situation of stimulation in which the individual exists. Between the sociological unit "family" and the experience of one's family lies the individual's vital and introceptive connectedness with the family" (Stern, 1935, p. 124, translated by KK).

This aspect of the "gelebte Welt", that is, the world a person is living in, contrasting the "subjective" and "experienced" or "erlebte Welt", which is to be taken as a personal space of the individual as an *interactive unit* linking individual and family development in a new and empirically accessible way. Much later, in the fourties and fifties of this century,, when family researchers began to work with families who had a child in psychiatric treatment and tried to find relevant characteristics responsible for the pathological behavior, a similar move from the outside to the inside of the family occurred. However, the family still played the role of a social address, a label for subcultural belongingness, without much emphasis laid on the interaction and communication patterns in most research dealing with individual development in academic psychology.

Although many attempts in explaining the intricacies of the person-context-exchange process during development pointed to the important role of the family, only very few were successful in *linking individual and relational development in the family.*

How communication patterns regulating and typefying a family's relational network are regostered by the child in terms of cognitive and emotional components, internalized and applied when actively formating the "personal space" in the family, is a topic still largely unexplored. Of specific interest are, aside from the first years of individual development, times of *renegotiations of relationship patterns in the family*, as adolescence.

(1) Hauser and his team at Harvard (e.g. Hauser, Powers, Noam, 1991) analyzed parent-adolescent communication patterns during adolescence, in both normal and pathological

parent-child dyads, using qualitative research methods. The authors characterized the highly generative mechanisms of those patterns as a crucial proximal context for the growing personality of the adolescent and emphasized the microelements of communication which determine the formation of inner representations leading to specific self-images and conflict solution capabilities in the developing adolescent. Elements of parent-child conversations are taken as *markers of relationships* which influence the family members' experience and establish the history of interaction in a family dyad.

(2) Cooper, Grotevant and colleagues (Cooper, Grotevant & Condon, 1983; Grotevant & Cooper, 1985), asked whether such elements of dyadic exchanges as modes of assertion, acknowledgement, mutuality, disagreement, or irrelevant comments have impact on ego development. The authors' coding systems for the description of communication patterns within families included, for example, challenging statements, supporting or discouraging remarks, or, in more general terms, enabling or disabling communication patterns such as those described by Hauser and colleagues (Hauser, Powers, Noam, Jacobson, Weiss & Follansbee 1984; Powers, Hauser, Schwartz, Noam, & Jacobson, 1983). The link between identity formation and family communication was highlighted by Grotevant and Cooper's (1986, p. 94) statement that "identity formation is realized in individuated relationships in which differences are freely expressed within a basic context of connectedness."

(3) Judith Smetana and her team applied videotechnique when studying harmony in parent-child interactions in complete and incomplete families (Smetana, Yau, Restrepo, & Braeges 1991). Smetana et al. (1991) applied a coding scheme similar to the one used by Hauser and collaborators. Both schemes cover cognitively and affectively constraining and enabling communication patterns. These patterns are believed to influence adolescents' belief-system of responsibility within the family and, attached to this, a pattern of harmonious or more conflict-generating interaction.

The main focus of the empirical study to be reported here has been to depict a comprehensive picture of the various facets of ego- and family development both with regard to inner representation and to concrete communication behaviors. Changes and consistencies over time were also of major interest. Potential crises with regard to extant relationship patterns during transition from childhood to adolescence have their roots in a growing ability of the youth to see other persons from a more rational and objective basis. Another reason for changes in children's perspective is a growing tendency to realize own ideas and positions even against the parents' protest. The specific ways of communication possibilities, that is, the frame of family communication in which a renegotiation of old and no longer fitting patterns is possible may be crucial for the adolescent's developmental course of identity formation, self esteem, and social competence. In the following study, three major topics were explored: (1) Adolescents' assessments of relationship quality over time. (2) Adolescents' self-esteem measures over time and the association with differential relationship quality. (3) The linking of concrete communication behavior to assessments of relationship quality.

METHOD

Sample

Participating families were selected by advertisements in West Berlin daily newspapers; the target group included families who had at least two children with the oldest child between ten and twelve years of age at the beginning of the study. Intact two-parent families, single parent

families, and step families were included in the sample. The families were visited in their homes every six months during the entire four year period.

The study presents data from sixty seven families that have finished the first four rounds of data collection. During the fifth and the sixth period of data collection, from these 67 families 65 for the fifth and 64 for the sixth data collection remained in the sample. The adolescents' mean age at the first wave was 11.6 years with a SD of 1.0 year. The mothers' age at the beginning of the study was, on average, 37.2 with a SD of 3.8 years. The fathers' average age was 40.3 years with a SD of 4.9 years. Thirty eight of the 67 families were intact two parent families, twenty families were single parent families with mothers having custody and children in contact with their biological fathers. Nine families were step families with a biological mother and a step father. The sample involved thirty-one male and thirty-six female adolescents. The drop-out rate changed the initial numbers to thirty six biological two-parent families and eight step families. Single parent families remained twenty. The ratio between male and female adolescents was 31 male and 33 female adolescents.

Data collection

Families were visited every six months in their homes by a trained graduate student who administered questionnaires and conducted the observations. Questionnaires were administered to both parents and the oldest child. Observations (recorded on videotape) were made of dyadic interactions of the adolescent and, separately, each parent in structured discussion situations. In order to provide comparable interaction situations, mother-child and father-child dyads were asked to discuss statements presented to them on a standardized set of cards.

INSTRUMENTS

For the measurement of relationship quality, the following three scales were constructed (Kreppner & Spiel, 1991): Dependability, Emotional Hesitancy, and Discussion of Critical Issues (see Table 1).

Table 1: Sample Items of All Scales

Dependability	"I can talk really well with him/her about my daily experiences"
Emotional Hesitancy	"Often I would like to give my mom/dad a hug, but I don't do it"
Discussion Critical Issues	"During the last two weeks we had a lot of arguments about how I spend my free time"
Family Satisfaction	"I often talk quite openly to others in the family about my feelings"
Doubts in Achievement	"I am not as successful as I would like to be"
Discontent w. Attractivity	"I am not satisfied with my appearance"
Social Incompetence	I have some problems to win friends"
Other Orientation	"It's important for me that others appreciate what I have done"

The *Dependability Scale* (5 items, 4 point scale) assesses the degree of family functioning, that is, the degree to which parents and children can count on each other in everyday living; the scale was derived from the Family Assessment Measure (FAM) by Skinner, Steinhauer, and Santa Barbara (1983) for a multilevel description of the respondent's role in the family.

The *Emotional Hesitancy Scale* (4 items, 6 point scale) measures perceived emotional ambivalence in the relationship with an other family member. This scale is part of the new instrument which assesses perceptions of self and others within the family (Spiel & Kreppner, 1991). The *Discussion of Critical Issues Scale* (6 items, 3 point scale) assesses the intensity with which the adolescent discusses critical issues with his or her parents. This scale is a shortened version of Robin and Weiss "discussion at home" scale used to distinguish between clinical and non-clinical families. (see Robin & Weiss, 1980).

Table 2: Factor Analyses for Dependability, Emotional Hesitancy, and Discussion of Critical Issues for Adolescent-Mother and Adolescent-Father Pairs (First Wave data, Only the largest loadings for each item are presented)

Scales	Items	Adolescent Mother			Adolescent Father		
		I	II	III	I	II	III
Dependability	1	.52			.72		
	2	.76			.78		
	3	.62			.71		
	4	.78			.48		
	5	.81			.65		
Emotional	1		.65			.43	
Hesitancy	2		.54			.68	
	3		.77			.76	
	4		.69			.63	
Discussion of	1			.57			.73
Critical Issues	2			.36			.36
	3			.55			.61
	4			.76			.79
	5			.37			.71
	6			.49			.60

The three scales were defined using factor analytic methods (see Spiel & Kreppner, 1991). Exploratory factor analyses were computed separately for mothers and fathers. In both analyses, a 3 factor solution suggests independence of the three scales, both for perceptions of relationship with mothers and with fathers. Both solutions explain about 50% of the variance. The solutions were calculated using orthogonal varimax rotation. Table 2 displays the loading pattern for these solutions.

Cronbach alphas for adolescents' perceptions of their mothers and fathers during the first wave were 0.77 and 0.75 for the Dependability Scale, 0.64 and 0.59 for the Hesitancy Scale, and 0.54 and 0.70 for the Discussion Scale. The relatively low coefficients for fathers in the Emotional Hesitancy Scale and for mothers in the Discussion of Critical Issues Scale were taken as indicators of adolescents' inconsistent conception of these aspects at this age.

Self-Concept Measurements.

Family well-being of adolescents was measured by a set of six items from the self version of the FAM III questionnaire, and four different aspects of adolescents' perceived self reliance were measured by a questionnaire constructed by Kreppner and Spiel (1992) focusing on the degree of negative perception of *social competence, achievement orientation, own attractivity, and the degree of other orientation*. (Each scale had five items, for example items see Table

1) The scales were developed after a series of preliminary analyses with a number of adolescents' scales . In a cross-sectional sample (N=181) of 10 to 15 year old adolescents, these scales proved to show good reliability and consistency indicators. Cronbach alphas for the relationship assessment scales varied between .51 and .92 across waves, and for the self and family well-being scales between 52 and 81.

Observation methods

In families with small children parent-infant interactions are structured by schedules for feeding, changing diapers, and bathing. No such standard routines exist in families with early adolescent children. Therefore, comparisons cannot rely on unstructured observational procedures as in early childhood and sturctured situations had to be generated in order to create comparability across families. Discussion situations between parents and their adolescent children were produced by presenting a series of statements printed on cards to parent-children dyads[1]. Each dyad had to discuss a number of stimulus cards with statements such as "We are planning an outing for next weekend together" or "Some in the family do not clean up their room as they should." The number of cards given in the different waves differed somewhat between the first and the other waves. During the first wave, eleven cards were given in each parent-child dyad, whereas during the fourth and sixth wave each dyad had to discuss five cards. Each topic on a card was discussed for about two minutes.

Categorization and Coding Procedures of Discussion Behavior

The categories used to describe the discussions had been specified after a series of pilot observations. The condensed coding scheme devised for this study allows one to simultaneously code various aspects in every dyadic discussion. The discussion of each card was coded in regard to a *formal* aspect, who takes up the card, three *communication* aspects, one of which was a general description of the relationship (hierarchy), the other two person-specific aspects of formats of communication and interaction and measured separately for parent and child in the dyad , and finally a *nonverbal* aspect of communication, degree of closeness while discussing, again scored separately for each individual. (for the different categories per dimension see Table 3).

Four trained coders processed the videotapes; they were blind with regard to families' social background or other characteristics such as family status. Coders scored the cards on an event basis. Each discussion following the reading of a card was taken as one event. Coding proceeded dyad-wise, that is, for each dyad all cards were scored before coders moved on to the next dyad. This procedure was selected after a number of other attempts had been made in which events had been randomized. This procedure proved to be rather inefficient for it increased the number of instances in which coders misinterpreted utterances or gestures. However, events within a dyad were randomized. After having coded all events in, for example, a mother-adolescent dyad, coders went on to another mother-adolescent or father-adolescent discussion series in another family, but never to the father-adolescent discussion of the same family.

[1]Copies of the cards can be obtained upon request from the first author.

Table 3: Coding Variables for Card Discussions

Formal Aspects of Communication	
Who Picked up Card	[parent; child; nobody]
Interaction Aspects of Communication	
Hierarchy	[egalitarian; long leach; hierarchical]
Communication Style	[matter-of-factly; attention seeking; teaching;negotiating]
Interaction Style	[integrative; competitive; dominant; submissive]
Nonverbal Aspects	
Closeness	[very little; little; high; very high]

Reliabilities were obtained by computing kappa coefficients for two raters who had, after being trained, coded all categories for each event independently of each other. Parallel ratings of about 10 to 15 percent of all events served as a first basis for the reliability check. After six months, the reliability check was repeated. Kappa's ranged from .71 to .96, indicating a sufficient reliability.

RESULTS

Analysis of variance for first wave data

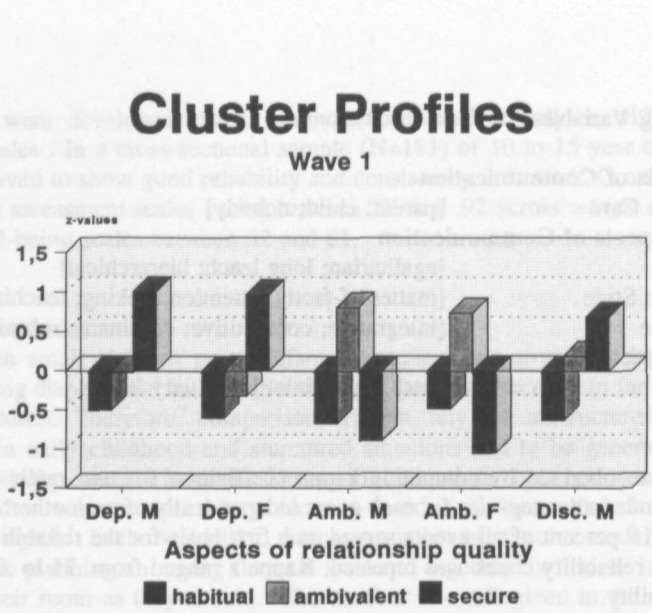
A series of 2 x 2 x 2 fixed effect ANOVAs were calculated to investigate influences of Gender, Family Structure (Two Parent and Single Parent (Mother) Family)[1], and Age (below vs. above 11 years and 6 months) on adolescents' perceptions of family communication during the first wave of data collection. Emotional Hesitancy with both mother and father, Dependability with mother, and Discussion of Critical Issues showed no variation that was statistically significantly dependent on the three factors. Only perceived Father Dependability showed an interaction between gender and family structure ($F = 4.64$; $df = 1$; $p = .035$). Single parent girls (with contact with fathers) perceived their fathers as less dependable (M = 12.92) than girls in two-parent families (M = 14.61). For boys the trend was the other way round: Boys from single mother families perceived their fathers (with whom they had regularly contact) as more dependable (M = 16.71) than boys from two-parent families (M = 14.63).

Cluster analyses

The adolescents' ratings of their parents' dependability and emotional hesitancy with mother and father, and the adolescents' discussion of critical issues with mother were used to calculate a three cluster solution (Ward, 1963). Change in R^2 was used to decide on the number of clusters.

Variable profiles for the three clusters. The profiles of the clusters in the variables used to form the clusters appear in Figure 1.

[1]As no differences between biological and step familes were found in a one-way analysis of variance, the originally three categories (biological two-parent families, step-parent families, and single parent families) were collapsed to two, two-parent and single parent families.



Cluster Habitual/Routine (23 families) shows a profile with average scores to slightly negative deviations for Dependability; no Hesitancy in emotional relationships with both parents; and negative deviations in the frequency of Discussion of Critical Issues. The characteristic of this cluster can be labelled as *Routine Dependability and Habitual Security* of adolescents in families with *stable relationships but low communication potential*, that is, lack of negotiation of critical issues.

Cluster Ambivalent/Hesitant (32 families) displays a very different profile: High positive deviations from average are found for the scale Emotional Hesitancy with both mother and father. Dependability is perceived as average for both mothers and fathers. Discussion of Critical Issues is also perceived as within average range. The characteristic of this large group of adolescents is the high degree of *emotional hesitancy* and *uncertainty and ambivalence* in emotional relationships with both parents.

Cluster Secure/Confident (12 families) has a profile characterized by positive deviations from average for perceived Dependability of both parents. Emotional Hesitancy deviates to the negative side, also for both parents. Frequency of Discussion of Critical Issues deviates slightly to the positive side. Adolescents in this cluster perceive relationships with their parents as *secure, positive and emotionally confident with high communication potential.*

When means of the relationship variables are regarded over time, consistency of judgments according to the cluster membership is quite obvious in both dependability and emotional hesitancy but not for discussion of critical issues.

Hierarchical regressions

Hierarchical regression analyses were conducted in order to assess the predictive power of cluster membership during the first wave for later periods. These analyses were carried out for the fourth and sixth wave with a first step taking gender, age of adolescents within a period, and family status as a set of independent variables, and cluster membership during the first wave (two contrast variables, CL 3-12 and CL 2-13 were formed) as second set of independent variables for the second step to predict specific assessment patterns during the two later periods. As results show, three of the five dependent variables were still predictable

in the fourth and sixth wave by cluster membership. ΔR^2 indicates the increment of R^2 after adding clustermembership in the second step.

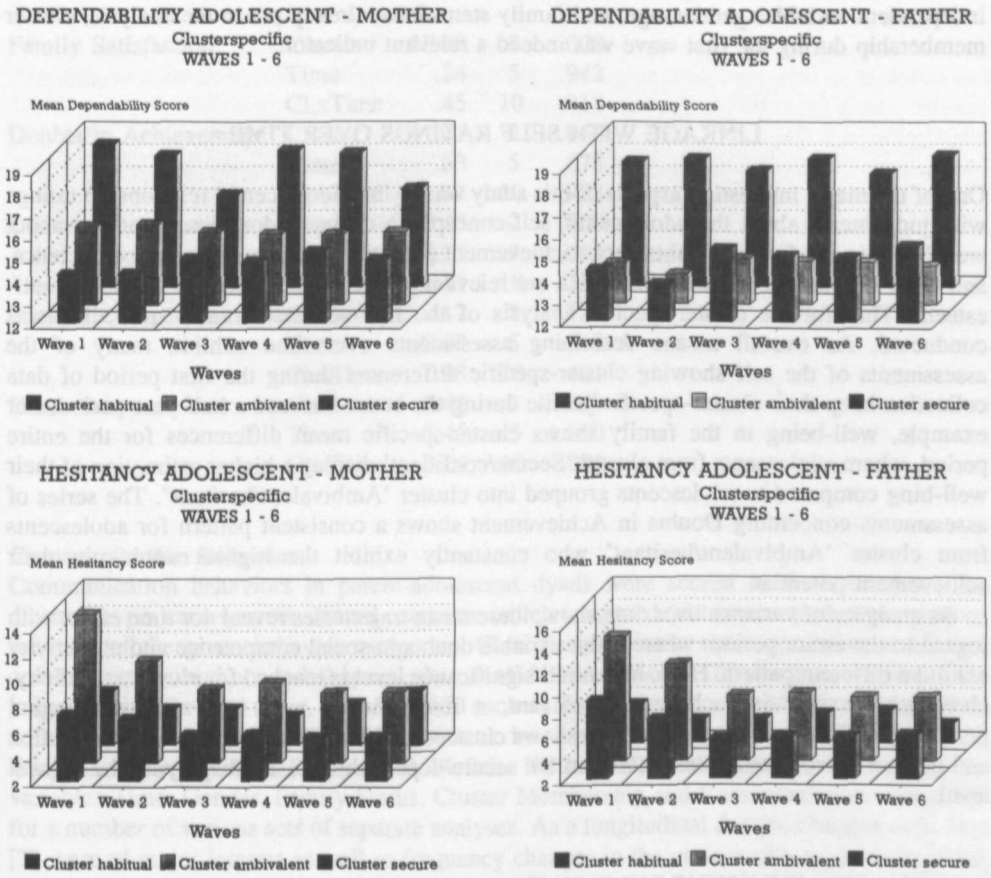


Table 4. Results regression analyses, Wave 4 and Wave 6

Scale (wave 4)	mult R	adj R^2	ΔR^2	variable	beta	t	p
DP (ado-mother)	.488	.176	.098	clu 3-12	.329	2.472	.016
DP (ado-father)	.516	.208	.210	clu 3-12	.405	3.111	.003
EH (ado-mother)	.550	.246	.290	clu 2-13	.472	3.830	.000
EH (ado-father)	.525	.216	.272	clu 2-13	.452	3.569	.000
DC (ado-mother)	.295	.012	.021	gender	-.290	-2.217	.031
Scale (wave 6)	mult R	adj R^2	ΔR^2	variable	beta	t	p
DP (Ado-Mother)		----------					
DP (Ado-Father)	.471	.152	.154	clu 3-12	.302	2.222	.030
EH (Ado-Mother)	.426	.110	.116	clu 2-13	.360	2.767	.006
EH (Ado-Father)	.450	.131	.156	clu 2-13	.246	1.825	.073
DC (Ado-Mother)	.410	.095	.045	Age	-.300	-2.371	.021

DP: Dependability; EH: Emotional Hesitancy; DC: Discussion of critical issues

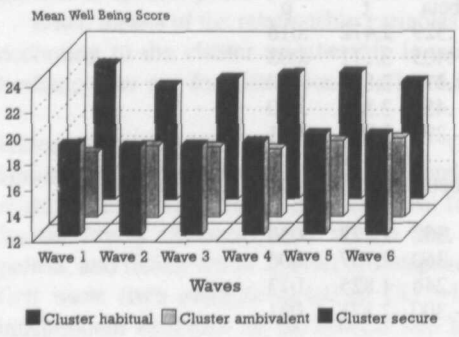
Dependability with father and Emotional Hesitancy with both mother and father continue to show considerable beta coefficients (ß>.40 for fourth wave, and ß>.25 for sixth wave). Moreover, when ΔR^2 is regarded, the increment in the second step, when the 'classical' independent variables gender, age, and family status have already put in the analysis, cluster membership during the first wave was indeed a relevant indicator.

LINKAGE WITH SELF RATINGS OVER TIME

One of the major interesting aspects of this study was to link adolescents' relationship ratings with judgements about the adolescents' self-concepts in different domains. Concepts about well-being in the family, doubts about achievement potential, attractivity, social competence, and other orientation are domains which are relevant for the development of children's self-esteem. Therefore, a cluster-specific analysis of the five self-assessments over time was conducted. As overall means describing assessments over time exhibit, many of the assessments of the self showing cluster-specific differences during the first period of data collection keep their cluster-specific profile during the entire two and a half year period. For example, well-being in the family shows cluster-specific mean differences for the entire period, where adolescents from cluster 'Secure/confident' display a higher estimation of their well-bing compared to adolescents grouped into cluster 'Ambivalent/hesitant". The series of assessments concerning Doubts in Achievement shows a consistent pattern for adolescents from cluster 'Ambivalent/hesitant' who constantly exhibit the highest doubts in their achievement potential.

As analyses of variance over time show, these mean trajectories reveal nor time effect with regard to the entire period, whereas the variable doubts in social competence and attractivity exhibit a different pattern. Here, no overall significance level is reached for cluster specificity. However, general time change is relevant, a result fitting well into a developmental perspective. Finally, Other Orientation shows cluster-specific differences only during the first and the last wave with adolescents from the secure/dependable cluster displaying the highest level.

CLUSTERSPECIFIC WELL BEING IN THE FAMILY
ADOLESCENT
Waves 1 - 6



DOUBTS IN ACHIEVEMENT ORIENTATION
ADOLESCENT
Clusterspecific

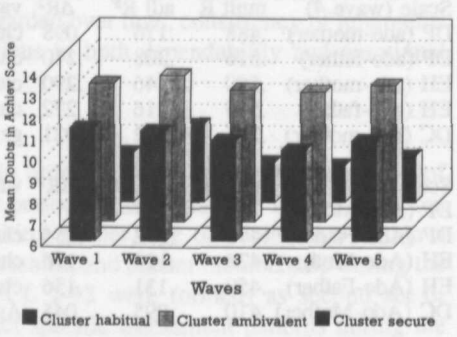


Table 5: Anovas repeated measurement and Tukey post hoc tests for self and family variables

Scale	Effect	F	df	p
Family Satisfaction	Cluster	10.99	2	.000
	Time	.24	5	.942
	Cl.xTime	.45	10	.918
Doubts in Achievement	Cluster	11.01	2	.000
	Time	.63	5	.678
	Cl.xTime	.27	10	.988
Discontent Attractivity	Cluster	9.43	2	.000
	Time	3.73	5	.003
	Cl.xTime	1.51	10	.133
Social Incompetence	Cluster	2.17	2	.124
	Time	3.07	5	.010
	Cl.xTime	.98	10	.461
Other Orientation	Cluster	2.42	2	.098
	Time	9.41	5	.000
	Cl.xTime	3.04	10	.001

Communication Behaviors

Communication behaviors in parent-adolescent dyads were scored from videotapes. One discussion per card was considered one event which was rated (either per dyad or per person) for each of the given behavior categories. Classifications were made according to formal, communication, and nonverbal apects. Across all families, about 1100 discussion events were judged during the first wave, and about 600 each during the fourth and sixth wave of our data collection. Resulting frequency distributions in three dimensional cross-tabulations (see Wickens, 1989; von Eye, Kreppner, & Weßels, 1992, 1994) were generated by crossing the variables Time, Gender, Family Status, Cluster Membership and Communication Categories for a number of various sets of separate analyses. As a longitudinal design, changes over time [T] were of major interest as well as frequency changes in the various observed levels of the communication categories [O]. The third variable varied for the different sets of analyses: Gender of adolescent [G], family status [S], and cluster membership [C]. Analyses were conducted separately for mother-adolescent and father-adolescent constellations.

Models with a probability greater .05 were selected as fitting for explaining the frequency patterns found in the respective cross-tabulations (for the search process BMDP 4 F Program was used). As "main effect" models were not interpretable as frequency contours along main effects were empirically predefined (unequal frequencies). Interaction terms or saturated models (with a triple interaction term) were analyzed according to the significances of the parameter estimates which were computed for the selected models. Parameter estimates allow one to describe table characteristics in more detail. We estimated parameters from contrast variables defined in a way similar to linear contrasts in ANOVAs (for details see Evers & Namboodiri, 1978; Rindskopf, 1990; von Eye, Kreppner, & Weßels, 1992, 1994). For the models the parameters for the interaction terms [TO] and, according to the different analyses, [GO] (gender by level of communication category), [SO] (status by level of commu nication category, and [CO] (cluster membership by level of communication category) are of primary

interest, as these terms detail variable interactions. In saturated models, the triple interaction [TOG], [TOS], or [TOC] signifies that the three variables influence the frequency distribution by a cell-specific mode without a reduction possible to a more parsimonious model.

To compute parameter estimates, contrasts were formed by using one of the categories as anchor category or reference, against which the others were compared. For instance, for the communication variable Interaction Style, the level "Competitive" served as contrast category against which the other categories "integrative", "distanced", "dominant", and "submissive" were compared. The four contrast parameters are estimated, the fifth, that is, the parameter for the anchor category can be assessed by summing the z-values of the entire row up to zero. The same procedure holds for all respective columns or rows of a mxn table.

Table 6 shows a rather complex pattern of models for each variable in the two dyadic parent-adolescent constellations. For both gender and cluster membership, analyses were conducted for the two dyadic constellations adolescent-mother and adolescent-father separately. For analyses including the family status variable, of course only the adolescent-mother constellation could be included.

In the following sections we interpret the different communication categories with regard to their most relevant significant parameter estimates. First, gender-specific communication behavior is described, then, relevant aspects of status specific discussion behaviors are depicted. Finally, and most relevant, cluster-specific communication patterns are characterized.

Gender Aspects of Communication

For the gender-specific communication patterns, first of all, more models with a [GO] term are found for father-adolescent than for mother-adolescent dyadic constellations. (see table 6). For the formal aspect "who takes up a card" , the daughter - mother dyads show a lower degree of "nobody" than son-mother dyads (z=-2.91). By the same token, in the communication style dimension, more sons display dominant behavior towards their mothers than daughters (z=2.53).

Table 6: Log-linear models for formal and communication dyadic parent-adolescent behavior (T=Time; O=Levels within a category (vary for each category).

Communication Behaviors, Cluster membership and Time

C=Cluster membership: habitual, no discussion (1), emotionally ambivalent (2), secure and dependable (3)

	Mother-Adolescent		Father-Adolescent	
	Model	p	Model	p
Formal aspect				
Taker of card	saturated	-	saturated	-
Communication aspects				
Hierarchy	[CO][TO]	.065	[CO][TO]	.235
Com. style parent	[C][T][O]	.107	saturated	-
Com. style adolescent	saturated	-	[C][TO]	.283
Int. style parent	saturated	-	[CO][TO]	.177
Int. style adolescent	saturated	-	[CO][TO]	.055
Nonverbal aspect				
Closeness parent	[CO][TO]	.093	[CO][TO]	.358
Closeness adolescent	[CO][TO]	.132	[CO][TO]	.100

Communication Behaviors, Gender of Adolescent, and Time
G=Gender of adolescent

	Mother-Adolescent		Father-Adolescent	
	Model	p	Model	p
Formal aspect				
Taker of card	[GO][TO]	.457	[GO][TO]	.122
Communication aspects				
Hierarchy	[TO]	.057	[G][TO]	.854
Com. style parent	[T][O]	.505	[GO][TO]	ns
Com. style adolescent	[TO]	.763	saturated	-
Int. style parent	[TO]	.907	[GO][TO]	.286
Int. style adolescent	[GO][TO]	.525	[GO][TO]	.399
Nonverbal aspect				
Closeness parent	[TO]	.193	[GO][TO]	.102
Closeness adolescent	[TO]	.222	saturated	-

Communication Behaviors, Family Structure, and Time (Mother-adolescent only)
S=Family structure (two-parent, single parent)

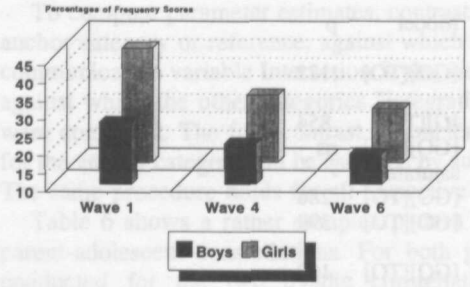
	Mother-Adolescent	
	Model	p
Formal aspects		
Taker of card	[S][TO]	.141
Communication aspects		
Hierarchy	[SO][TO]	.322
Com. style parent	saturated	-
Com. style adolescent	[S][TO]	.228
Int. style parent	[SO][TO]	.275
Int. style adolescent	[SO][TO]	.580
Nonverbal aspects		
Closeness parent	saturated	-
Closeness adolescent	saturated	-

In the father-adolescent constellations, one of the most salient gender differences is that fathers show more "teaching" in their discussions with their daughters (z=2.12) than with their sons (see Figure 4, A). Another remarkable result is that during period 4, when the adolescents are about 13 years old, fathers show more dominant communication behavior particularly with their sons (z=2.77) (see Figure 4, B). For the interaction style dimension, daughters are less distant and dominant with their fathers than sons (z=-2.31 and z=-2.43) (see Figure 4, C). Closeness with father is less low with daughters than with sons (z=-2.57). However, in a time-specific triple interaction, daughters show lower closeness than sons at time 6, when they are 14 years old (z=-2.04) (see Figure 4, D).

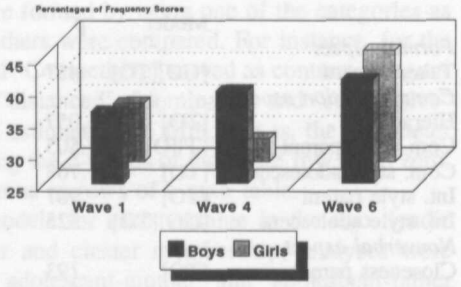
Family Status Aspects of Communication

For the family status, another picture of differences between two-parent and single-parent families emerges. A general pattern for two family types can be distinguished: Relationship appears to be more egalitarian in single families compared to two-parent families (z=3.20), but adolescents are more dominant in single families than in two parent families with their mothers (z=3.18) (see Figure 5, A). Mothers in single parent families are teaching more at time 1, when adolescents are at age 11,6 compared to mothers from two parent families

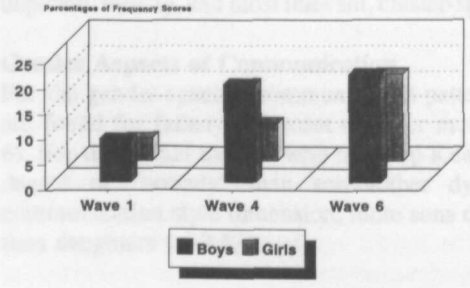
GENDER SPECIFIC COMMUNICATION STYLE
'TEACHING'
FATHERS WITH ADOLESCENTS



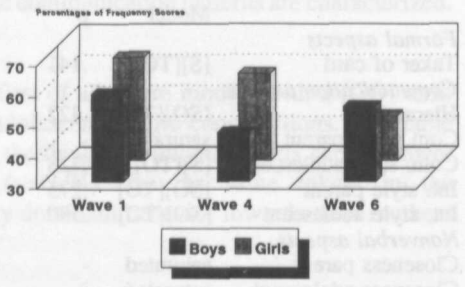
GENDER SPECIFIC INTERACTION STYLE
'DOMINANT'
FATHERS WITH ADOLESCENTS



GENDER SPECIFIC INTERACTION STYLE
'DOMINANT'
ADOLESCENTS WITH MOTHERS



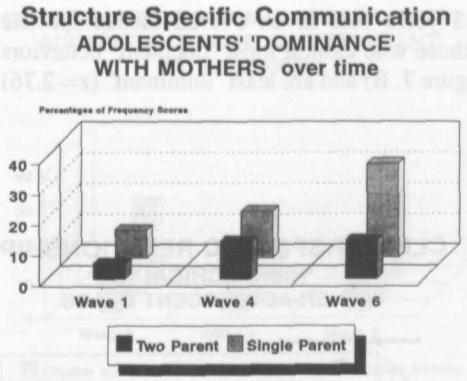
GENDER SPECIFIC CLOSENESS
ADOLESCENTS WITH FATHERS
'HIGH' AND 'VERY HIGH'

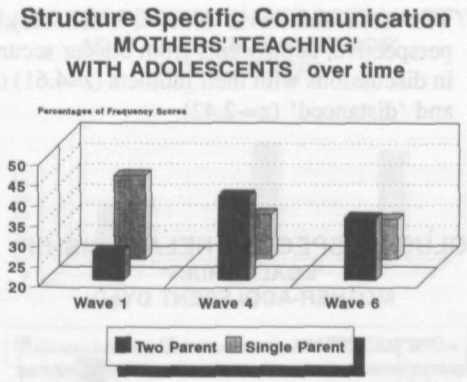


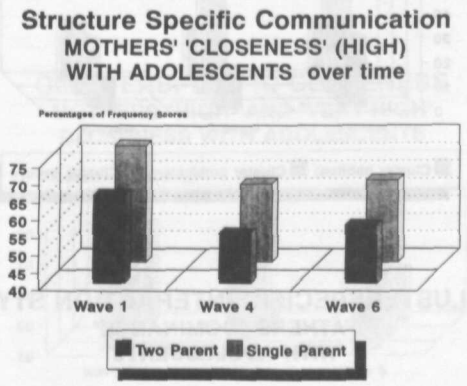
(z=2.40), but less at time 4, when children are about 13 years old compared to two-parent mothers (z=2.07) (see Figure 5, B). Finally, closeness of mothers is higher in single-parent families both for mothers (z=2.93) and for adolescents (z=3.51) than in two parent families (see Figure 5, C and D). This outcome confirms a result of a study conducted by Smetana, Yau, Restrepo, & Braeges (1991) in which the authors found less conflict behavior in single families and a general more harmonious picture compared to two-parent families. However, the outcome could also point to a lack of separation and individuation development in adolescents living in single families.

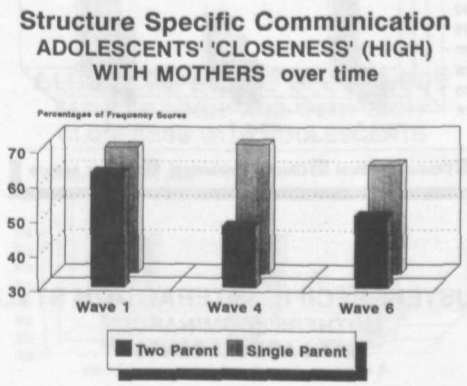
Cluster-Specific Aspects of Communication

The analyses dealing with cluster-membership and its association with communication behavior in family dyads yielded the following results: As can be seen from the table of models, the term [CO] or [COT] (for saturated models] was nearly always necessary to explain the frequency distributions found in the cross tabulations for both mother-adolescent and father-adolescent dyads. For the category 'taker", adolescents of the secure/dependable cluster showed less frequently the 'nobody' takes up a card' category compared to adolescents from the other two clusters (z=-8.19 for mothers, z=-10.50 for fathers). Dyads





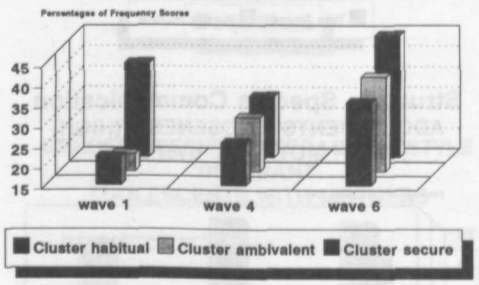




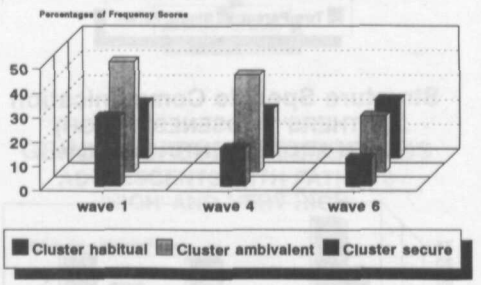
from the secure/dependable cluster show significantly higher values in 'egalitarian communication' with mothers (z=7.52) (see Figure 6, A) and with fathers (z=6.47) compared to dyads from the other two clusters, and adolescents from the 'ambivalent' cluster experience the highest rate of 'hierarchical' relationship with their fathers (z=1.96) (see Figure 6, B). For 'communication style", mothers do not show an association pattern with cluster-membership; fathers show a higher amount of giving 'statements' at time 6, irrespective of cluster membership (z=2.13). For the category 'interaction style, mothers in dyads with adolescents from the secure/dependable cluster show a high degree of 'competitiveness' during the first and the sixth wave (z=5.51; z=7.45) and more 'dominant' communication behavior than the mothers from the other clusters at time 4, when the children are 13 years old (z=5.57), and they are lower in this category at time 6, when children are 14 years old (z=-3.19) (see Figure 6, C). Fathers in dyads with adolescents from the 'ambivalent' cluster generally show a highly dominant communication pattern over time (z=2.76) (see Figure 6, D).). Fathers from cluster 'habitual' are less distanced in their communication compared to father-adolescent dyads from the other two clusters. Adolescents, first of all, become more 'dominant' toward their mothers over time, independently of cluster membership. In the same direction, the use of 'statement' increases over time (z=-3.98 at time 1) and also 'negotiation' with mothers. Under a time-specific perspective, adolescents from the secure/dependable cluster show the highest values for 'statement' at wave 6 (z=4.28), when they discuss with their fathers (see Figure 7, A). Adolescents from the 'ambivalent' cluster exhibit the largest degree of 'negotiation' (z=3.49)

with their fathers at time 4, when they are 13 years old. In an overall cluster-specific perspective, adolescents from cluster secure are those who exhibit most 'obedient' behaviors in discussions with their mothers (z=4.61) (see Figure 7, B) and are least 'dominant' (z=-2.76) and 'distanced' (z=-2.42).

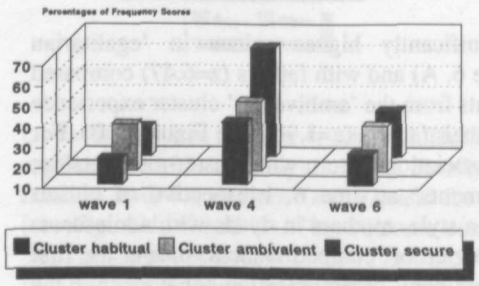
CLUSTERSPECIFIC RELATIONSHIP
"EGALITARIAN"
MOTHER-ADOLESENT DYAD



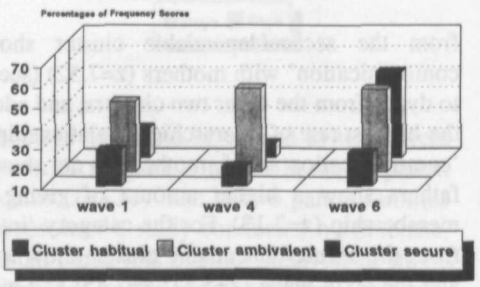
CLUSTERSPECIFIC RELATIONSHIP
"HIERARCHICAL"
FATHER-ADOLESCENT DYADS



CLUSTERSPECIFIC INTERACTION STYLE
MOTHERS' "DOMINANCE"
WITH ADOLESCENTS

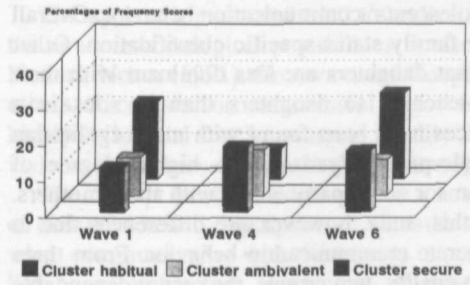


CLUSTERSPECIFIC INTERACTION STYLE
FATHERS' "DOMINANCE"
WITH ADOLESCENTS

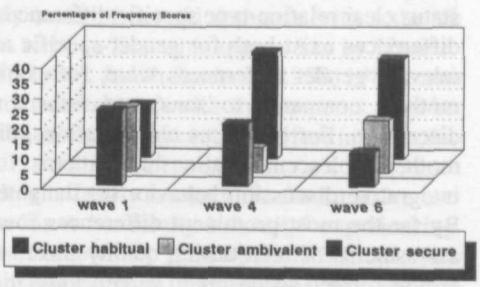


Finally, 'closeness' decreases in mother-child dyads over time, irrespective of cluster membership, as it has higher values for the first time period (z=2.61) compared to the other two periods (see Figure 7, C). Fathers show the lowest degree of closeness during the fourth wave, when adolescents are 13 years old, irrespective of cluster membership (z=6.35), mothers in dyads with adolescents from the secure cluster display a fairly high degree of closeness (z=6.53), fathers with adolesents from the 'ambivalent' cluster show least high closeness with their children compared to fathers with the other two clusters (z=-4.40) (see Figure 7, D).

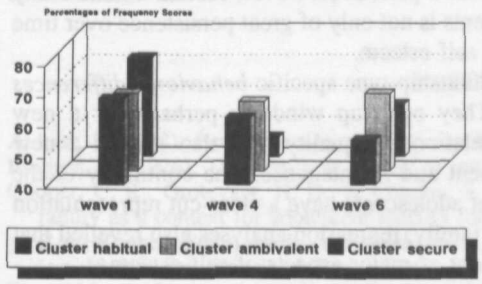
CLUSTERSPECIFIC COMMUNICATION STYLE
ADOLESCENTS' USE OF 'STATEMENT'
WITH FATHERS



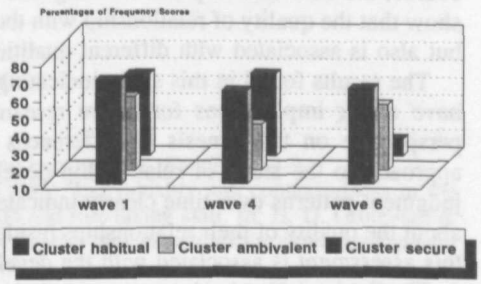
CLUSTERSPECIFIC INTERACTION STYLE
ADOLESCENTS' "OBEDIENCE"
WITH MOTHERS



CLUSTERSPECIFIC CLOSENESS
MOTHERS "HIGH" AND "VERY HIGH"
CLOSENESS WITH ADOLESCENTS



CLUSTERSPECIFIC CLOSENESS
FATHERS "HIGH" AND "VERY HIGH"
CLOSENESS WITH ADOLESCENTS



In sum, as a main result from these many single analyses, it appears that adolescents from groups defined according to their relationship judgments as 'habitual", 'ambivalent' or 'secure/dependent' experience also different communication situations in family dyads. Adolescents from the 'secure/dependable' cluster, for example discuss with their parents in situations that are well-structured, and perhaps also well guided by the parents, in a climate of a high degree of closeness and egalitarian relationship structure, at the same time well adapted to the changing developmental status of the child. This is very different from what we see in the 'ambivalent' group of families where adolescents experience a permanent dominance of their fathers in a basically hierarchical relationship structure and a climate characterized by a lower degree of closeness than adolescents from the other two clusters. One could speculate, perhaps, that, as an overarching pattern, for adolescents from the 'ambivalent' cluster no changes occur on the level of parent-child communication according to developmental status, whereas adolescents from the 'secure/dependable' cluster do experience such changes. Communication analyses show that a *time-specific schedule of guidance* seems to prevail in the secure/dependable relationship families.

DISCUSSION

The present observational data revealed, aside from some differences in gender and family status clear relation-type specific differences in adolescents' communication behavior. Overall differences exist both for gender-specific and for family status-specific classification. Other relevant gender differences were, for example, that daughters are less dominant with their mothers compared to sons, and fathers more teaching to daughters than to sons in a discussion. For the status classifications, differences have been found with more egalitarian mother-adolescent relationship patterns for single-parent dyads and a higher degree of integrative discussion behavior for daughters than for sons, particularly with their mothers. By far the most prominent differences found in this study, however, are differences due to assessments of relationship quality linked to concrete communication behavior. From three groups formed according to perceived relationship quality, two groups, the secure/dependable and the ambivalent group appear to experience communication patterns that are clearly distinguishable with regard to many respects such as degree of time-specific guidance in discussions, egalitarian or hierarchical relationship pattern, communication style, or degree of closeness. Often-times, different quality of relationships between adolescents and their parents is neglected in favor of a greater focus on adolescents' peer relationships which, of course, are new and important during this transition period. However, results of this study show that the quality of relationship with the parents is not only of great persistence over time but also is associated with different qualities of self-esteem.

The results found in this study indicating relationship-type specific *behavioral differences* have major implications for future research. They open up windows perhaps for a new perspective on the genesis of differences in relationship quality and also initiate a new approach to the study of relationship development and maintenance. The continuity of the judgment patterns over time clearly indicates that adolescents have a clear-cut representation about the quality of their relationships inside the family; regression analyses also reveiled that this assessment is associated with the development of major aspects of self-esteem.

The linking of subjective representation of relationship quality with real experience of day-by-day interactions in family dyads can provide a more sophisticated framework for the ontogenesis of differential social and communicative competence in adolescents. It appears that communication behaviors produced in parent-adolescent dyads contain "more" information than that constituting subjective knowledge about family relationships.. Looking at the real communication exchange between generations in the family is also looking at the situation where, under a more person-oriented perspective, the exchange between individual and its proximal environment and the process of forming and being formed by environment is observable.

Results also strongly suggest that adolescents do produce and experience different communication patterns in their families (Kidwell, Fischer, Dunham, & Baranowski, 1983), often-times not comparable with communication patterns in another family, a fact similar to the existence of different "cultures of communication" in different tribes. Deeper knowledge about family-specific elements or details of communication may lead us to a better understanding of those factors relevant for a successul or unsuccessful passage from childhood to adolescence. William Stern's concept of "gelebte Welt", that is, the world a person is living in or a person's personal space is believed to provide a still attractive model for future family research as it links different interaction and communication formats in the family to the process of individual development. With Burgess (1926) concept of the family as a

superpersonality with focus on the exchange among members, the family's inner communication culture was reestablished as a source of information pertinent to a classification of family types.

The approach presented tried to realize not only some of the old demands with some of the new methodological possibilities, it also seems to be in line with approaches by Hauser, Powers, Noam (1991), Grotevant and Cooper (1985,1986), Judith Smetana (1988, 1989), and others. Successful or unsuccessful negotioations of adolescents' with their parents may be highly influential for the concrete identity formation of the adolescents manifest in different visions about themselves and their future lives.

The attempt has been made to open a new window in family research for the intensive use of observation and description of what the child in his or her family is "really" experiencing when communicating with the parents, a process well-known as "primary socialization". The linking of subjective assessment of relationship quality with the analysis of concrete communication behavior in the intergenerative dyads can illustrate how fine-regulations of communications contribute to different patterns of identity formation. Stability of differences found over time underline the importance of communication patterns and imply a history of common experiences in interchange. Development appears to be formated every day by parent-child exchange framed by the family-specific *recurrent patterns of day-by-day communications.*

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FAMILY BACKGROUND AND SCHOOL SUCCESS

The transition from primary school to secundary school in the Netherlands

Mariël Jacobs

There are several theoretical and empirical findings that suggest a connection between family background and school success. Children from different types of families appear to perform differently at school. In the sixties and seventies sociologists noted the importance of demographic variables like socioeconomic status (Claeys, 1971; Coleman, Campbell, Hobson, McPartland, Mood, Weinfeld & York, 1966; Heyns, 1978; Van Heek, 1976): children from lower classes performed more poorly at school than children from higher classes. Sociological family variables appeared to be global constructs subsuming a variety of values, attitudes, and motivations related to school success (Aldous, 1978; Henderson, Bergan & Hurt, 1972). The focus of family research was therefore redirected to these values, attitudes, and motivations within the family.

We define '*family*' as "a group of people living together, comprising at least two generations, and containing more or less dependent children. A significant feature of their living together is that they constitute a household" (Schoorl, 1986, p.151).

To comprehend the complexity of the values, attitudes, and motivations within a family we adopt Schoorl's *theory of rule profiles* (1986, 1993). Rules specify what behavior is obligatory, preferred or forbidden in a certain situation. There are many different types of rules: action rules are concrete instructions about how to act in a given situation; basic rules provide more general instructions on how to act; meta rules provide instructions for dealing with deviations and changes. Principles justify rules by pointing to values and regularities. Some rules are clearly known to all the family members; other rules exist more in the subconscious or unconscious. Schoorl defines a 'rule profile' as 'a system of connected action rules, basic rules, and meta rules that is legitimated by certain principles' (1993, p.83). Each family has its own characteristic rule profile. These rule profiles differ on a number of dimensions: 1. cohesion; 2. adaptability; 3. position or person orientation; 4. internal or external control; 5. performance orientation; 6. control; 7. rule concordance; 8. intellectual climate; 9. regularity. Rule profiles are considered quite stable, but day-to-day habits and rules do change. During a major change in family life, family members will be more aware of their underlying rule profile. The latter functions as a starting point for the definition of new rules.

Children's departure from primary school and *entry into secondary school* cause several changes in the daily routines of the family. Because of the interdependence of the members of a family, all are involved when one experiences an important change in his/her life (Aldous, 1978). The 12- or 13-year-olds entering secondary school are faced with a variety of changes: 1. practical: more homework, new time schedules; 2. social: making new friends, adapting to new teachers; 3. academic: pressure to perform well; 4. personal: defining one's own role in the new environment. Within the family, parents and children will have to make agreements on how to do homework: will parents help, must the child consult with the parents? Parents must find a new way to deal with the new school: will they be actively involved or will they leave the school mostly to the children? Different families will place a different value on academic performance. The family can support the child in dealing with the new experiences.

In studying school success we distinguish two aspects: 1. cognitive performance, which can be measured in terms of marks; 2. socio-emotional performance, which can be measured in terms of well-being, motivation, and self-concept. In many empirical studies relations were found between family background and school success. In general it is found that the following family characteristics are related to the child's school success: 1. involvement of parents in school; 2. child-centered and controlling parenting; 3. regularity; 4. low level of conflict.

This chapter addresses the following question: *which features of the family rule profile advance school success in the first year of secondary school?*. First, we will study the relationship between the dimensions of the family rule profile and some indicators of school success. Second, we will control for possible mediating effects of: 1. intelligence of the child; 2. primary school's advice concerning the most suitable type of secondary school; 3. educational level of parents; 4. cultural background; 5. degree of expression of emotions by parents. Third, we predict school success from the dimensions of the family rule profile and the control variables, to look for the independent explanatory value of the family variables.

METHOD

The sample consisted of 227 students (115 boys and 112 girls) in the first year of secondary school and their parents (225 mothers and 201 fathers). The mean age of the students was 12 years and 8 months. The schools were mixed high-level and middle-level secondary schools and all children were in bridge classes. Of all the families we approached, 30% did not want to take part in our study. The participating 227 families had the following characteristics:

- 19% had been through a divorce in the past;
- 12% was a one-parent-family;
- 8% included a step-parent;
- 40% of the fathers and 21% of the mothers had attained a high-level education (e.g. college or university); 38% of the fathers and 51% of the mothers had attained a middle education; 22% of the fathers and 28% of the mothers had attained a low education (e.g. lower vocational education);
- in 75% of the families the parents had grown up in the Netherlands; in 25% one or both parents had grown up in another country.

During the first four months of the school year, we interviewed parents and students in their own home. Parent(s) and student were interviewed simultaneously. Questions were asked about: 1. reasons for choosing a particular school; 2. homework; 3. leisure activities; 4. rules in general. The interviewer and another researcher rated the family rule profile by means of 26 rating scales. Principal components analysis revealed seven indexes, which correspond directly to the dimensions of the family rule profile:

1. involvement in homework (cohesion dimension): is homework a family matter in which everyone is involved or is homework a private matter for the child?
2. position or person orientation (position orientation dimension): does the family see their members as persons/individuals or as positions/roles within the family?
3. regularity in homework (regularity dimension): is homework done the same time, the same place and the same way every day or is there a lot of variation?
4. involvement in leisure time (cohesion dimension): are the family members doing many things together or mostly individually?

5. influence of the student on the choice of a particular school (control dimension): does the child have a say in deciding which school he or she will go to?
6. active involvement of parents in the choice of a school, and later on in the school itself (cohesion dimension): are parents looking actively for information to choose a school or do they leave the choice mostly to other people; are parents actively involved in school matters or do they never enter the school building?
7. conflict about rules (rule concordance dimension): do family members agree on the rules in the family or do they disagree often?

Fathers and mothers completed the Utrecht Coping Questionnaire (Schreurs, Van de Willige, Tellegen, & Brosschot, 1988), which includes the scale 'expression of emotions'. This scale concerns 'showing annoyance or anger; working off one's tensions'.

Students participated in a classroom survey. Three instruments were included in this paper: (1) School Questionnaire (Smits & Vorst, 1983), which measures well-being and motivation; (2) Self-Concept Questionnaire (Neuwahl, 1989), which measures cognitive self-concept and social self-concept; (3) Groningen Intelligence Test, short version (Kooreman & Luteijn, 1987), which yields an IQ score. The schools provided information on the primary school's advice concerning the most suitable type of secondary school (e.g. pre-university or vocational education) and the report marks in December (four months after the start of the school year).

RESULTS

Pearson correlation coefficients between family variables and school success variables were calculated (Table 1). Except for 'person orientation', all family variables correlated significantly with at least one of the five school success variables. 'Social self-concept', as an indicator of school success, showed no significant relations with the family variables.

We found that a high level of school success was related to: low involvement in homework, high regularity in homework, high involvement in leisure time, some influence of the child in choosing the school, active involvement of parents in choosing the school, and low levels of conflict in the family. Families with a rule profile like this had children with high levels of school success. Although these correlations were significant, they were quite small. To investigate the influence of the control variables on the relation between the family variables and the school success variables, we used partial correlation coefficients. In each partial correlation we controlled for the effect of one control variable. Then we examined the differences between these partial correlations and the zero-order correlations in Table 1. Only the control variables 'IQ' and 'advice' seemed to make a difference. But the differences between zero-order correlations and partial correlations for these control variables did not exceed .14.

Table 1. Correlations between the family variables (horizontally) and the school success variables (vertically)

	motivation	well-being	cognitive self-concept	social self-concept	marks
involvement in homework	-.26**	-.07	.05	.10	-.28**
person orientation	-.05	-.00	-.04	-.01	.12
regularity in homework	.32**	.19**	.22**	.06	.19**
involvement in leisure time	.20**	.02	.16*	-.04	-.12
influence child choice of school	.15*	.06	.04	.08	.07
active involvement	.05	.04	.21**	.10	.23**
conflict	-.43**	-.25**	-.19**	-.08	-.25**

*p≤.05 **p≤.01. Note. High scores on the variables refer respectively to: high involvement, person orientation, high regularity, high influence of child, active involvement, many conflicts, high motivation, a high degree of well-being, high self-concept, high marks. Low scores refer to the contrary. N varied between 212 and 224.

For the remaining control variables these differences did not exceed .05. From this we can conclude that the correlations between family rule profile and school success were quite stable, even when we controlled for the variables educational level of parents, cultural background of the family, and coping of the parents. Only the control variables 'intelligence of the child' and 'the primary school's advice concerning the most suitable type of secondary school' had a small influence on the relationship between family rule profile and school success. These two control variables will therefore be used in the next multivariate analysis.

Regression analyses were used to see how well each of the school success variables could be predicted by the family variables and the control variables 'IQ' and 'advice from primary school'. Although this type of analysis suggests a causal relationship, our research design does not provide a basis for causal conclusions. The reader must bear this in mind while looking at the results in Table 2.

The variable '*social self-concept*' could not be predicted by any of the independent variables. The other four indicators of school success could be moderately or well predicted by a combination of the family variables and the control variables (Table 2). 'Advice from primary school' is the most important predictor for marks, well-being, and cognitive self-concept. To predict school motivation the family rule profile seems to be more important than any other variables.

High *motivation* related to low levels of conflict in the family, advice for difficult school types, high involvement in leisure time, high regularity in homework, and low involvement in homework. High *well-being* related to advice for difficult school types, low levels of conflict in the family, and low intelligence. High *cognitive self-concept* related to advice for difficult school types, high involvement in leisure time, and active involvement of parents in choosing a school. High *marks* related to advice for difficult school types, low levels of conflict in the family, high involvement of parents in choosing a school, and high intelligence.

Table 2 Regression analyses with school success variables as dependent variables and family and control variables as independent variables

dependent variable	variable entered 1	variable entered 2	variable entered 3	variable entered 4	variable entered 5
motivation	conflict	advice	involv.lei	regularity	involv.hw
	cum.R^2=.19	cum.R^2=.26	cum.R^2=.29	cum.R^2=.31	cum.R^2=.33
	ß=-.21	ß=.28	ß=.21	ß=.21	ß=.19
well-being	advice	conflict	IQ		
	cum.R^2=.06	cum.R^2=.09	cum.R^2=.10		
	ß=.27	ß=.16	ß=.15		
cogn. self-concept	advice	involv.lei	active involv.		
	cum.R^2=.11	cum.R^2=.17	cum.R^2=.19		
	ß=.35	ß=.26	ß=.17		
marks	advice	conflict	act. involv.	IQ	
	cum.R^2=.47	cum.R^2=.49	cum.R^2=.52	cum.R^2=.53	
	ß=.58	ß=.22	ß=.15	ß=.14	

Note. cum.R^2 = cumulative R^2.; the proportion of variation in the dependent variable that can be accounted for by all the independent variables entered in the regression model; ß = beta coefficient: involv. = involvement: lei = leisure activities; hw = homework; cogn = cognitive; + = positive to the equation; - = negative contribution to the equation; high scores on the variables refer to: high motivation, high well-being, high self-concept, high marks, advice for difficult school type, many conflicts, high IQ, high involvement, high regularity, active involvement. --- Table 2 -

CONCLUSIONS AND DISCUSSION

Correlation analysis showed that family variables and school success variables were related, although the correlation coefficients did not exceed the absolute value of .43. When control variables were taken into account, it appeared that only 'intelligence' and 'advice from the primary school' had a small influence on the relation between family and school variables.

Regression analyses showed that marks could be rather well predicted (R^2=.53) by a combination of family and control variables. Motivation could be moderately well predicted (R^2=.33); cognitive self-concept (R^2=.19) and well-being (R^2=.10) could only be predicted for a small part. Social self-concept could not be predicted. We found that in most cases 'advice from primary school' was the most important predictor of school success in the first year of secondary school. This advice is based on the performance of the child during primary school and can be considered a measure of school success prior to secondary school. This explains its ability to predict later school success, because in general pupils will be quite stable in their level of school success across their school career. We had a different result for one indicator of school success: motivation in the first year of secondary school could be predicted for the largest part by the dimensions of the family rule profile. The advice from primary school could only account for 7% of the variation in 'motivation'; the family variables could account for 26%. To be motivated for school seems to depend substantially on the family background.

From the correlation and regression analyses we can conclude with some caution that a family is most supportive in the first year of secondary school if there are very few rule conflicts, a low level of homework involvement, a high level of leisure involvement, a high

level of regularity in homework, an active involvement of parents in choosing a school, and some influence of the child in choosing the school. This seems to benefit school motivation in particular. The influence of the family must be seen within the limits of the primary school's advice concerning the most suitable type of secondary school and the intelligence of the child. In general, children with an advice to attend higher-level types of secondary school and more intelligent children have higher levels of school success. Independent of this general effect, this study showed that family background was also related to school success.

Our study has some limitations. First of all, we cannot make any causal conclusions because all data were collected during a short period of time. To study the possibility of reciprocal relations (school success and family characteristics influencing each other) and relations in the reverse direction (school success influencing family characteristics) we would need a different research design, in which children are followed over some significant period of time (a longitudinal study). In future stages of our project we will therefore follow the students until they have been in secondary school for two years. These follow-up data will be limited to report marks and year-end advice.

A second limitation is that our family instrument, the family interview, will require more research efforts to establish its reliability and validity. In the present form it was used for the first time in this study.

A third limitation is that our results only pertain to children in the first year of secondary school. Our family interview was adapted to this particular period. We believe that this led to better indicators of the underlying rule profile than an interview on more general family matters would have. But to investigate the relation between family background and school success more extensively, other periods in the school career will have to be studied as well.

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MOTHERS OF CHILDREN WITH ATOPIC ECZEMA: PERSONALITY, PARENTAL ATTITUDES AND FAMILY'S CLIMATE

Hans-Peter Langfeldt

ATOPIC ECZEMA: THE APPEARANCE OF A DISEASE

Talking with mothers of babies or young children, you will find atopic eczema to be a very common disease. Atopic eczema is observed in all continents and races (Rajka, 1986). Recent studies in Europe and North-America estimate an incidence rate in childhood of 10% or 12%. Mostly the disease begins in the early infancy. Two thirds of the patients become diseased during the first year of their life, 80% to 90% during the first five years (Hanifin, 1991). The natural course of atopic eczema is highly variable and periodic. There are periods of hard exacerbation and periods of relative silence.

Typical areas of affected skin are: the temple, the eye sockets, the area around the mouth, the neck, the insides of the elbows or knees, the wrists, the hands, and the feet (i.e. Harper, 1988, p. 23 -29; Ring, 1988, p. 183 - 191; Steigleder, 1991, p. 234 - 246).

Usually atopic eczema is chronic. A long term follow-up study in a dermatological hospital of Stockholm showed 62% of the patients still suffering from eczema thirty years later (Rystedt, 1985; see also Musgrove & Morgan, 1976; Vickers 1980).

The behavioral component of atopic eczema is seriously problematic. Especially during the night, the diseased child scratches intensively for long periods. The consequences during the day are overtiredness, lack of concentration, and restlessness on the one hand, and sometimes the effects of sedatives on the other. The scratching often may lead to dangerous wounds or infections of the skin.

The diseased child may also be confronted with ignorant reactions of the social environment because the damaged skin looks repulsive and often people are afraid the disease would be contagious (it is not!) and avoid contact.

The etiology of atopic eczema is multifactorial (Koblenzer, 1987): The genetic determinant is verified but many triggers have been discussed. They range from allergy via environmental pollution to psychological factors.

ATOPIC ECZEMA: THE PSYCHOLOGICAL VIEW

Although the genetic component is clear, atopic eczema is regarded as a classical psychosomatic illness of infants or children. Due to the early outbreak of the disease from a psychonanalytical point of view the influence of the mother is considered to be crucial. Therefore the mother and her relationship to the affected child were focussed some decades ago.

Probably one of the most influential investigations was carried out by Miller and Baruch (1948). They interviewed 63 mothers of atopic children (one to 18 years old) and 37 mothers of emotionally disturbed children (one to 17 years old) as controls. They observed maternal rejection in 98% in the atopic group but only 24 % in the control group; maternal overprotection was observed in 57% of cases against 10%.

In the following period a number of reports insinuated rejection in mothers of atopic children. The rejection either would be manifested in hostility or would be concealed in overprotection. The mothers are described to be emotionally undeveloped and immature (Sperling, 1949; Miller & Baruch, 1950; Spitz, 1951; Rosenthal, 1952; De Graciansky & Stern, 1955; Marmor et al. 1956; Spitz, 1960; Cermak & Slany, 1971; Koblenzer & Koblenzer, 1988). The judgement is hard: 'It cannot be ignored that nearly all mothers of eczematic persons are emotionally disturbed' (Rechenberger, 1979, p. 49, translation by author).

However, this conclusion must be seen in the light of methodological flaws in the studies mentioned:

- Usually the methods are poorly described, and their validity is not clear.
- Often the researchers are not blind to the atopic status of the children. Sometimes the researcher and the therapist of mother and child are the same person.
- Control groups are missed or are inappropriate. When control groups are used the subjects are mothers of children suffering from different diseases but not mothers of healthy children.
- The samples consist of patients in hospitals with a longer medical history and no efforts have been made to differentiate between cause and effect of atopic eczema. Concerning the age of the children, the samples are very heterogenous. Babies and youths can be found in the same sample to investigate mother-child relationship.

In the last years in Germany only a very few investigations have been published to test the psychoanalytical hypotheses using psychometric questionnaires and statistical analyses. Two of them should be mentioned:

Ring, Palos and Zimmermann (1986) used a well-known and valid German personality questionnaire, the 'Freiburger Persönlichkeitsinventar' (Fahrenberg, Hampel & Selg, version 1978), to describe the personality profile of mothers with atopic children. They found the mothers as being deviant in the traits of 'spontaneous aggressiveness' and 'emotional instability'. So Ring at al. (1986, p. 559 - 560) characterize the mothers as '... to be less 'spontaneous', more 'under control' and less 'emotional' than the normal population.' And the mothers would show "... characteristic features indicating difficulties in emotional relationships with their children."

But the methodological faults are obvious: There is no control group. The subjects are only compared with the norms in the questionnaire's manual. So the deviances may have a lot of reasons. The sample consists only of 14 mothers. The children's ages range from one year to 18. Some children additionally suffer from asthma and hayfever.

Liedtke (1987, 1990) used an extensive battery of questionnaires to measure mothers' parental attitudes and mothers' view of the family's climate. He summarizes that the results would indicate "an anxious-worried, overprotective and therefore restricting mother with a mother-child relationship which can be regarded as symbiotic" (Liedtke, 1987, p. 97; translation by author).

Also in this study the deficencies are evident: The lack of an appropriate control group (the controls are mothers of children with behavioral and emotional problems and not mothers of healthy ones); the heterogeneity of the sample with regard to the age of the children; and the weakness of the statistical analyses (comparing the 30 mothers in investigation with the 30 mothers of the control group, 61 univariate t-tests are compiled without any statistical correction.)

Another and a relatively new strand in research of psychological factors in infantile eczema is the systemic perspective. The focus is the system of a psychosomatic family.

Wirsching and Stierlin (1985, p. 9 - 13) describe three basic prototypical patterns in families (see also Minuchin, Baker, Rosman, Milman & Todd, 1975): (1) 'the bound and enmeshed family', (2) 'the split family', and (3) 'the disintegrating family'.

They report that out of 29 families with teenagers suffering from eczema or asthma, 12 families could be defined as the split-family type, while the bound or disintegrating types came to eight and nine respectively. They conclude the split-family type would be characteristic for an atopic family. But the differences of the frequences are not statistically significant, and the majority of the atopic families is not split. Therefore Wirsching and Stierlin's conclusion is not correct. Again, the methodological flaws are the undescribed methods of data collection and analysis (probably clinical interviews) and the inappropriate control group of 26 families with teenagers suffering from gastroenterological illness.

QUESTIONS

Due to the methodological flaws in the reported research the problem of psychological factors in infantile eczema is still open. So three questions may be formulated:

(1) Do mothers of atopic children express personality traits in a form of an emotional disturbance?

(2) Is the climate of families with atopic children different from the climate of families with healthy children?

(3) Do mothers of atopic children prefer hostile or overprotective parental attitudes?

These questions will be answered in a series of three independent studies including partial replications (Langfeldt & Luys, 1993; Langfeldt, in press).

METHODS

Samples

To avoid the criticized flaws in all investigations the design is the same: First of all, there is a control group of mothers with healthy children, and in order to approximate the problem of cause and effect there are two samples of mothers with diseased children: the illness group 1, mothers with children whose diagnosis of eczema is very new, and the illness group 2, mothers with children whose eczema is chronic.

To ensure sociological parallelism over all samples all subject were recruited out of the clients of paediatricians in different regions of West-Germany. The cooperating paediatricians gave the questionnaires to their clients if the following criteria were fullfilled:

- the native language of the mother had to be German to avoid language difficulties in the questionnaires;
- the child must not yet go to school to avoid interferences of schooling on the mother-child relationship;
- the atopic child must not suffer from additional diseases such as asthma or hayfever.

The total sizes of all samples are: control group, N = 118; illness groups 1 and 2, N = 84 and N = 115. In all samples the means of the mothers' age range from 30 years to 31, the means of the children's age from one year to two and a half. The samples are also comparable with respect to mothers' educational level and socio-economic status.

Material

To measure the constructs to be targeted selected scales of the following questionnaires are used:

- Freiburg Personality Inventory (all titles translated by author) (Freiburger Persönlichkeitsinventar, Fahrenberg et al., 1978): the crucial scales of the study of Ring et al. (1986): *spontaneous aggressiveness* and *emotional instability*.
- Family's Climate Test System (Familienklima-Testsystem, Schneewind, Beckmann & Hecht-Jackl, 1985a, b): Scales crucial to the prototypical family patterns (Wirsching & Stierlin, 1985): *cohesion, control, independence,* and *achievement orientation.*
- Questionnaire for Parental Attitudes (Fragebogen zur Diagnostik elterlicher Erziehungsvorstellungen, revised version, Lukesch & Tischler 1975) with the scales: *hostile-rejective, authoritarian, mild-lenient,* and *overprotective.*

RESULTS

Personality

As reported, Ring et al. (1986) found that mothers of atopic children realize lower scores in *spontaneous aggressiveness* and in *emotional instability*. As table 1 shows this result could be not replicated in a direct comparison between mothers of healthy and of chronically ill children. For this comparison the illness group 2 was selected because the children in the study of Ring et al. were in hospital where children with a longer medical history are treated.

Table 1. Comparison between mothers of healthy children (control group) and mothers of chronically ill children (illness group 2) concerning two selected *personality traits*

trait:		control group (N = 50)	illness group 2 (N = 47)	significance test	
spontaneous aggressiveness	M	2.34	2.85	t -1.36	p=.18
	SD	1.77	1.93		
emotional instability	M	5.02	5.53	t -1.08	p=.28
	SD	2.59	2.01		

The differences between the two groups of mothers are not significant and numerically even in the opposite direction. Due to the careful methodological level this replication claims a higher validity than the original investigation. So, the statement mothers of atopic children would show "characteristic features indicating difficulties in emotional relationship" (Ring et al. 1986, p. 559 - 560) is rejected (for further details, see Langfeldt, in press).

Family climate

Concerning the family's climate, already the first study (Langfeldt & Luys, 1993) did not show significant differences between the control group and the illness groups. A replication resulted in insignificant differences as well (see table 2).

Table 2: Comparison between mothers of healty children (control group) and mothers of ill children (illness groups 1 and 2) concerning the four variables of *family's climate*, z-scores

climate variable:		control group (N = 50)	illness group 1 (N = 46)	illness group 2 (N = 47)	ANOVA F	p
cohesion	M	-0.01	-0,05	0.06	0.16	.85
	SD	0.93	1.03	1.05		
control	M	-0.01	-0.11	0.11	0.59	.55
	SD	1.06	0.92	1.01		
independence	M	-0.03	0.02	0.01	0.03	.97
	SD	1.01	0.90	1.09		
achievement	M	0.00	0.01	-0.01	0.01	.99
orientation	SD	0.96	0.89	1.15		

Regarding the variables of the questionnaire used it is allowed to to say that families with atopic children are cohesive, controlled, independent or achievement orientated just like other families. Remembering that even the results of Wirsching and Stierlin (1985) were not been very satisfactory the hypothesis of the split pattern in atopic families is more than weak and should be repudiated.

Parental attitudes

Comparing the control group and the two illness groups the ANOVAs in the first investigation (Langfeldt & Luys, 1993) resulted in significant effects only in the attitude *hostile-rejective*. In two independent replications this effect could be not verified, but the trend of the results is similar. Therefore, to demonstrate stable and valid results the samples of all three investigations were summarized (see table 3).

The result is clear: There is only one effect in the variable *hostile-rejective* and there are no effects in the others. In detail there is no significant difference between mothers of healthy children (control group) and mothers of children whose diagnosis of eczema is very new (illness group 1). But these two groups differ significantly from the mothers of children with chronic eczema (illness group 2). However the effect is weak. It occured only in one of three investigations, and the explained variance is small ($eta^2 = .04$) in the summarized sample.

Table 3: Comparison between mothers of healthy children (control group) and mothers of ill children (illness groups 1 and 2) concerning the four cariables of *parental attitudes*, z-scores (results of the summarized sample

attitude:		control group (N=118)	illness group 1 (N=84)	illness group 2 (N=115)	ANOVA* F	p
hostile-rejective	M	-0.08	-0.21	0.24	5.87	.00
	SD	0.94	1.06	0.96		
authoritarian	M	-0.06	-0.09	0.13	1.50	.23
	SD	0.96	1.08	0,96		
mild-lenient	M	-0.07	0.06	0.02	0.50	.61
	SD	0.95	1.01	1.04		
over-protective	M	0.01	-0.02	0.00	0.03	.97
	SD	0.87	1.14	1.02		

t-test, significance $p < .01$

*Significances do not change substantially when the groups are reduced by chance to N = 84.

CONCLUSIONS

This research does not give any hints that personality traits or parental attitudes of the mother determine the outbreak of atopic eczema, and the corresponding psychoanalytical hypotheses are rejected. Also the hypothesis of the split family pattern in atopic families could be not verified. Therefore the recommendation of some authors (i.e. Biermann, 1969; Cermak & Slany, 1971; Krüse, 1979) to treat the mother or the family in psychotherapy in order to heal the children has no empirical base.

On the other side, there are a few indications that the hostile-rejective attitude increases during the child's illness. I understand this result to be an effect of stress and burden in the atopic family.

Already in the pilot-study (Langfeldt & Luys, 1993, p. 40) we discussed the content validity of the questionnaire's scale. In regard to the items we argued that the attitude scale *hostile-rejective* does not measure an aggressive hostility but rather a feeling of burden. (Two examples of the items are: 'All children can sometimes become a heavy burden on the parents.'; 'Having children isn't always a pleasure.'). Now, we can find an empirical hint for this argument. In the control group *hostile-rejective* does not correlate with the scale of the Freiburg Personality Questionnaire *spontaneous aggressiveness* (r = .20, n.s.) but moderately with *depressiveness* (r = .36).

Indeed, the atopic child can be a heavy burden on the family. The family, usually the mother, has to cope with a lot of problems: The medical treatment and the demands of nutrition and clothing, the education of an overtired, unconcentrated child with unbearable scratching attacks, the intervals of hope and feelings of hopelessness and perhaps problems

in partnership or the loss of a career, and so on. Therefore the consequence in my research will be to identify effective strategies of coping with such problems The aim must be to develop and to establish a support system to help the families in enjoying a life as normal as possible.

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COOPERATION AND INSTRUCTION IN DYADIC PROBLEM SOLVING

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Social-constructivistic ideas have gained much influence in developmental and educational psychology. Following the impetus in Vygotsky's work, at least part of young children's cognitive and linguistic competence is seen as resulting from social interactions in the child's early social environment. However, much is still unclear regarding the specific roles of parents (or teachers) and children in 'co-constructing' competence in social interactions. This is reflected in the fact that within the broad social-constructivistic paradigm several different, and even opposite, views on appropriate strategies for teaching young children are endorsed.

In the first part of this article we will discuss implications relating to parent and child roles in co-constructing competence of two approaches within social-constructivism: the 'distancing' approach developed by Sigel and colleagues and the 'withdrawal and sharing responsibility' view in the work of Leont'ev, Rogoff and Wertsch and others. Additionally, we will discuss the 'selective withdrawal' view emerging from the work of Diaz and colleagues which offers starting points for integration these differing perspectives. Finally, we will briefly outline our own view that was developed in accordance with the critical remarks made and that was tested in the research that will be reported in the second part.

DISTANCING

Sigel has introduced the term 'distancing strategies' to characterize typical questioning-behaviors of parents in parent-child interactions, such as joint book reading and play (Sigel, 1982; Sigel & McGillicuddy-DeLisi, 1984; Sigel, Stinson & Flaugherty, 1991). Parents are said to use distancing strategies when asking their children in an open manner to explain a fact in the story or to recall an earlier fragment, thereby demanding of them to infer new, not explicitly stated information or to use retrieval and reconstruction skills, which would promote 'representational' competence. Also open-ended suggestions in play and practical problem solving which demand of the child to invent new ways of handling a toy, or solving a problem, or which elicit planning and reflection upon activities, are referred to as 'distancing', because the child has in a way to distance herself from the actual situation.

A difficulty in the distancing approach is that the focus is basically on the parents' (or teachers') behavior. Although Sigel probably does not conceive of development and its social nature as a mere transmission of 'knowledge and skills' to the child, a clear view on the child's contribution to her own development, however, is lacking. Studies by Sigel and others have reported positive correlations between children's cognitive compentencies and the use of distancing strategies by parents. These results seem to indicate that the more the parent dominates and instructs in interactions with the child, provided that it is on a high demandingness level, the greater the child's developmental benefits. A certain role of the child comprising the ability and willingness to comply and to respond adequately to parental distancing strategies, is, of course, presupposed, but little is known about how this cooperation is created and maintained in social interaction situations. However, this is not without importance in this connection, because it is not difficult to imagine a situation in which too much demandingness undermines the the cooperation of the child.

SHARED RESPONSIBILITY AND INCREASING SELF-REGULATION

A second line of research and theorizing in social-constructivism is rooted in Vygotsky's (eg., 1978) notion of internalization as a process of other-regulation toward self-regulation. This approach can be found in the works of Leont'ev (1975) who elaborated vygotskian thinking, stressing the importance of the child's active role in joint 'activity' with a more experienced other - a parent or teacher. By performing simple steps or elementary acts which have to be meaningful and guided by an educator who is responsible for the overall goal, the child will gradually learn to perform the task alone in a process of 'abbreviation' and 'internalization' of elementary acts.

Related to this basic idea of joint activity and internalisation author's such as Rogoff and Wertsch and colleagues have proposed that competence development results from increasing responsibility given to and taken by the child in joint problem solving interactions (Rogoff, 1990; Rogoff, Ellis & Gardner, 1984; Freund, 1991; Wertsch, 1985; Wertsch, Minick & Arns, 1984). In this view the role of the child in her own competence development is more clearly defined as a kind of 'developmental task'. The child should act and take responsiblity as much as possible.

Building on the activity concept, Wertsch (1985) states that the parent has to 'lure' the child into the parents' situation definition not so much by first fostering understanding and acceptance of this definition in its complexity and comprehensiveness, as by regulating the child's concrete executive acting in accordance with it. According to Wertsch (1985; p. 166) the basic mechanism of learning and development in context, 'internalisation', is this: "Rather than understanding the task and then doing it, the children seem to have done the task (as a participant in interpsychological functioning) and then understood it".

In our interpretation, Wertsch' view implies that children do not have an understanding of the problem or a suitable plan of action in advance for a problem that they can not solve alone. And if they have prior ideas and plans bearing on the task, this fact, according to Wertsch, does not play a major role in the co-construction of the child's task-competence (cf. Elbers, Maier, Hoekstra & Hoogsteder, 1992). Tacitly assumed in this view is that it is ultimately up to the child to distil a more comprehensive knowledge structure that goes beyond the sequence of mere behavioral executive steps.

However, if this is the core mechanism of learning and development, we can ask if instruction should not aim directly at the child's constructive mental activity by eliciting, supporting and instructing (use of) higher order, abstract thinking and problem solving, as is implied by Sigel's distancing hypothesis. Moreover, if we presuppose that the children's own views on the task and plans of action, lay the very 'inner' motivational foundation of active and task-directed involvement in joint problem solving, we can deduce that sharing responsibility *or cooperation*, requires a more equal balance between the child's motives and the parent's than is implied by the instruction strategy following from Wertsch' model.

AN INTEGRATING VIEW

A final illustration of the relevance of the issues raised here is offered by the Diaz, Neal and Amay-Williams (1990) study on parental teaching strategies and child responses as related to the development of self-regulation. In this study parents' verbal instructions and physical task-involvement were related to subsequent verbalization and self-regulation by the child

within the same task. The main findings indicate that the more the parent withdraws from low level instruction and executive task performance, the more the child will subsequently take over responsibility and show self-regulation. However, besides withdrawal and broad support, self-regulation was also found to be promoted by parents' giving 'conceptual instructions' instead of commands and directives. The more conceptual ('distancing') instructions were given, the more the subsequent behavior of the children showed self-regulation.

With regard to the issues raised above, the findings of Diaz et al. suggest that an integrating view is appropriate. In fact, withdrawal by the parent and concomitant attribution of responsibility to the child may be important, but should be selective and should not, or at least not to an equal degree, concern high level ('distancing') instructions.

Our study intends to contribute to such an integrating perspective. We assume that the basic mechanism of socially mediated learning and development is the child's active constructing and practizing of knowledge and skills that are afforded and rewarded in socially structured contexts. 'Internalisation' implies that the child constructs, tests an evaluates her own 'hypotheses' (theories, action-schemes or action plans) about these contexts (cf. Elbers, 1988; see also the notion of 'participatory appropriation' in Rogoff, 1990, 1993). Parents can contribute to this process, that is, can co-construct competence by arranging and defining situations, and providing instructions or plans of action that maximize both the child's commitment to the overall task definition and her responsibility for doing the task. Although, as will become clear later, cooperation does not preclude asymmetrical roles for parent and child, the concept suggests that there should be a balance between the parent's perspective and interests in the task and the child's.

RESEARCH

Design

As part of a larger longitudinal study into home environmental effects on cognitive and language development of young pre-school children (cf. Leseman, 1993, 1994; Leseman, Vergeer, Sijsling, Jap-A-Joe & Sahin, 1992), we made video-recordings of 40 Dutch mother-child dyads from different socioeconomic background who were jointly involved in a practical problem solving task. The observation data were collected in the homes when the children were aged on the average about three years. Mother and child had to build a wooden blocks construction, a kind of slide from which a marble can roll down. The dyads were given a picture of the completed construction. Additional data were collected on the children's lexical and conceptual development at ages 3;0 and 3;6, and on the family's socioeconomic status.

The video-recordings of the problem solving interactions were transcribed with respect to both verbal and non-verbal behavior of mother and child. A two-dimensional coding system was developed for coding the instruction and task-related communication content (the 'content-dimension') and characteristics of didactic tuning of the parent to the child and their cooperation (the 'cooperation dimension'). Intercoder agreement was computed per category as the pearson correlation of the numbers of counted units of two independent coders; correlations were determined on seven mother-child dyads and are listed in tables 1 and 2.

The basic assumption of the present research is that the recorded mother-child interactions mirror to a reasonable degree many more or less similar situations of 'practical problem solving' embedded in everyday caring, nuturing and household activities that make up family life. Hence, the leading hypothesis of the research is that observed differences in instruction

styles and parent-child cooperation are valid indicators of more general patterns of co-constructive social interactions in the home environment and, therefore, can also be considered to be predictors of children's cognitive development.

CODING INSTRUCTION CONTENT

A wide array of task-directed instructive and communicative behaviors of both mother and child was coded in three main categories covering the 'content dimension' (cf. Table 1).

Table 1: Coding categories of instruction content for mother and child, intercoder correlations, mean observed frequencies (in percents) and standard deviations; N=40.

Coding Categories Instruction	Intercoder correlation[1]	Mean freq. in % and sd
Mother categories		
Simple executive acts *picking a block, assembling a part of the construction*	.98	17.0% (12.2)
Lower-level communicative acts *pointing, simple directives, negative feedback explanation*	.80	16.9% (10.1)
Higher-level communicative acts *open-ended questions, strategic suggestions, reasoning*	.79	25.3% (10.0)
Mother's total mean observed frequency	.99	59.2% (11.2)
Child categories		
Simple executive acts *picking a block, assembling a part of the construction*	.99	37.2% (11.8)
Lower-level communicative acts *pointing, simple directives, negative feedback no explanation*	1.00	.9% (1.7)
Higher-level communicative acts *open-ended questions, strategic suggestions, reasoning*	.75	2.7% (3.8)
Child's total mean observed frequency	.89	40.8% (11.0)

[1] Intercoder correlations between the independent judgments of two coders were determined on seven dyads. All correlations are significant on the 1%-level.

The first category represents all simple executive (nonverbal) acts, such as picking up/placing a block and assembling part of the blocks construction. The second category represents all (verbal and nonverbal) commands to execute a simple act, including pointing to blocks and utterances containing simple location information. Also coded in this category are simple correcting and negative feedback utterances without further explanation, including negative rethorical questions, head-shaking and 'no's' or 'wrong's". In the third category all higher level instructional utterances were coded, such as open-ended strategic suggestions to reflect upon the task, to plan ahead and to compare the actual situation with the desired end-state as represented by the picture.

Although the overall contribution of mothers and children is on the average in balance as the table shows (59% versus 41%), the percents show clearly a division of labor between mother and child with respect to their specific roles in the problem solving process. Whereas the children's contribution averagely is biggest in the domain of non-verbal executive acts

(37% of all coded acts of mother and child), the mothers' contribution is especially dominant in the area of higher-level, verbal utterances (25% of all coded acts). Inter-coder agreement is satisfactory.

CODING COOPERATION

To assess cooperation different but parallel coding categories for mother and child were used, reflecting their basically asymmetrical roles in joint problem solving. Cooperation was taken as a broad construct, requiring from the mother didactic attunement of her instructions to the child, willingness to share responsibility and to accept the child's initiatives, and from the child willingness to respond to the task-demands and, whenever convenient or necessary, to follow mother's instructions. Only those acts and utterances were coded that presumably had significance for the cooperation between mother and child. The remaining acts and utterances were regarded as 'neutral'. Table 2 gives brief circumscriptions, along with mean observed frequencies in percents and their standard deviations.

Table 2: Coding categories of cooperation for mother and child, intercoder correlations, mean observed frequencies (in percents) and standard deviations; N=40.

Coding Categories Cooperation	Intercoder correlation[1]	Mean freq. in % and sd
Mother categories		
Not-attuned instruction to the child *not-involving, unclear instructions, overruling, not-following*	.95	21.0% (16.4)
Following the child's perspective *accepting child's proposals, following child's acts, adjusting*	.73	6.1% (7.7)
Neutral acts and utterances *No significance for cooperation, continuing cooperation mode*	.99	33.1% (16.0)
Total mean observed frequency in %	.88	59.2% (11.2)
Child categories		
Not-following mother's instruction *rejecting/disregarding task-relevant instructions by the mother*	.23[2]	5.2% (6.7)
Following the mother's instruction *accepting directives/suggestions, contingently reacting*	.69	6.7% (5.8)
Neutral acts and utterances *No significance for cooperation, continuing cooperation mode*	.88	28.9% (11.3)
Total mean observed frequency in %	.91	40.8% (11.0)

[1] Intercoder correlations between the independent judgments of two coders were determined on seven dyads. All correlations but one are significant on the 5%- or 1%-level.

[2] This correlation is not significant. Due to low observed frequencies minor disagreement causes a low intercoder correlation.

The first category to code mother's didactic and cooperative behavior comprises acts or utterances which were 'not-attuned' to the child, that is, when mother gave irrelevant, ambiguous, incomprehensible or simply wrong instructions, as was inferred both from the content of the instruction and from the child's signaling non-understanding or distractedness. Also incidents when mother assembled part of the construction without trying to involve the child, were coded as not-attuned. Finally, also counted in this category were incidents of mother

overruling the child's initiatives by not-following the child, and by forcing the child to comply to mother's own plan.

In the second category the acts and utterances of the mother were counted that indicated explicitly that mother followed and reinforced, either verbally or non-verbally, for example by nodding, the child's task-adequate executive acts and utterances, or by explicitly adapting her own plan of action to the child's initiatives and ongoing acts.

The child's verbal and nonverbal cooperative behaviors were coded in two categories which are more or less parallelling both mother categories. In the first category acts and utterances of the child were coded that were explicit refusals to follow task-adequate instructions and suggestions by the mother. In the second category acts and utterances of the child were coded that were contingent responses to a suggestion or instruction by the mother that almost always resulted in a successful step in the problem solving process.

The table shows that averagely about 38% of mothers' and children's acts and utterances had a special meaning for or impact on the cooperation during the blocks construction task; about 62% of the units were coded as 'neutral' in this respect. Inter-coder agreement is satisfactory with one exception.

RESULTS

Correlations with social background and development

In a correlational analysis, we found moderate to strong correlations between the cognitive 'demandingness or distancing level' of the content of the instructions given by the mother and the family's socioeconomic status (SES), an composite index of both parents' educational level. The correlations of the coding categories representing the instruction content with composite indexes of receptive vocabulary and basic logo-mathematic and semantic-taxonomic concept knowledge, indicating the general cognitive developmental level of the children at ages 3;0 and 3;6, are also strong and significant in the expected direction: the proportion of mother's utterances on a higher cognitive level (open-ended strategic suggestions, reasoning about the problem, et cetera), correlates positively with SES ($r=.38$, $p < .05$) and with the developmental measures ($r=.51$ and $r=.62$, $p < .01$). In contrast, the degree to which mother herself performs executive steps correlates sifnificantly negatively with SES ($r=-.32$, $p < .05$) and the developmental measures ($r=-.39$ and $r=-.41$, $p <.01$). Particularly pronounced are the negative correlations of the proportions of lower level communicative acts of the mother with SES and cognitive developmental level, respectively, $r=-.49$ ($p < .01$), $r=-.65$ ($p < .01$) and $r=-.58$ ($p < .01$).

The corresponding child behaviors show a different pattern of correlations. Although again high-level utterances are positively correlated with background and developmental level ($r=.32$, $r=.40$ and $r=.32$, $p < .05$), whereas the correlations of the proportion of lower-level acts with SES and development are neglectable, it is especially noteworthy that the child's performing simple executive acts is also positively (and certainly *not* strongly negatively, as in case of the mother) related to the outcome variables ($r=.28$ and $r=.36$, $p < .05$).

Regarding cooperation, the results show that the proportion of times the mother is not well-attuned to the child, ie., gives unclear instructions, fails to involve the child in the problem solving process or overrules the child's perspective, correlates moderately to strongly negatively with SES ($r=-.50$, $p < .01$) and developmental level ($r=-.59$ and $r=-.62$, $p < .01$). Correspondingly, the proportion of times the child refuses to follow her mother's appropriate

instructions correlates also negatively with SES ($r=-.30$, $p < .05$) and with developmental level ($r=-.42$, $p < .05$, with cognitive level at age 3;0 and $r=-.52$, $p < .01$, with cognitive level at age 3;6). Lack of cooperation between mother and child is negatively associated both with SES and developmental outcome.

CORRELATIONS BETWEEN MOTHER'S AND CHILD'S BEHAVIOR

We have also looked at the correlations between mothers' and children's behaviors within this problem solving interaction. With respect to the content dimension, the results indicate that the degree to which the child is in charge of the actual executive performance is moderately to strongly related to the mother's behavior. For example, the more the mother performs executive acts, the less active the child is (indeed, can be!) involved in rebuilding the marble slide ($r=-.49$ $p <.01$).

The relationships of mother's higher-level instruction with the child's behavior are more or less complementary. Higher-level instruction by the mother is strongly associated with executive task performance by the child ($r=.62$ $p < .01$); it also relates positively to communicational involvement of the child, especially to higher-level communicational involvement ($r=.37$ $p < .05$). Higher-level instruction and task-related communication by the mother is also clearly associated with a greater inclination of the child to cooperate (ie., the child is following his mother: $r=.49$, $p < .01$). Whereas lower-level instruction and communication by the mother relates to a stronger tendency of the child to reject his mother's proposals ($r=.58$, $p < .01$).

Finally, mother's cooperative behavior is moderately strongly related to the child's cooperative behavior. Mothers who are not well-attuned to their children in jointly solving the blocks task (giving more irrelevant or unclear instructions; more often failing to involve the child, to accept relevant proposals and ideas of the child; more often overruling the child's perspective, have less actively involved children ('mother is not attuned' with 'child's executive performance': $r=-.48$, $p < .01$; 'mother follows the child' with 'child's executive performance': $r=.54$, $p < .01$). Their children are less cooperative ('mother is not-attuned' with 'child does not follow mother': $r=.39$, $p < .01$)). In contrast, mothers who are inclined to follow their child, have less often children who refuse to cooperate ($r=-.35$, $p < .05$)

DISCUSSION

In practical problem solving interactions with children of this young age, parents appear on the average to be responsible for the overall regulation and monitoring of the problem solving process. Children, in turn, appear on the average to be mainly responsible for the actual task performance.

Returning to the issues raised in the first part of this article, our findings support the view that children play an important role in the co-construction of their own knowledge and skills. Consistent with the views of Rogoff and Wertsch, we found that the more responsibility children get or take, that is, the more they are in charge of the actual performance, the more competent they are.

The finding that the child's involvement and cooperation seem to be promoted more by relatively high-distancing instruction than by lower-level verbal directives, however, is not

consistent with our interpretation of Wertsch' view that children master a complex problem by performing under guidance in a step-by-step fashion. As a matter of fact, our results seem to indicate that active involvement of the child, even on the basic level of performing elementary executive steps, is enhanced when parents follow the child's initiatives and plans of action, and give higher level, more abstract, instead of lower level, more concrete and direct guidance.

The pattern of correlations with background and outcome measures found for the three levels of instruction content that were distinghuished, indicate that instructive content or, to be more precise, the 'distancing level' of the parent's contribution matters. Ideally, from the point of view of enhancing development, parents refrain from doing executive steps themselves and from giving lower-level directives and instructions. Instead, they participate with higher level 'distancing' instruction and communication. The pattern of correlations with cognitive development we found is consistent with the 'distancing hypothesis'.

In the first part we raised the question whether distancing, too much distancing, could undermine the child's cooperation and involvement. This apparently does not happen. On the contrary, higher-distancing instruction is associated with stronger communicational and executive involvement of the child. Our findings are consistent with the results of the study by Diaz and colleagues that indicated that withdrawal of parental involvement should be selective and should concern especially lower level concrete directives but not necessarily higher level conceptual instruction.

Successful cooperation between parent and child is probably a pre-condition to whatever developmental effects can be expected from instruction. From the point of view of the parent, it is important to refrain from interventions that are unclear, or do not fit in well with the child's view and current actions or that overrule the child's task-directed activity. It is also important to accept and value the child's perspective and follow the child on his (partly) self-initiated trajectory through the problem-space. From the point of view of the child, it is important to accept and follow instructions whenever it becomes convenient or necessary, for example when the child is stuck in the problem-solving process.

Parents have different styles of interacting and cooperating with young children which appeared to be rather strongly related to socioeconomic status. Some parents offer ample opportunity to the child to explore the problem space, to try several steps and strategies, offering strategic suggestions or asking open-ended questions promoting a more extensive search of the problem space. They are willing to follow the child's perspective and interfere only when the child asks for or obviously needs support. Other parents are strongly inclined to regulate the whole process in a step-by-step fashion by giving concrete executive commands to the child, by overruling or not-following the child's initiatives. Some of them simply build the marble slide themselves.

It is tempting to infer that these differences in interaction styles are at the root of early arising developmental differences between children from different sociocultural background, leading to educational lags as soon as they enter the school system. To find out to what extent this is true, is the main objective of our research project of which the present study is a part.

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PORTAGE IN THE NETHERLANDS
DESCRIPTION AND EVALUATION OF RESEARCH PROJECTS

W.G. Sipma and B.F. van der Meulen

The most important question to be asked in scientific research on early intervention is: does early intervention have any effects? This question is difficult to answer.
Firstly, because early intervention is a rather broad term; there are many different kinds of intervention for families with young children having (threatening) developmental problems (Guralnick & Bennet 1987). Secondly, different methods have been used to investigate the effects of intervention and contradictory results have been found. Moreover, the question whether the effects are enduring often remains to be answered. A third difficulty is given by the fundamental question whether changes in the child or the family can really be attributed to the intervention. From a theoretical point of view it is plausible that many factors influence the development of young children. A fourth problem is the correct match of characteristics of the child and the family on the one hand, and the characteristics of the program on the other hand.

In spite of many scientific attempts, the questions stated above have not been satisfactorily answered yet. However, as a method early intervention has been spread fast and widely. Apparently, the practical experiences are evaluated positively, the importance of early intervention is generally accepted, and parents and child seem to profit by it.

The Portage Program (Shearer & Shearer 1972, 1974) is one of the intervention programs that has been applied worldwide, and whose effects have been investigated from time to time. This originally American home based program is meant for the guidance of parents having a young child with developmental problems. Since 1987 we have studied the Dutch version of this program (Van der Meulen & Sipma 1993) . At the moment several institutions specialized in helping families with handicapped children (in Dutch: Sociaal Pedagogische Diensten) in the Netherlands use this program, or similar programs. During our studies it became clear that it is difficult to carry out thorough scientific research on families with young children which often are in a vulnerable position. Yet we have succeeded in investigating the effects of the program on a quite a lot of variables. This chapter presents results on the effectiveness of this home-based program. We do not pay attention to the center-based version of the Portage Program (Van Oudheusden, Van Marle-Dekker, & Van der Meulen, 1993).

Firstly, we will present a definition of early intervention that is applicable to our situation, and review some common problems in evaluation research; secondly, we will give you a short introduction on the Dutch version of the Portage Program; thirdly, we will present the results of four Dutch studies, and compare these to some foreign studies. At the end of this presentation we will return to our main question: Is early intervention effective?

EVALUATION RESEARCH ON EARLY INTERVENTION

Guralnick and Bennet (1987) stress that early intervention refers to a collection of different early interventions, each varying widely in its goals, nature and scope." (p 20). We heartily agree with this view on early intervention. In our opinion these authors formulated one of the most useful definitions: *"Early intervention services constitute a systematic and planned effort*

to promote development through a series of manipulations of environmental or experiential factors initiated during the first five years of life." (ibidem, p 19).

For intervention in the Dutch situation we have extended this definition: the intervention should be carried out (1) at home, (2) with the cooperation of the parents, (3) by professional home teachers, (4) and start as soon as possible after developmental problems are detected.

To be able to interpret the results of evaluation research of early intervention, it is necessary to discuss first how the actual intervention takes place. This is often done insufficiently (Guralnick, 1991). Intervention programs differ in several respects from each other, such as: focus, rational, object, place, duration and intensity of intervention, age at which interventions starts, involvement of parents, type of program, goals and population (Guralnick & Bennet, 1987; Sipma & Van der Meulen, 1991; Gallagher, 1990; Baker, 1984). We will go deeper into these aspects when the Portage Program will be discussed.

An intervention program must be severely tested, before acceptable statements about its effectiveness are possible. Evaluation research should be carried out with instruments matching the goals of a specific program. A number of specific problems that go together with scientific research on families with young handicapped children are: the heterogeneity of the population, difficulties with instrumentation, non-applicability of standard norms, anddifficulties in composing control groups.

Campbell and Stanley (1966) point to another serious problem: 'A reactive effect can be expected whenever the testing process is in itself a stimulus to change rather then a passive record of behaviour.' (p 9).

Because of clinical demands, sometimes compromises have to be reached with scientific claims. This probably explains why, in spite of the ambiguous effects, early intervention is nowadays applied worldwide. This brings with it the risk that too much will be expected of early intervention (see Farran, 1991).

When the aim of the intervention is to improve developmental rate, it is necessary to measure the change in rate of development with instruments other than the intervention materials, for instance, with standardized developmental tests. Ideally we should collect data on developmental progress by testing every child more than twice: several times before, during and after the intervention period.

To express the intervention effects, we introduced following Wolery (1983) a very simple index called the Index of Progress (Van der Meulen & Sipma, 1990; see Figure 1). This index is based on the use of three measurement points to estimate pre- and post-intervention developmental rate. The developmental rate refers to the relationship between Developmental Age and Chronological Age. A developmental rate with value 1 corresponds with the standard developmental rate.

The index is based upon the difference between two developmental rates:
[1] Rate of development before intervention: (DA2-DA1)/(CA2-CA1).
[2] Rate of development after intervention: (DA3-DA2)/(CA3-CA2).
An estimation of the effect of intervention for each person is the difference between [2] and [1]. Figure 1 shows three typical values of this index.

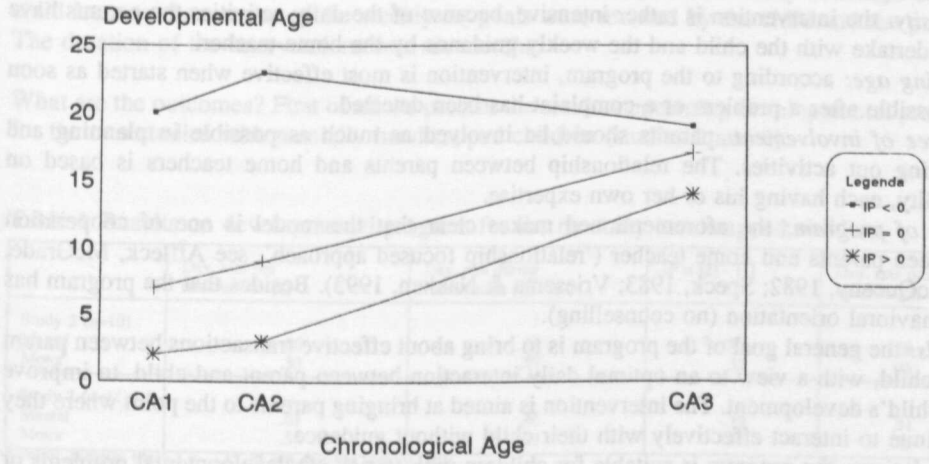

Figure 1: Illustration of the Index of Progress

Comments on this figure:
IP>0 developmental rate accelerated during intervention; IP=0 developmental rate pre equals developmental rate post; IP<0 developmental rate decelerated during intervention

The IP-results in the Dutch studies will be discussed later, first we introduce the Portage Program.

DUTCH RESEARCH ON THE EFFECTS OF PORTAGE

The Portage Program was developed in the USA at the end of the seventies. It is a home based intervention program for young children with developmental problems, and a mental age between zero and six years. The primary aim of the program is to stimulate the development of a child playfully by supporting his daily caretakers. Another aim is to improve the interaction between parent and child.

Since intervention programs may differ greatly from each other, we will now describe the Portage Program on the basis of the previously mentioned aspects:

Rational: the Portage Program is based on a transactional developmental model (Sameroff & Chandler, 1975, 1990). The assumption of this model is that the development of a child is the resultant of a continuous, reciprocal influence of environmental and child factors.

Object: intervention is directed at the transactions between parent, child and immediate environment.
Location: the intervention takes place in the child's daily environment.
Duration: in all cases the period during which the intervention takes place must be settled with the parents in advance.
Intensity: the intervention is rather intensive, because of the daily activities the parents have to undertake with the child and the weekly guidance by the home teacher.
Starting age: according to the program, intervention is most effective when started as soon as possible after a problem or a complaint has been detected.
Degree of involvement: parents should be involved as much as possible in planning and carrying out activities. The relationship between parents and home teachers is based on equality, each having his or her own expertise.
Type of program: the aforementioned makes clear that the model is one of cooperation between parents and home teacher ('relationship focused approach', see Affleck, McGrade, & McQueeny, 1982; Speck, 1983; Vriesema & Nakken, 1993). Besides that the program has a behavioral orientation (no counselling).
Goals: the general goal of the program is to bring about effective transactions between parent and child, with a view to an optimal daily interaction between parent and child, to improve the child's development. The intervention is aimed at bringing parents to the point where they continue to interact effectively with their child without guidance.
Populations: the program is suitable for children with (a risk of) developmental problems or disturbances, and a the mental age of zero to six years, and their daily caretakers. The program can also be applied to parents and children with problems in their interactions which cannot directly be attributed to a (suspected) handicap of the child. Because of its flexibility the program can be used with families from all social strata. A prerequisite is that caretakers are prepared and able to put energy into the program. Serious psychiatric problems in the caretakers means a contraindication.

In the Netherlands the effects of the Portage Program have been investigated in two different populations: (1) mentally handicapped children and their parents (Sipma & Van der Meulen, 1991) and (2) non-compliant children and their parents (Bulsink, Van der Meulen, & Smrkovsky, 1988; Sipma, & Van der Meulen, 1994; Sipma, Van Iddekinge & Van der Meulen, 1994). Examples of the latter are: children with eating and sleeping disorders, or non-playing children, and parents who feel very uncertain about their upbringing. Our studies served three goals: the intervention itself, evaluation research, and the implementation of the Portage Program in the Dutch situation. This presentation only considers some aspects of the effectiveness of the program, namely effects on the developmental progress of the children. This has been investigated in four different studies: Study 1, 1987-1988, non-compliant children (n=11); Study 2, 1989-1991, children with developmental delays (n=11); Study 3, 1989-1991, children with developmental delays (n=10); Study 4, 1991-1995, non-compliant children (n=48). Studies 1 and 4 focus on mild rearing problems; studies 2 and 3 concern children with severe mental handicaps.

For practical reasons it was not possible to apply an experimental or a quasi-experimental design. Instead of that we used a one-group pretest-posttest design. For the estimation of the effects on the developmental progress of the child we administered a standardized developmental test twice, before the actual intervention started. This served as a baseline of developmental progress. The effects of intervention are expressed in the Index of Progress, which we described earlier.

Of course, developmental progress was not the only dependent variable. The focus was also on pedagogical variables, such as quality of the home environment, rearing stress of parents, quantity and quality of non-compliant behaviour of the child, and so on. In addition to that, systematic attention was given to the opinions of parents and home teachers, as well as to the so-called direct results of intervention (for example, how many activities did the child learn, or how many of the weekly set goals were reached by the child and the parent). The duration of the interventions was six months.

What are the outcomes? First of all we present the results concerning developmental progress for the two studies with mentally handicapped children (studies 2 and 3).

Table 1 Results on developmental progress for the mentally handicapped children

	Dev. rate pre intervention [1]	Dev. rate during intervention [2]	IP = [2] - [1]	Dev. rate post intervention
Study 2 (n=10)				
Mental	-.06	.64	.70*	.09
Motor	.30	.87	.57	.06
Study 3 (n=11)				
Mental	.65	.46	-.19	.51
Motor	.58	.59	.01	.33

* Paired samples t-test: t = -2.35, df = 8, one-tail prob. = .021

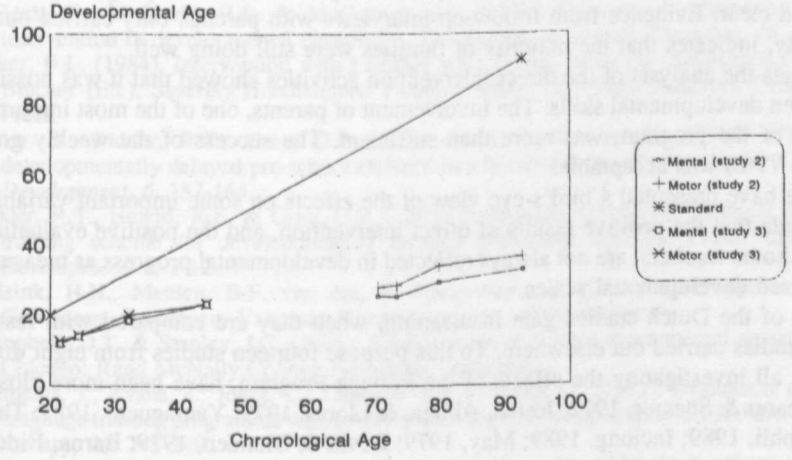

Figure 2: Average developmental rates of the mentally handicapped children in study 2 (n=10) and study 3 (n=11)

Table 1 shows the developmental rate (averaged over the children per study) before, during and after intervention, for both mental and motor development. A value of 1 corresponds with the standard developmental rate. The column headed 'Index of Progress' is especially relevant for our discussion. As you can see, a significant positive effect on the development of the children could be demonstrated, in only one sample (study 2). However, the follow-up results showed a relative decrease in the developmental rate after the intervention period: a regression to the original developmental rate can be observed. Figure 2 visualizes the average developmental rate of these two groups of mentally handicapped children.

We observe a positive kink for the mental development only in study 2. This figure demonstrates one of our research problems. The mentally handicapped children in study 3 scored higher at the second measurement point, but this was probably due to testing effects. This is of course highly inconvenient, because in fact higher scores were expected for the following third measurement point as a result of the intervention.

The other two studies (studies 1 and 4) concerned the non-compliant children. There we had a similar research problem. The reactivity of the measurement resulted in a relatively high rate of development before intervention. The baseline period between the two pretests was only one month, apparently too short compared to the two-month baseline chosen in the studies with the mentally handicapped children. This is a pity, because we expected that if intervention would be successful in families with non-compliant children, their development would also profit by it.

The effects on other variables were easier to investigate in all four studies. In most cases the quality of the home environment increased after intervention. Also the seriousness of the children's problem behaviours, only measured in study 4, showed a statistically significant decrease. However, this could not be found for another crucial variable, namely rearing stress.

In general, the parents, home teachers and their coordinator evaluated the effects of the intervention positively. Most parents found the systematic procedures of the program pleasant, stimulating and clear. Evidence from follow-up interviews with parents, only carried out in the fourth study, indicates that the majority of families were still doing well.

For all studies the analysis of the direct intervention activities showed that it was possible to teach children developmental skills. The involvement of parents, one of the most important starting-points of the program, was more than sufficient. The success of the weekly goals (range 64% to 77%) was acceptable.

In short: we have presented a bird's-eye view of the effects on some important variables. We can conclude that the positive results of direct intervention, and the positive evaluations of parents and home teachers, are not always reflected in developmental progress as measured with standardized developmental scales.

The results of the Dutch studies gain in meaning, when they are compared with results from similar studies carried out elsewhere. To this purpose fourteen studies from eight different countries, all investigating the effects of the Portage Program, have been more closely examined (Shearer & Shearer, 1972; Jesien, Alinga, & Llonis, 1979; Yamaguchi, 1989; Thorburn, 1989; Kohli, 1989; Inciong, 1989; May, 1979; Revill & Blunden, 1979; Barna, Bidder, Gray, Clements & Gardner, 1980; Clements, Evans, Jones, Osborne, & Upton, 1982; Bidder, Hewitt, & Gray, 1983).

The majority of these studies used a pre-experimental design. Few studies choose a quasi-experimental design; few studies had an experimental and a control group.

Most studies paid attention to the variable developmental progress. It seems that when studies are more controlled and development measured more than twice, it becomes less easy to demonstrate a positive effect of intervention on the child's development.
However, all studies reported positive results on direct intervention activities and evaluations of persons involved. None reported results on follow-up research.

CONCLUSIONS

Now we go back to the main question, Is early intervention effective? We studied the effects of the Portage Program in two populations: the mentally handicapped and the non-compliant children. We could demonstrate a significant effect on the mental development of only one out of four groups of children. Results in other countries confirm our idea, that one should exercise care with respect to the effects of intervention on development. However, we observed positive changes in the number of abilities the children mastered and also the weekly goals succeeded satisfactorily. These findings agree with results found abroad. Parents' and home teachers' evaluations on the effects of intervention were positive.
Some final conclusions:

1 We need more well controlled studies
2 Only careful statements of effectiveness in early intervention are acceptable.
3 Only on the basis of these two can we avoid creating unrealistic expectations in the parents of the children concerned.

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ATTRIBUTIONS OF PARENTS WITH YOUNG CHILDREN

H.A. van der Stege

Why are children the way they are and why do they behave the way they do? Parents have certain ideas about this and they can indicate which factors, such as genetics, child-rearing practices and environment, are of importance in the development of their child. We examined if variables like 'the number of children' and 'having much experience with children in general' are related to the factors that influence the development of the child. For this purpose we have used the covariation principle of the attribution theory (Heider, 1958; Kelley, 1967).

The covariation principle explains how causal attributions of people are effected: a certain condition is considered responsible for the effect, if condition and effect covary. This means that when the condition is absent, the effect is absent too, and when the condition is present, the effect also is present. Himelstein, Graham and Weiner (1991) have applied this principle to the beliefs of parents. They stated that parents with only one child have other attributions than parents with several children. Because, the latter are daily confronted with the fact that children are different. Therefore, for parents with more children it is difficult to experience a relation between their own childrearing behaviour (the condition) and how children finally become (the effect). They experience a discrepancy between their own childrearing behaviour and the fact that their children differ from each other. This is different for parents with only one child, because they are not confronted with behavioral and personality differences. For parents with one child it is easier to belief that there is a relation between their behaviour and the development of the child.

To put it briefly, the 'child-rearing practices' factor is more important for parents with only one child than for parents with more children. Himelstein, Graham and Weiner (1991) found empirical support for the covariation hypothesis in a sample survey of 194 parents with children aged between 5 and 17.

In our study we verified whether the covariation principle also holds true for a population of Dutch parents with young children (0 to 6 years old). Moreover we examined the factor of 'having experience with children in general'. By this we mean the extent to which a parent is acquainted with other people's children. The reason for this is the following: Himelstein, Graham and Weiner (1991) questioned parents with one child and parents with more than one child. One may state that parents with several children have more experience with children than parents with only one child. It is possible that the variables 'number of children' and 'having experience with children' intertwine. Such an intertwining - or confounding variable - might cast a different light on the results obtained by Himelstein, Graham and Weiner. Perhaps not the 'number of children' but 'the experience with children' caused particular parental ideas.

Our question is whether parents who have much experience with children (not their own) 'attribute in the same way' as parents that have several children. Attributing in the same way implies that parents that have little experience with children, as well as parents that have only one child will find parenting more important than parents that have much experience with children and parents that have more children.

We have used the questionnaire developed by Himelstein (1987). In this questionnaire parents were asked to indicate the degree of importance of factors as genetics, parenting and

environment when they consider the development of their child. We have also added some questions about parents' experience with other children.

The research questions in our study read as follows: (1) Does the covariation hypothesis hold true in a Dutch sample of parents with young children? In other words: Will parents with one child find the influence of parenting more important than parents with more than one children. (2a) Is there a relation between the degree of experience parents have with other children and their ideas regarding factors like genetics, parenting or environment? (2b) Does the relation in 2a show the same pattern as in 1? In other words: will parents that have little experience with other children find parenting more important than parents that have much experience with other children?

METHOD

Sample

We have used an existing sample from a study of opinions expressed by day-care centre users (Van Dijke, Terpstra and Hermanns, 1994). In this study, 900 young parents were approached via home-nursing services and day-care centres. These parents were interviewed at their homes. At the end of the interview, it was asked whether they were willing to participate in another research and fill in a questionnaire containing questions about 'parental ideas'.

From this group, 625 parents declared themselves willing to participate in this research. All received a questionnaire and a stamped addressed envelope. Out of this group, again, 221 sent their questionnaires back (35% response). Five were unmarked and therefore not suitable for statistical processing. The parents were asked to fill in the questionnaire for one of their children that was aged between 2 and 4 or for a child whose age was as close to this limits as possible. In our research we have used all the questionnaires that were filled in for children between 0 to 6 years old. Out of 216 questionnaires 12 were left out of consideration, because they contained data of children aged 7 or older.

The professional and educational level of the respondents is higher than the national standard; 54% of the parents that participated had received higher education (higher vocational education, university), 38% secondary education and 8% lower education. For comparison: according to CBS data for 1990, in the Netherlands 20% of the women and 25% of the men between 25 and 44 years old had higher vocational and university education.

Questionnaire

The 'Parent Questionnaire' developed by Himelstein (1987) was translated for the study of the Dutch sample. The following question, in which the explaining factor and the development field of the child varied constantly, was used nine times:

To what degree have *biology and genetics* determined your child's *social skills*?

Apart from 'social skills' questions referring to 'personality' and 'learning' were also used. The explaining factors here were as follows: 'biology and genetics', 'childrearing practices' (things you've done as a parent) and 'environmental experiences' (things outside the control of you and your child). The answers were completed on an eight-points scale, where 1 stands for 'not at all determined' and 8 for 'greatly determined'.

Three questions were added in order to determine the experience parents had with children in general. They were asked how often other children visited their home, whether the parent him/herself considered he/she had already much experience with children before having

children him/herself and, finally, whether via his/her profession or voluntary work the parent had already had much to do with children.

RESULTS

General results

The means and standard deviations are presented in Table 1. This table and Figure 1 show that the level of the mean scores varies for each domain of development. Parents' ideas with respect to genetics (g), for instance, appear to fluctuate.

Table 1
Mean attribution scores of 204 parents on eight-point scales, specified for domain.

	learning		social skills		personality	
	m	s.d.	m	s.d.	m	s.d.
Genetics	5.88	(1.12)	5.19	(1.56)	6.14	(1.20)
Parenting	5.97	(1.11)	6.34	(1.05)	5.89	(1.19)
Environment	5.25	(1.38)	5.36	(1.39)	4.89	(1.37)

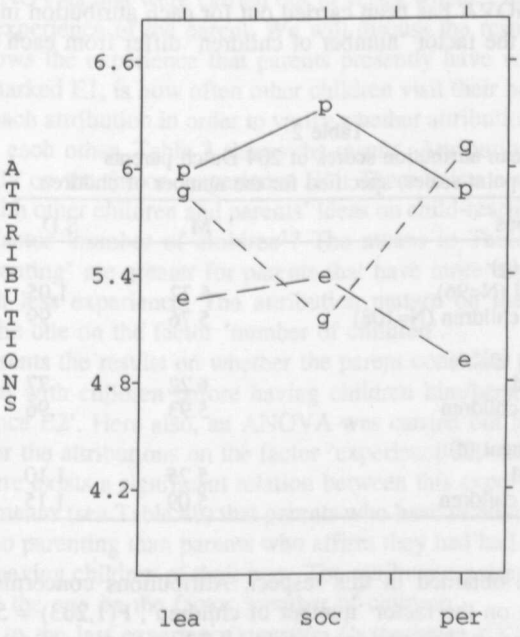

Figure 1: Mean scores of Dutch parents (N=204) on eight-point scales about the perceived influence of genetics (g), parenting (p), or environment (e) on the development of their child (learning, social skills, personality).

An analysis of variance (number of children x domain, MANOVA with repeated measurements on the last factor) has been carried out for each of the three attributions (genetics, parenting, environment). The 'domain' appeared to be a significant main effect in all the analyses ($p<.001$). We may state that the answers vary significantly for each development domain of the child.Apart from fluctuations per domain of development, in Figure 1 one can see that attributions also differ considerably from each other. So, the mean scores for parenting (p) are higher than the mean environmental scores (e). To verify whether attributions do, indeed, differ significantly from each other, we have determined a mean total score for each attribution. By means of an analysis of variance we checked whether these mean total scores differ from each other (number of children x attribution, MANOVA with repeated measurements on the last factor). The factor 'attribution' proved to be a significant main effect ($F(2,404)=54.4$, $p<.001$). The answers show that attributions differ significantly.

The construction lines in Figure 1 cross each other. We may state that the degree in which genetics, parenting and environment are found important, depends on the development domain of the child. So, we can see that parents attach more importance to 'parenting' (p) than to 'genetics' (g), when they refer to the social skills of their child. However, this does not hold true for the child's 'personality': here, the score on 'genetics' is the highest.

When we verify this interaction effect by means of an analysis of variance (MANOVA with repeated measurements on the nine attribution items) a significant interaction appears to exist between attribution and development domain, $F(4,808) = 40.74$, $p<.001$). We may state that the answers on the attribution scale and the answers referring to the development domain are not independent from each other.

The covariation hypothesis

Table 2 presents the means of the three attributions (across all domains), divided over the number of children. An ANOVA has been carried out for each attribution in order to verify whether the attributions on the factor 'number of children' differ from each other.

Table 2
Mean attribution scores of 204 Dutch parents
on eight-point scales, specified for the number of children.

Attributions	M	S.D.
Genetics (g):		
One child (N=96)	5.72	1.05
Multiple children (N=108)	5.76	.99
Parenting (p):		
One child	6.22	.77
Multiple children	5.93	.96
Environment (e):		
One child	5.25	1.10
Multiple children	5.09	1.15

Table 3 shows the results obtained in this respect. Attributions concerning child-rearing practices vary significantly on the factor 'number of children', $F(1,203) = 5.65$, $p<.05$. The means in Table 2 show that attributions concerning 'child-rearing practices' are greater for parents with only one child than for parents with more children, which supports the

covariation hypothesis. When, like Himelstein, Graham and Weiner (1991), we analyze the attributions one by one by means of an ANOVA, we find a significant difference between the number of children a parent has and the degree in which this parent attaches importance to 'parenting'. In this way, both the American research and our own study appear to support the covariation hypothesis.

Table 3
ANOVA results

	Genetics	Parenting	Environment
Number of children	.07	5.65*	.90
Experience E1	.00	6.63*	1.52
A x E1	.00	1.11	.10
Experience E2	.06	4.77*	.56
A x E2	.91	3.76	.10
Experience E3	.84	1.51	.13
A x E3	3.08	4.93	.53

Entries in the table are F values, df=1,200. * p<.05

Experience with children

Tables 4a and 4b present the means of the three attributions divided over parents' experience with children. Each table displays the results of an experience question. Table 3 shows the results of the ANOVAs that were carried out to verify whether the various attributions differ as regards the experience of the parent. We will discuss the results one by one.

Table 4a shows the experience that parents presently have with other people's children. The question, marked E1, is how often other children visit their house. An ANOVA has been carried out for each attribution in order to verify whether attributions on the factor 'experience E1' differ from each other. Table 3 shows the results. Attributions concerning child-rearing vary significantly on the factor 'experience E1'. There exists a relation between the degree of experience with other children and parents' ideas on child-rearing. Does this show the same pattern as the factor 'number of children'? The means in Table 4a show that attributions concerning 'parenting' are greater for parents that have more experience with children than for parents with less experience. The attribution pattern on the factor 'experience E1' is different from the one on the factor 'number of children'.

Table 4b presents the results on whether the parent considers that he/she had already had much experience with children before having children him/herself. This question has been named 'experience E2'. Here also, an ANOVA was carried out for each attribution in order to verify whether the attributions on the factor 'experience E2' differ from each other. Table 3 shows that there exists a significant relation between this experience and parents' ideas on parenting. This means (see Table 4b) that parents who have relatively more experience ascribe more influence to parenting than parents who affirm they had had little experience with other children before having children of their own. The attribution pattern on the factor 'experience E2' differs from the one on the factor 'number of children'.

With respect to the last experience question ('experience E3') no significant differences have been found between parents. Experienced parents (through profession or voluntary work)

scored more or less the same as unexperienced ones when indicating the degree of importance they attach to parenting.

Table 4a
Mean attribution scores of 204 Dutch parents on eight-point scales, specified for experience with other children (question E1).

Attributions		E1 M	S.D.
Genetics (g):			
never/rarely	(N=18)	5.72	.81
regular	(N=186)	5.74	1.03
Parenting (p):			
never/rarely		5.66	.84
regular		6.10	.88
Environment (e):			
never/rarely		4.90	1.19
regular		5.19	1.12

Table 4b
Mean attribution scores of 204 Dutch parents on eight-point scales, specified for experience with other children (question E2).

Attributions		E2 M	S.D.
Genetics (g):			
no/little experience	(N=84)	5.69	1.01
much experience	(N=120)	5.77	1.02
Parenting (p):			
no/little experience		5.92	.94
much experience		6.17	.83
Environment (e):			
no/little experience		5.10	1.23
much experience		5.21	1.05

The first experience questions have revealed significant differences between parents. The attribution pattern, however, is different than the one noticed on the factor 'number of children'. By these two experience questions we notice that when parents have (or had) more to do with children, they are more inclined to score high on the parenting scale. By 'number of children' one notices quite the reverse picture: parents with only one child ascribe more influence to parenting than parents with more children. The experience mechanism does not seem to play a role here.

As we can see in Table 3, there are no interaction effects between the number of children and parents' experience. For instance, one does not notice that parents with more children indicate that they have more experience, nor that they have less.

Finally, Table 5 presents parents' scores on the child-rearing scale, where parents' experience has been combined with the number of children they have. Parents that have 'much experience' and only 'one child' show the highest scores on the experience questions E1 and E2. Parents with 'little experience' and 'more children' show the lowest scores.

Other factors

Subsequently, we have verified whether, apart from 'the number of children', other factors could be important for the attributions concerning genetics, parenting, and environment. We have examined the following factors: respondents' gender, child's gender, respondents' age (parents in their twenties versus parents in their thirties and forties), child's age (0-2 years old versus 3-6 years old), respondents' profession. None of these factors show any significant differences.

Respondents' profession did provide a significant effect on attributions, $F(4,386) = 4.07$, $p<.01$. Lower educated parents (n = 16) appeared to score differently on the attribution scales than parents who had followed secondary and university education (together n = 188). The lower educated group scored .40 higher on the child-rearing scale (approximately one half of a standard deviation) than the group that had followed secondary and university education.

Table 5
Mean attribution scores about parenting on an eight-point scale.

	M	S.D.
Experience E1:		
little experience / one child (N=14)	5.85	.74
much experience / one child (N=82)	6.28	.76
little experience / multiple children (N=4)	5.00	.90
much experience / multiple children (N=104)	5.96	.95
Experience E2:		
little experience / one child (N=42)	6.21	.70
much experience / one child (N=54)	6.23	.82
little / multiple children (N=42)	5.62	1.06
much experience / multiple children (N=66)	6.12	.85
Experience E3:		
little experience / one child (N=52)	6.28	.69
much experience / one child (N=44)	6.15	.84
little experience / multiple children (N=61)	5.75	.95
much experience / multiple children (N=47)	6.16	.94

DISCUSSION

The Dutch research supported the covariation hypothesis; the number of children proved to have an influence on parents' ideas regarding the importance of child-rearing. Our results are similar to the American results (Himelstein, Graham and Weiner, 1991). Parents with only

one child ascribe more influence to parenting than parents with more children. The effect can be explained from the attribution theory, by means of the covariation principle.

Apart from the number of children, we examined parents' experience with other children. Parents that have much experience with children in general attribute more influence to parenting than parents that have less experience. Compared to the number of children, 'having experience with children in general' shows a reverse picture on the parenting scale. The effect of the experienced parent is difficult to explain. We may state that the covariation noticed in the number of children a parent has does not have anything to do with having experience with more children. Therefore, the effect of the 'number of children' (covariation) in the American study and in our own research still holds true. The attribution theory can not explain the fact that parents that have more experience with other children also ascribe more influence to parenting when asked about the development of *their own* child. We searched for an explanation. When parents are confronted with the behaviour of other children, people are easily inclined to associate it with the way in which these children are raised by their parents. The behaviour of any children and their parents seems to covary. Thus, the importance of parenting and child-rearing practices is an obvious fact for people that have much experience with children. Less clear is why these people also regard parenting as being very important for the development of their *own* child. Presumably, the idea of 'good child-rearing is important' can become a law or pattern for experienced parents. Once people find that there is a relation between the behaviour of children and the behaviour of parents, people will hold on to the idea when they have a child of their own.

In this study we have focused on the parents' attributions. According to Himelstein, Graham and Weiner (1991), the attributional approach is very useful for understanding some of the determinants of parental beliefs about the causes of children's outcomes. The study of parental beliefs and attributions is not an isolated subject. It is reasonable to assume that there is a connection between the beliefs and behaviour of parents. An interesting research topic is the focus on the relationship between beliefs and actualization of beliefs into action and the children's outcome (Goodnow and Collins, 1990; Sigel, 1992).

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THE EFFECT OF SUPPLEMENTARY EDUCATION ON PROBLEMATIC CHILDREN

J. Strijker and Tj. Zandberg

This contribution forms part of the study on the project of foster daycare. The foster daycare project was executed by six Boddaert centres throughout the Netherlands. With the Boddaert form of treatment, the child stays in the centre's treatment group from after school time till seven in the evening. The foster daycare project is a study- and demonstration project aiming to determine whether children who have been referred to a Boddaert centre treatment group and can not be placed for various reasons, can still be adequately helped by employing this form of care in another way. Instead of a partial stay in a Boddaert centre treatment group, these children are (partially) taken up in selected daycare families that have mostly been recruited by advertisements in local newspapers. As a criterium for admission, on the one hand, as a result of the child its personality, the child does not fit in with a treatment group and on the other hand, the parent is hard to change.

A foster daycare team is organized per centre, consisting of a supervisor, an executive and a coordinator. The supervisor guides the executive and the executive guides the parent and the foster daycare parent. The working relations can be schematically reflected as follows (see figure 1).

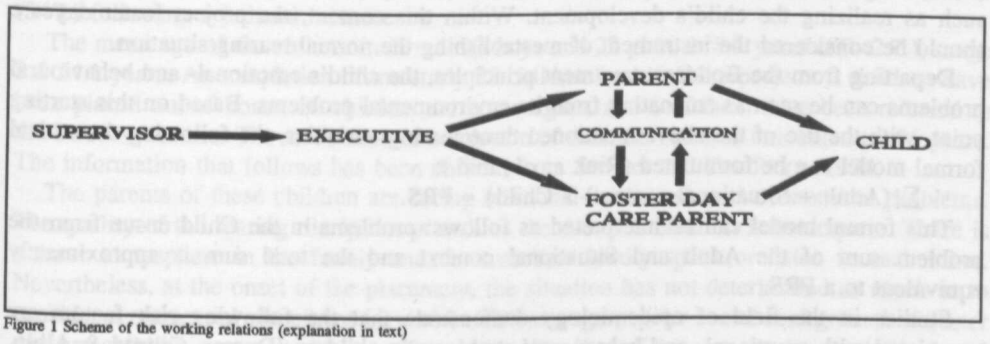


Figure 1 Scheme of the working relations (explanation in text)

During the course of the project, it appeared that the child's parent and foster daycare parent were more or less communicating with each other. The following means of contact have been found: consultation by telephone, at-the-door conversations (when the parent collects the foster daycare child at the foster daycare parent's home), the personal notebook and the tuning conversation.

The tuning conversation takes place between the parent and foster daycare parent under the guidance of the executive for the purpose of synchronizing the treatment by means of exchanging information, i.e. that parent and foster daycare parent observe the same rules concerning the foster daycare child. As the child is not being separated from its parents, as in out of home placement's, the foster daycare parent's role is restricted to 'supplementary rearing adult'. Concretely speaking, this means that the parent remains the primary responsible person for the rearing process.

The aim of the study on the project foster daycare is to demarcate the area of foster daycare, to describe the methods and to establish the effect of the provided care. In this contribution, the effect of the provided care will be a central issue.

MODEL SPECIFICATION

Child-rearing is a way of mutual influencing between the adult and the child. The rearing quality is the result of direct and reciprocal effects of a number of factors in the rearing situation. Considered within the orthopedagogical framework of orientation and interpretation of Rink, Algra, Lokven and Vlieg (1994), the rearing situation consists of four variables (Child, Rearing adult, Situation type and Situational context) which are mutually determining. In this study the following three rearing variables form the orientation framework:

1 the child (C) as a rearing subject having its own functional properties and way of reacting to the rearing adult's rearing practices;
2 the adult (A) as a rearing adult, likewise having his own functional properties and fixed rearing patterns;
3 the situational context (Sc) in which the rearing takes place (family, the family's social network and material conditions).

If the rearing process is stagnating, a problematic rearing situation will develop, abbreviated as PRS (Ter Horst, 1980). Due to the occurrence of problems in one or more rearing variables (C, A, Sc), the rearing adult is no longer sufficiently competent to carry out the rearing tasks, such as realizing the child's development. Within this context, the project foster daycare should be considered the instrument of reestablishing the normal rearing situation.

Departing from the Boddaert treatment principles, the child's emotional- and behavioural problems can be seen as emanating from its environmental problems. Based on this starting point, with the use of the above mentioned three rearing variables, the following theoretical formal model can be formulated (Rink *et al.*, ibid.):

$$\Sigma\{(\text{Adult} + \text{Situational context}) \succ \text{Child}\} \approx \text{PRS}.$$

This formal model can be interpreted as follows: problems in the Child ensue from the problem sum of the Adult and Situational context and the total sum is approximately equivalent to a PRS.

Studies in the field of epidemiology demonstrate that the following risk factors are associated with emotional- and behavioural problems in children (Dumas, Gibson & Albin, 1989; Compas, Howell, Phares, Williams & Giunta, 1989; Sameroff & Seifer, Seifer, Sameroff, Baldwin & Baldwin, 1992; Stanger, McConaughy & Achenbach, 1992):

1 a poor parent-child interaction, a rigid rearing style and the mother's psychopathology (Adult);
2 the extent of family disfunctioning, the size of the family, the experience of many stressful events, a low social-economic status, the absence of a social supportive network round the family and a non-traditional family constellation (Situational context).

Due to the fact that an empirical theory on foster daycare is entirely lacking, an attempt has been made to link up with related areas of foster care and family daycare. What both foster care and family daycare have in common with foster daycare is that the children stay in other families partially or permanently.

The research literature in the field of foster daycare points out that the number of contacts between parent and child during its stay in the foster family and the guidance for parents and

foster parents prove to be significant determinants for the duration and continuation of the placement (Lawder, Poulin & Andrews, 1986; Milner, 1987). Spaans, Berben and Reeuwijk (1989) and Urquhart suppose that a frequent contact between parent and foster parent contributes positively to the duration of the placement.

The studies on the effect of family daycare as to the child's social competence show that the guidance of supplementary parents from a professional organization produce a favourable effect on the child's social development and possibly also on the exchange of information between working parent and supplementary parent (Long, Peters & Garduque, 1985; Lamb, Hwang & Bookstein, 1988; Rosenthal, 1989). The level of social competence is mainly determined by the child's family background (Kontos & Fiene, 1987).

The studies on foster care and family daycare raise the following suppositions for the research on foster daycare: (1) the guidance of parent and foster daycare parent produces a positive effect on the decrease in severity of the child's emotional- and behavioural problems, (2) the exchange of information between parent and foster daycare parent positively effects the decrease in severity of the child's emotional- and behavioural problems, (3) the decrease in the severity of emotional- and behavioural problems will be strongly linked to modifications in the home situation.

DESCRIPTION OF THE RESEARCH GROUP

The study on foster daycare has taken 2.5 years involving 45 children, among whom 11 (24%) following a judicial measure.

The mean age of the children referred, 23 boys and 22 girls, is 8.7 years (*SD*=2.7.), range 3.6-14.1 years. At completion of the study 35 children have left the project: 9 children have been placed out of home, 20 children are home again, and 6 of them have been referred to the Boddaert centre. The mean time of admission of these 35 children amounted to .96 years. The information that follows has been derived from Strijker and Zandberg (1994).

The parents of these children are facing relational-, personal- and economical problems. The quality of the rearing discipline as well as the social interaction is inadequate. There is a tense atmosphere in the family and the members hardly speak or listen to each other. Nevertheless, at the onset of the placement, the situation has not deteriorated so much as to consider a residential placement inevitable. The average psycho-social background of foster daycare children appears to be more favourable than that of the average residentially placed child. Concerning the various aspects of family functioning these families are not distinguishable from the regular Boddaert families. The severity of emotional and behavioural problems concurs with that of very intensively treated ambulant and semi-residential groups. Compared with the national norm group, 31.5 percent of the foster daycare children belongs to the most difficult half percent of children in the Netherlands.

The foster daycare children stay in the foster daycare families for 10 to 23 hours per week. The foster daycare parents come from the upper middle social class. The family functioning of the foster daycare family distinguishes positively from the average Dutch family. The quality of rearing discipline and social interaction is on the average quite favourable. Alternatives for physical punishment are applied, in laying down the rules the child's mental ability is taken into account and when difficulties arise they are discussed with the child. The foster daycare children are just taken up in the homes of the foster daycare families, so they can learn how to live by the daily routine and rules. The foster daycare parent tunes the

significant (see under $p_{fol.up\ st.}$). In other words, the kind of group membership accounts for the severity of conflicts and the extent of cohesion among the family members.
Before determining which dependent variables predict the group membership of the variable follow up status, it is examined whether the nature of placement (judicial or voluntary) correlates with the follow up status. From the performed computations it emerges among other things that (1) the relative risk amounts to 3.9, i.e. that children with a judicial measure run four times as large a risk of being placed out of home and (2) the estimated risk on the basis of a measure amounts to 41%. To put it differently, the attribute 'Judicial measure' is associated with an out-of-home placement. When the variables 'Cohesion', 'Conflict' and 'Judicial measure' are included in a cross-sectional discriminant analysis within T_2 as predictor variables as well as the follow up status as criterium variable, it follows that all out-of-home placements can be explained by this combination of variables. In other words, a combination of a judicial measure and poor family relations correlate with an out-of-home placement. On the basis of the analyses mentioned above, two conclusions can be reached:

1 it is not the severity of the foster daycare child's problems that predicts an out-of-home placement but the quality of family relations;
2 an out-of-home placement will follow if the quality of family relations has dropped below a certain minimum level.

Seen from the child's perspective, foster daycare as supplementary rearing will prove ineffective if family relations do not improve.

In order to establish the extent of influence of methodology variables (in terms of proportion explained variance) on the initiated changes in the child, the block recursive system has been devised. This model comprises three blocks which represent their mutual position (see picture 2):

1 the rearing system (PRS) *at the onset* of placement (C, A, Sc on T_1);
2 the block of intervening variables (communication between parent and foster daycare parent and guidance by the executive) measured *six months after the start* of the placement;
3 the rearing system *a year following the start* of placement (C, A and Sc on T_2)

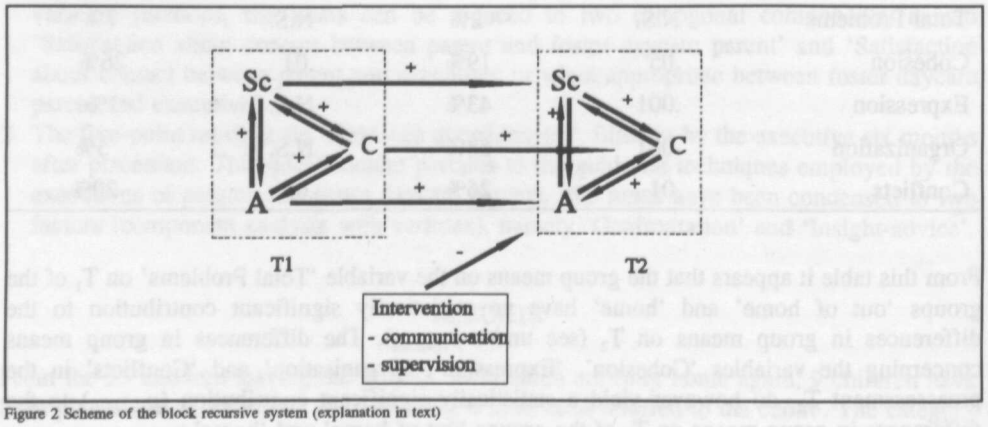
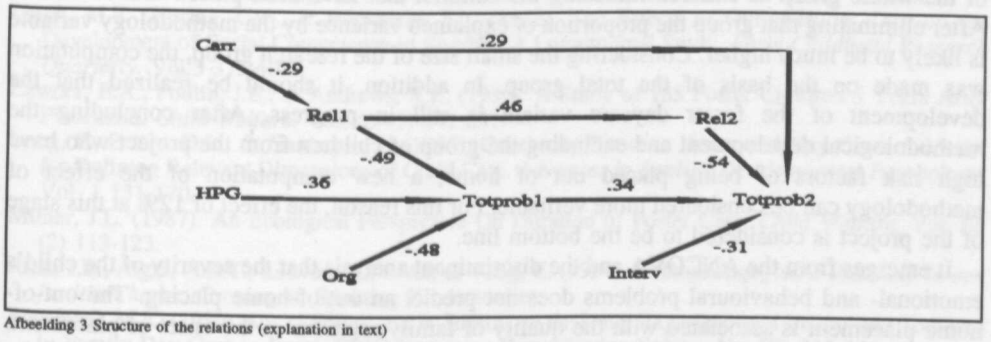


Figure 2 Scheme of the block recursive system (explanation in text)

In the blocks T_1 and T_2 C, A, and Sc are positively correlated (the double arrow with a plus sign) by the assumption that C, A and Sc are mutually dependent. It is assumed that the PRS (T_1) is consolidating the rearing system on T_2 (the arrows with a plus sign between both systems). The block of intervening variables is trying to modify the rearing system and is therefore negatively correlated with the rearing system on T_2. In order to verify the effect of intervening variables in criterium Child on T_2 with elimination of the influence of the PRS, the following hierarchic additive linear model will serve as a guideline:
Child (T_2)= a + b_1(PRS) + b_2(Intervening variables) + b_3(A and Sc on T_2).
The formulated block recursive system is then to be rendered empirical substance. For this purpose the following variables as presented in table 2 on both T_1 and T_2, have been mutually correlated and complemented with the following variables:

- the intervening variables 'Satisfaction about the parent's contact with the foster daycare parent' and 'Satisfaction about contact of the parent or foster daycare parent with the executive' from the rating scale 'Satisfaction about contact';
- the intervening variables 'Confrontation' and 'Insight-advice' from the rating scale 'Guidance questionnaire' (pertaining to the executive's guidance techniques);
- the onset variables 'Mother's history of received professional care' (the number of careworkers contacting the mother preceding foster daycare placement) and the 'HPG' as an indication of the severity of the child's background problems. The 'HPG' is among other things composed of the variables 'Family's societal problems', 'Family's social contacts' (e.g. social contacts with environment), 'Normality of the family' (e.g. a one-parent family).

The variables 'Cohesion' and 'Conflicts' have been aggregated to the index-variable 'Family relations' to render the model more parsimonious. When eliminating the non-significant correlations (p>.05) the above formulated block recursive system can be utilized for the following structure model (in picture 3), assuming that the emotional- and behavioural problems are a function of the environmental problems.



Afbeelding 3 Structure of the relations (explanation in text)

The intervening variable is composed of the variables 'Satisfaction about the parent's contact with the foster daycare parent' and 'Confrontation' of the parent by the executive. Relating to the severity of the emotional- and behavioural problems of the child on T_2, four direct paths lead to 'Total Problems' ('Totprob2). The child's emotional- and behavioural problems are on the increase when (1) the family relations ('Rel2') deteriorate, (2) the intervening methodology variable ('Interv') is weakening (the executive is less confronting and the

parents are less content about the contacts with the foster daycare parents), (3) the mother's history of received professional care is longer ('Carr') and (4) the severity of the emotional- and behavioural problems ('Totprobl') on T_1 is higher. Generally speaking, it can be maintained that the child's progress is impeded by (1) the PRS (constellation of variables on T_1), (2) the quality of family relations on T_2 (which in turn is affected by the PRS) and (3) the mother's history of received professional care. In other words: the above-mentioned variables function as 'reinforcing' variables that consolidate the child's problems in the home situation on T_2. The intervening variable is the 'suppressor' variable, namely the variable suppressing the child's problems.

The devised structure model emerges as valid when tested to epidemiological research findings: the mother's psychopathology (more or less equivalent to the mother's history of care, see e.g. Stanger *et al*, ibid.), the extent of family dysfunctioning and various sociodemographic factors that have been counted in the 'HPG'. When these variables as blocks according to the generally formulated 'recursive block system' (see picture 2) are included in an hierarchic regression procedure (N=34), the variables in block T_1 (PRS) account for 18% variance, the intervening variable adds another 12% variance and the family relations on T_2 produce 23% variance. The multiple correlation (R) amounts to .73 and the total amount of variance (R^2), explained by the model, amounts to 54%.

DISCUSSION

The proportion of uniquely explained variance appear to concur with the proportion of uniquely explained variance of the environment on the social development of children in daycare (Kontos *et al*, 1987, Rosenthal, 1989). Whether the proportion of uniquely explained variance of the intervening methodology variable for a treatment setting can be considered large or small, it should be borne in mind that the computation has been made on the basis of the whole group of children including the children that have been placed 'out-of-home'. After eliminating that group the proportion of explained variance by the methodology variable is likely to be much higher. Considering the small size of the research group, the computation was made on the basis of the total group. In addition, it should be realized that the development of the foster daycare variant is still in progress. After concluding the methodological development and excluding the group of children from the project who have high risk factors of being placed out of home, a new computation of the effect of methodology can be considered more veritable. For this reason, the effect of 12% at this stage of the project is considered to be the bottom line.

It emerges from the ANCOVA and the discriminant analysis that the severity of the child's emotional- and behavioural problems does not predict an out-of-home placing. The out-of-home placement is associated with the quality of family relations at the onset of placement. The intervening variables are not directly associated with the family relations on T_2. If the family relations on T_2 are maintained as independent variables, the intervening variable will add 0% variance (the calculation is likewise based on the total group). To put it differently, if the quality of family relations at the onset of placement has dropped to a certain critical limit, this group of parents and their children can not be helped with foster daycare. If the 'home' group is large enough, it can be stated with a considerable degree of certainty that the methodology variables in this group do instigate changes in the family relations.

The parent's contentment about the contact with the foster daycare parent is negatively correlated with the child's emotional- and behavioural problems on T_2 (r=-.32, p<.05). In other words, the extent of exchange of information with the foster daycare parent contributes positively towards a decrease in severity of the child's emotional- and behavioural problems in the home situation. The child-rearing by the foster daycare parent is indirectly related to (through exchange of information) the child's progress in the home situation. Considered from a learning theoretical viewpoint, exchange of information can generate learning transmission, in which the foster day care parent serves as a model for the parent. As a result of the communication between parent and foster daycare parent, the parent's knowledge can be modified and consequently also the parents rearing behaviour. There are indications that parents are trying to apply the information from the foster daycare parents to their rearing behaviour. Further research is however needed to explore these mechanisms and to optimize them for the benefit of care practice.

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IMPORTANT TOPICS IN PARENTING: THE PARENTS' PERSPECTIVE[1]

M.M. Vergeer & J.M.A. Hermanns

In this chapter the rationale and first results of our study of parenting in Dutch families are discussed. An inductive approach is used in which ideas of parents themselves form the point of departure. A two-step study, consisting of qualitative and quantitative methods, resulted in a list of general issues thought important by parents of children in all age groups and a list of more specific issues considered focal in parenting of children from different age groups.

First an overview of research into parenting is given, leading to our reasons to use the inductive approach in the development of our questionnaire. Subsequently the methods and some preliminary results of the studies are described. The chapter is concluded with a short evaluation of our approach.

OVERVIEW OF STUDIES OF PARENTING

The history of studies of parenting is characterized by continuity and change (Maccoby, 1992). Continuity is found in the concept of parenting style. Early socialization researchers, working from psychodynamic and behaviourist models, already used parenting style as a heuristic device, because analysis of specific parenting behaviours proved to be too complex (Darling & Steinberg, 1993). Within these theories the importance of parental beliefs was recognized, but these constructs were seldom studied empirically. An important step forward in the study of parenting was the conceptual model introduced by Baumrind (1966). Baumrind's conceptualization of parenting style was anchored in parental belief systems. In her configurational approach three qualitatively different types of parental control were distinguished: permissive, authoritarian and authoritative control. Maccoby and Martin (1983) transformed Baumrind's typology in two linear constructs, demandingness and responsiveness. Using these constructs four types of parenting were distinguished: authoritative, authoritarian, indulgent and neglecting parents. The concept of authoritative parenting proved fruitful for research on parenting (Maccoby, 1992; Darling & Steinberg, 1993).

A major change in the research dealing with parenting was introduced when the direction of effects was questioned. For many years theories have been unidirectional: attitudes or behaviour of parents were seen as antecedents and child development as the effect. In recent years there has been a major shift in this paradigm. Especially the ethologically inspired descriptive studies on the micro-level of parent-child interaction have led to the introduction of interactive models of parenting and child development (Maccoby, 1992).

The model recently proposed by Darling and Steinberg (1993) is an example of this interactive point of view. In their model parenting style is defined as a contextual variable that moderates the relationship between specific parenting practices and specific developmental outcomes. Parenting style is supposed to have an influence on the child's openness to parental influence and this openness in turn is a moderating variable in the relationship between parenting practices and the development of the child (Darling & Steinberg, 1993).

[1]This study is financed by the Ministry of VWS on the advice of PCOJ

One of the consequences of the change towards interactive paradigms is the renewed interest in parents' cognitions, often called parental beliefs or ideas. The fact that parental cognitive processes are largely ignored in studies of parent-infant interaction led Parke (1978) to his much cited saying that 'it may have inadvertently been assumed that the cognitive capacities of the infant and parent could functionally be treated as similar'.

Since then, the literature on parental belief systems and cognitions has grown rapidly. There is no consensus in the literature about the variety of terms and definitions used (Goodnow, 1988; De Roos & Jackson, 1990; Dekovic & Janssens, 1994). The literature is mainly characterized by isolated studies of various sorts (Miller, 1988). Van der Stege's inventory (in preparation) makes it clear that the scope of most studies is restricted to parental ideas. Fewer studies are devoted to the relation between parental beliefs on the one hand and parental behaviour or child development on the other hand. Studies in which both parental ideas and parental behaviour and child outcomes were investigated were very rare. Miller (1988) concludes in his extensive review of the literature about parental ideas that there is a relation between parental beliefs and parental behaviour, but that the relation is not strong. Parents' beliefs about developmental processes appear to be related to the child's cognitive functioning, but again the relationship is not strong. According to Miller one of the reasons of this weak relation may be that research on parental beliefs has been grounded in already constructed psychological theories of what the important developments and issues are. The parental ideas measured might not be the ones that are important to parents (Miller, 1988).

Studies of parental ideas can be ordered according to the level of abstraction. On the first specific and practical level studies are directed to parental ideas about child rearing and development in concrete situations, like disciplinary situations. The second level is specific and theoretical. Studies on this level are directed towards parental knowledge of phases in child development. The third level concerns studies in which parents are asked about more abstract theories about parenting and development (Van der Stege, in preparation).
In almost all of the studies of parental beliefs on these three levels the themes to be investigated are defined by the researchers. This grounding in explicit theories has led to a neglect of the *perspectives of parents themselves* on child rearing as a factor that potentially influences parenting behaviour and thus the development of the child. It may be fruitful to investigate parental perspectives on those subjects felt to be significant by parents themselves (cf. Miller, 1988). Knowledge of the issues of parenting which are essential in the perspective of parents will give more ecological validity to all studies into parental belief systems, parental (implicit) developmental theories and parental attributions. The point of departure for parents is the daily practice of child rearing, in which there is a need to decide whether to act or refrain from action.

Another important aspect that is often neglected in previous research is that the (implicit) parental theories are domain specific. Van der Stege (1992; in preparation), however, found that parental ideas regarding the causes of child behaviour and characteristics were not consistent, but varied according to the developmental domains that are investigated.

Empirical studies in which perspectives of parents themselves are included are promising. Dix, Ruble and Zambarana (1989) show that age- and task-sensitive appraisals of children's behaviour are important for parental decisions about discipline. They conclude that relatively enduring values and attitudes regarding child rearing may affect the way parents interpret specific child behaviours and therefore how they think they should respond.

Gerris, Vermulst & Franken (1988) asked parents in a semi-structured interview to mention events or situations in parent-child interactions, which are problematic for the participants.

The point was to get information about the way parents perceived and interpreted the situation. This parental perception of the situation appeared to be related to the way parents solve the problematic situations. The results of Siebenheller's study (1988), using this inventory of problematic situations, show that the situational features distinguished by parents are related to both affective reactions of parents and to their disciplinary actions.

Robijns, van den Brenk, Jackson, Serra & Veeneman (1990) studied developmental and child rearing ideas of parents of, and experts on mentally retarded children. They first analyzed the literature for parents, for experts and for educators. In a content analysis they recorded all the words and expressions that point to what parents say they can or must do to stimulate the child's development or educate the child. In a second study (Robijns & Jackson, 1992) psychologist and educators completed a Q-sort on these parental ideas, based on the content of the ideas. A cluster-analysis on this sorting showed six clusters of ideas. The clusters seemed congruent with the dimensions mentioned by Maccoby and Martin, but Robijns and Jackson suggest completing this model with a third dimension, extent of directedness to development. It is not surprising that the explicit psychological theories showed up in this analysis of parental ideas, as the experts and not the parents did the sorting.

The studies discussed above, based on the perspectives of parents, are limited to specific situations, like disciplinary situations and problematic situations in child rearing or to specific populations like parents of mentally retarded children. The present study is directed towards the subject of parental perspectives on the entire child rearing process. In the next part of this chapter the empirical study is described by which the parental perspective is reconstructed by a combination of qualitative and quantitative methodology. Following an inductive approach in which the ideas of parents themselves about relevant issues in child rearing are the point of departure, two consecutive studies were carried out.

RECONSTRUCTING THE PARENTAL PERSPECTIVE

In this study two phases are distinguished: (1) recording of topics that play a role in the daily practice of child rearing; (2) selection of topics that are important to parents.
The information gathered in these studies was eventually used for the construction of a questionnaire. In the next part of this chapter the two studies will be described.

First study: recording of topics

In the first study twenty parents of children between zero and eighteen years old were interviewed.

In the open interviews parents were given as much room as possible to describe their own perspective on parenting. We asked the parents to describe situations, events or themes that play a role in rearing their child.

From the interview accounts we selected topics in which child rearing, defined broadly, is brought up. We found topics in which, according to the parents, the child 'gave cause' for child rearing activities. This happened when the child's behaviour or situations created by the child caused child rearing activities (e.g. the child wants to choose its own clothes; the child wants to do things the parent thinks beyond its competence; teasing or being teased). Parents also mentioned topics in which they take the initiative in child rearing (e.g. getting structure in feeding-time for babies; creating opportunities to play with age mates; giving attention; stimulating relations with other adults than parents).

The content analysis of the twenty interviews yielded 98 topics that play a role in everyday child rearing, varying from general parenting issues in child rearing to very concrete situations for certain age groups.

Second study: Q-sort to select important topics

In the second study we wanted to select from this pool of 98 topics the ones considered very important by the parents. We presented the topics to a sample of 44 mothers of children between zero and eighteen years old, 22 boys and 22 girls, 24 firstborn children. Six mothers were single parents. The mother's mean age was 36.8 (SD=6.35, range 23-47). Mean educational level on a scale from 1 (primary education) till 9 (university) was 4.7 (SD=2.16).

The topics were written on small cards. Parents were asked to sort out the cards and range them in four piles of varying importance. In a second phase the pile of the most important topics, which contained about 25 topics, was sorted out again in five piles. The two piles that obtained the highest scores contained the topics the mother judged most important in her daily practice of child rearing. Table 1 shows the twelve topics that are most often chosen as important or very important.

Table 1. Frequencies of topics that parents consider important in childrearing (n=44)

Topics	Count	Proportion
Feelings, emotions	27	.61
Honesty, being open and honest to each other	23	.52
Emotional ties between parent and child	23	.52
Bodily contact between parent and child	20	.45
Self-confidence	17	.39
Development of individuality	15	.34
Enjoy oneself	15	.34
Regularity and structure in feeding, sleeping	14	.32
Obedience, listening to parents, being naughty	13	.30
Consider other people	13	.30
Playing together, doing things together	13	.30
Relationship with siblings	12	.27

Topics in the realm of emotional relations, like emotional ties between parent and child, feelings and emotions, honesty, were chosen by more than half of the mothers as the most important topics in child rearing. Mothers seem to attach great value to the relationship with their child as the base of child rearing.

More practical topics like regularity and structure, obedience, playing together, are thought important by about one third of the mothers. These results apply to the whole age group. Some topics might be especially important for child rearing in specific age groups.

In table 2 the most important topics are shown for three age groups: babies and toddlers (zero till four years olds), primary schoolchildren (four till twelve years olds) and adolescents (twelve till nineteen years olds).

Table 2. Frequencies of topics considered important in childrearing in three age groups (proportions per age group; proportions <.30 in brackets because of low absolute values)

Topics	Babies and toddlers (0-3;n=14)	Primary school-children (4-11;n=16)	Adolescents (12-18;n=14)
Feelings, emotions	.64	.50	.71
Self-confidence	.43	.38	.36
Relationship with siblings	(.29)	.31	(.21)
Emotional ties parent and child	.43	.50	.64
Development of individuality	(.21)	.31	.50
Bodily contact	.71	.38	(.29)
Regularity and structure	.64	.31	(0)
Playing together, doing things together	.50	.31	(.07)
Enjoy oneself	.50	.44	(.07)
Obedience	.43	.38	(.07)
Honesty	(.29)	.69	.57
Consider other people	(.29)	(.19)	.43

For some topics the importance in child rearing is more or less equal in the three age groups. This is the case with feelings and emotions, self-confidence, and relationship with siblings. The importance of the topic is increasing with age for topics like emotional ties between parent and child and development of individuality. Other topics are decreasing with the age. This is clearly the case with bodily contact, regularity and structure in feeding and sleeping, and playing together, doing things together. These topics are judged especially important in the first three years of life. Topics like enjoy oneself and obedience are decreasing slightly between the first two age groups, but do not apply to adolescents. Honesty is thought of less importance in the first age group than later on, whereas considering other people does apply especially to the adolescent age group.

Some topics that did not show up in the results for the total group -and for that reason are not described in the tables- are important in specific age groups. Examples are eating and table manners, which are considered important by six of the 14 mothers of babies and toddlers. For child rearing in adolescence eight of the 14 mothers consider the topic talking with each other very important.

There seems to be a lessening of practical topics in the highest age group, as topics like regularity, obedience, eating are of no importance for parents of adolescents. What remains important with increasing age are the 'traditional childrearing topics' like self-confidence and development of individuality and the topics in the realm of emotional relations.

EVALUATION

In the studies described here we attempted to develop an alternative way of looking at child rearing and parenting. We have complemented the existing research tradition, which is rooted in explicit psychological constructs, with the parental perspective. The point of departure of our operationalization was the daily practice of childrearing, as perceived and described by parents themselves.

This study shows that involving the parental perspective on child rearing results in a more complete description of parenting. Of course there also are similarities between the existing scientific tradition and the 'real world of child rearing' as parents see it. It is not difficult to connect these issues mentioned by parents to classical child development themes.

This connection was seldomly made however. A dialogue between experts in child development, like practitioners in child guidance, and parents will be more effective if the practioner knows what the important themes in child rearing are for parents and in what terms they are expressed. This study intends to make a contribution to this dialogue.

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TRANSITION TO PARENTHOOD: THE INFLUENCE OF GENDER AND EDUCATION

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In the wake of developments in the field of contraceptive methods, childbearing is increasingly a planned decision. Whereas people in the past had children, people nowadays choose to have children. Hermans and Sterverlynck (1989) indicate that having children becomes more and more a planned decision as a result of technical changes (f.e. contraceptives), the higher level of prosperity and the higher educational level of people. Perhaps this explains, if only partly, the clear tendency to delay childbirth to a later stage in life. For instance the average age of women when they have their first child was 23.2 years in 1970 and in 1986 it was already 25.8 years.

Moreover, if we consider the table of "Evolution of age of parents when they have their first child" (NIS) we see that in 1960 parents had children at all ages (from younger then 20 years till 35-39 years), while in 1986 the largest concentration of women (43%) is found in the category 25-29 years while men are more situated in the category 30-34 years (44%).

Furthermore, parents are not only able to decide when their children will be born, they also are able to decide on the number of children they want. According to the table of "Evolution of age of parents when they have their first child" (NIS 1990) women in 1965 had an average of 2.6 children. In 1990 this number is decreased to 1.6 children.

METHOD

First a hermeneutic qualitative pre-survey was carried out among 32 Flemish couples. In this survey, in-depth interviews with the father and with the mother were conducted at three points of time (1) in the sixth month of pregnancy (2) when the baby was 2 months old and (3) at the age of one year. This also made it possible to examine sexual disparities.

Through the analysis of the interviews, a scientific language for parenthood was developed, which enabled us to derive a number of theoretical variables. These variables were subsequently refined and used to develop an operational questionnaire for further inquiry (the intensity of desire scale and the reasons for children scale were from Van Balen, 1991).

The actual survey was carried out with the help of a representative sample. We contacted all parents in Flanders who had their child during June 1993 and July 1993. In total, we had 1.828 addresses, i.e. a potential study population of 3.656 respondents: 869 women and 853 men sent back the completed form.

The aim of the survey was to interview both the father and the mother. All children were one year old. It was decided that no twins would be involved. Both parents had to be Belgian and were between 20 and 35.

Given the size of the sample, we decided to carry out a post-survey with closed questions.

The most striking results concerning six inquiry-questions will be reported:

- Is there a difference between men and women with regard to the intensity of the desire to have children?

- Is there a difference according to the educational level with regard to the intensity of the desire to have children?
- Is there a difference between men and women with regard to the most important reasons to have children?
- Is there a difference according to the educational level with regard to the most important reasons to have children?
- Is there a difference between men and women with regard to the ideas concerning childrearing?
- Is there a difference according to the educational level with regard to the ideas concerning childrearing?

MAIN RESULTS

Demographic data

The average age of men was 28.75 years and of women 27.11 years. As can we could expect, the average age at which a woman has her first child was lower than that of the man. When we looked more in detail, we found that only 12.9% of the respondents was younger then 25 years. The largest group of parents (57.3%) was aged between 25 and 30 years while 29.4 % was older then 30 years. Most of the couples had already been living together for between four and seven years. Those who had already been living together for longer stated that they found it more difficult to conceive. Therefore it could be said that they had not made a conscious choice to wait for so long. 41.5% of the respondents were married for less than 4 years, 44.7% were married for between 4 and 7 year while 13.6% of our respondents were married for 7 years and over.

When we considered the participation in working life we saw that 92.9% had paid employment, 85.3% worked full-time and 17 3% changed their job once the child was born.

Regarding the educational level, 248 respondents (14.4%) had a qualification of primary school, 756 respondents (43.9%) had a qualification of secondary school and 656 persons (38.1%) had a diploma of high school or university.

The intensity of the desire to have children

We asked the respondents to indicate one of the seven statements related to their intensity of the desire to have children. The statements were placed in order of intensity. The question was :"How much would you have done to have a child?"

The difference between men and women

	Total	Men	Women
I would have done anything	543	215	328
I would have done almost anything	558	258	300
I would have done a lot for it	381	218	163
I would have done something for it	136	85	51
Having a baby was an opportunity	37	25	12
I didn't care very much	30	23	7
I wasn't particularly in favor of having a baby	20	14	6

Both men and women had a strong or very strong desire to have children. Women had significantly more often a very strong or all-consuming desire to have a child, while men significantly more often had a strong desire and much more often had little desire to have a child and even did not wish to have a child at all. (df=6,chi=58.94,p=0.00)

The difference between people according to their educational level

All parents, regardless their educational level, would do a lot or more to have a baby. Persons with a lower education (primary school, secondary school) were found in two extreme categories, those who had an all-consuming desire or those who had little desire to have a child or even did not wish to have a child at all(df=12, chi^2=59.60,p=0.00).

	Total	prim. school	sec. school	high school
I would have done anything	519	90	275	154
I would have done almost anything	542	69	227	246
I would have done a lot for it	377	51	142	184
I would have done something for it	127	18	5	51
Having a baby was an opportunity	36	4	22	10
I didn't care very much	29	8	14	7
I wasn't particularly in favor of having a baby	17	6	9	2

Parents with a higher educational level tended significantly to have more moderate desire to have a child (df=12, chi^2=59.60,p=0.00)

The most important reasons for having children

"Why do people want to have children? What are their most important reasons to choose for a baby? " were the inquiry-questions. To investigate these questions, people were asked to choose one alternative out of the twelve following statements.

The difference between men and women

	Total	Men	Women
It strengthens the relationship	45	23	22
To continue the family name	17	15	2
It makes your life complete	741	318	423
It makes your relation complete	186	103	83
It is nice to have children around you	191	116	75
You have got a close relation with your children	161	80	81
Mother/fatherhood gives you satisfaction	173	96	77
To experience birth and pregnancy	28	5	23
It is a natural instinct	60	15	45
The family expected it	6	4	2
It is obvious to have children	45	33	12
No idea	45	30	15

Men and women considered having children as a completion of their life. Men pointed significantly more than women to the statement "it's nice to have children around you" and the statement " no idea". Although only a few men considered children to be important to continue the family name, they chose this alternative significantly more than women. Women tended significantly more to evaluate childbirth as a natural instinct or because they wanted to experience birth and pregnancy. Moreover they stated significant more than men "it makes your life complete" or "it makes your relation complete". ($df=11, chi^2=79.65, p=0.00$)

The difference between people according to their educational level

Regardless the level of education, most people saw a child as a completion of their life. People with a lower education (primary school) pointed the statement ("it makes your life complete") less than those who had a higher education (high school or university).

	Total	prim. school	sec. school	high school
It strengthens the relationship	43	8	24	11
To continue the family names	15	5	7	3
It makes your life complete	711	82	325	304
It makes your relation complete	185	25	72	88
It is nice to have children around you	184	44	75	65
You have got a close relation with your children	154	22	68	64
Mother/fatherhood gives you satisfaction	169	25	79	65
To experience birth and pregnancy	27	7	12	8
It is a natural instinct	59	9	39	11
The family expected it	6	1	4	1
It is obvious to have children	44	3	21	20
No idea	41	9	22	10

Parents with a diploma of primary school mentioned "it will be nice to have a child" as the most important reason for having a baby. People with a qualification of secondary school thought that wanting children was more a natural instinct. They did not consider that having a baby would complete their relation. People with a higher education argued that a baby would complete their life and their relation. However they pointed significantly less to the statement that it strengthens the relation and that it is a natural instinct. ($df=22, chi^2=56.06, p=0.00$)

Ideas concerning childrearing

The survey demonstrated that the views of the parents of a one year old child concerning childrearing could vary considerably. In the context of the survey, the respondents were asked to indicate which statement most closely matched their own ideas concerning childrearing. They had the possibility to make a choice between six statements.

We could make a distinction between two main trends. On the one hand, a group of respondents saw childrearing as a conscious process, whereas the other group considered childrearing more by ear than anything else. Within the greatest group (idea 2), we could not find any sexe-differences. When we considered idea one, there were no differences found

between men and women. However, there was a distinction between men and women concerning the idea that childrearing wasn't something which could be done in an offhand manner. Women agreed significantly more to this idea than men did. (df=5,chi²=31.19,p=0.00)

The difference between men and women

	Total	Women	Men
Childrearing means playing it by ear. It cannot be planned in advance. The attitude towards the child can only be decided the moment a situation occurs	401	194	207
There are 2 fundamental principles to be taken into account in childrearing - childrearing must involve concerted action - the child must obey a number of rules	532	267	265
Childrearing involves clear rules about what is allowed and what not. Certain demands should be made on the child	143	65	78
Childrearing is a difficult task. It is important to be well informed and well prepared	86	37	49
We will bring up our child as we were raised by our parents who did a good job	119	43	76
Childrearing is not something which can be done in an offhand manner. You must be discerning and enjoy everything 100%.	428	259	169

The difference between people according their educational level

The survey showed that respondents who had a clearly defined idea of how to bring up their child (i.e. those who ticked off statements 2) were often people who had a higher level of education (high school or university). Furthermore, they mean not to bring up their child like their parents. People with a lower education had exactly the opposite ideas. They didn't think that childrearing mean that there are two fundamental principles. Contrarily they would bring up their child like their parents did. A significant percentage of respondents, who pointed to statement one often had a diploma of secondary school.(df=10,chi²=36.32,p=0.00). They found that childrearing cannot be planned in advanced while they tended less to find that childrearing could be planned.

	Total	prim. school	sec. school	high school
Childrearing means playing it by ear It cannot be planned in advance. The attitude towards the child can only be decided as and when situations occur	385	57	183	145
There are 2 fundamental principles to be taken into account in childrearing - childrearing must involve concerted action - the child must obey a number of rules	524	64	212	248
Childrearing involves the child knowing clearly what it cannot do and also that certain demands must be made on the child	136	22	72	42
Childrearing is a difficult task. It is important to be well informed and well prepared	86	10	44	32
We will bring up our child as we were raised by our parents who did a good job	111	28	57	26
Childrearing is not something which can be done in an offhand manner. You must be discerning and enjoy everything 100%	407	65	182	160

CONCLUSION

Three topics we considered in this research: the intensity of the desire to have children, the most important reasons for having children and the ideas concerning childrearing.

We can conclude that their are sexual differences. Women had a greater desire to have children and they make this decision in a different way then men do. For instance, women considered having children more as a completion of their life. On the contrarily men have a more general manner of thinking about the reason why they wanted children. 'It's nice to have children around you' was for them the most important reason for having a baby.

Sexual differences are also noticed concerning the childrearing. Women have a more conscious way of thinking about childrearing (not something that can be done in an offhand manner), while men liked to raise their children more in the way like their parents did.

Concerning the difference in educational level, a distinction can be made between those with a lower education (primary school, secondary school) and those with a higher education. (high school and university). People with a lower educational level, showed a more extreme attitude towards the desire to have a child. They would have done anything to have a baby or on the other hand, they didn't want a child). People with a higher educational level, considered childrearing more as a process and they would bring up their children in a different way then their parents did.

These preliminary results show a difference between men and women concerning the desire to have children and the childrearingpractice. Sexual differences are less noticed in ideas concerning the reasons for having a child.

Differences in educational level are remarkable within the ideas concerning the reasons for having children, while these differences have less influences on the topics 'childrearing' and 'the desire to have children".

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MULTILEVEL MODELS FOR FAMILY DATA

Tom A.B. Snijders[1]

Families are complex groups. Although a platitude, this characterization can lead us to a useful class of statistical models for the analysis of family data. With family data, I mean data on several members of each family in a sample of families. The general framework is the following. Statistical methods are presented in this paper for analyzing a research topic that refers to families and/or to individual persons within the family context. The empirical data relevant for this question are supposed to consist of observations, within each family, of one or two parents as well as one or more children. The scientific question is supposed to be translatable to hypotheses with regard to an outcome variable at the level of the individuals in the families, or the level of the relations between individuals in the families.

The hierarchical linear model, or multilevel model, which is becoming increasingly well-known and utilized in social science research (see the textbooks Goldstein, 1987, and Bryk and Raudenbush, 1992, or the introductory paper Snijders and Bosker, 1990) can, in principle, be applied to this type of data. An application of multilevel modeling to personal networks, another form of relational data, was given by Snijders, Spreen, and Zwaagstra (1994). The multilevel model is a statistical model for the analysis of data with a hierarchical nesting structure, e.g., individuals nested in groups. Since family data are, indeed, data about individuals in groups, it is clear that the multilevel model is applicable to this type of data. However, families have the additional complexity that they comprise a quite specific structure: the mother, the father, the children occupy their own positions with their own roles, which will be reflected in the values and the correlation patterns of the observed variables. If, moreover, the data are about relations between family members, the variables each refer to two individuals involved in the relationship in question; this leads to an increased complexity. The models discussed below for these relational data are extensions of the Social Relations Model of Kenny and La Voie (1984) and Kashy and Kenny (1990).

This chapter indicates how the multilevel model can be specified in such a way that it adequately reflects the complexity of family data. There are two reasons for using the multilevel approach rather than simpler methods. The first is that simpler methods, e.g., ordinary (OLS) regression analysis, that do not take into account the grouping of data in families, amount in most cases to misspecified models; the standard errors and hypothesis tests associated with misspecified models are not reliable. The second reason is that the multilevel approach implies a decomposition of observed variances into several sources of variability, such as the family as a whole, the individual parents and individual children, the reciprocity in relationships, etc. This decomposition can be of interest on its own.

The methods are illustrated with data from a study by Van Peet (1992) about intelligence in families, and with data from a study by Gerlsma (1993) about recollections about parental rearing behavior. The chapter starts with a brief introduction to multilevel models for those who are not acquainted with these models. For a full understanding of the methods and their software implementation, however, the reader should have a general knowledge of multilevel analysis that is more than what can be explained in this paper. For further explanation of multilevel analysis, the reader is referred to the mentioned literature.

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[1]I thank Arie van Peet and Coby Gerlsma for the permission to use data collected by them.

Several software packages for estimation of multilevel models are available, each with its own advantages and disadvantages: ML3 (Prosser, Rasbash and Goldstein, 1991), VARCL (Longford, 1993), and HLM (Bryk, Raudenbush, and Congdon, 1994). Some of the models presented here can be estimated with any of these programs, but many of them only with ML3 (notably the multilevel models without a random intercept and the models where equality of certain variance parameters is postulated). The various models presented below all are given formulations that allow them to be estimated using ML3.

THE HIERARCHICAL LINEAR MODEL OF MULTILEVEL ANALYSIS

Hierarchical nesting can be seen in many data structures. Very common hierarchical data structures are individuals nested in groups (e.g., pupils in classrooms, or individuals nested in families) and measurements nested in individuals (longitudinal data, repeated measurements). In the case, e.g., of individuals nested in groups, the individuals are called the units at level 1, the groups the units at level 2. In general, the most detailed level is called the lowest level, or level 1. Units at a given level are nested in units at the higher level. An example of a data structure with three levels is repeated measurements on individuals within families: the measurements, or time points, are the units at level 1, the individuals are the level-2 units, and the families the level-3 units.

The hierarchical linear model (HLM) is a variant of the multiple linear regression model for data with a hierarchical nesting structure where the dependent variable is defined at the lowest level of the hierarchy. We discuss briefly the essential aspects of this model in the context of individuals nested in families.

Individuals (level-1 units) are indicated by i and families by j. The dependent variable must be defined at the lowest level, the level of the individual, and it is denoted Y_{ij}. As an example, Y_{ij} could be a behavior variable, while the explanatory variable x_{ij} could be a dummy variable indicating the gender of individual i or the position in the family (parent / child). Variable x_{ij} can also be a variable measured at interval level. A crucial aspect of the HLM is that the magnitude of the effect of the explanatory ("independent") variables x on the dependent variable Y may differ between families. A simple two level model for the effect of x on Y can be formulated as a regression model with coefficients that differ between families:

$$Y_{ij} = \beta_{0j} + \beta_{1j}x_{ij} + R_{ij} , \qquad (1)$$

where

Y_{ij} is the value of the dependent variable,
β_{0j} is the family-specific intercept,
β_{1j} is the family-specific regression slope,
x_{ij} is the value of the explanatory variable,
R_{ij} is the unexplained part ("residual") of the dependent variable x_{ij}.

The fact that the regression coefficients β_{ij} are family-dependent means that the effect of variable x (e.g., gender) on the behavior Y can differ from family to family, depending on characteristics of the families that may be themselves measured or unmeasured. The HLM

being a random effects model means that the analysis does not focus on individual values of the coefficients β_{0j} and β_{1j}. Instead, it focuses on the population of these coefficients that tells something about the population of families, based on data from a sample of families. In usual multilevel models, there is a population associated to each of the levels; in this case, a population of individuals and a population of families. (Sometimes, however, to express complicated models, artificial levels are used which do not correspond to a population.)

It is convenient to split the coefficients β_{0j} and β_{1j} in (1) into a fixed part (the mean) and a random part (with mean 0):

$$\begin{aligned} \beta_{0j} &= \gamma_{00} + U_{0j} , \\ \beta_{1j} &= \gamma_{10} + U_{1j} , \end{aligned} \qquad (2)$$

where

γ_{00} is the population mean of the intercepts,

γ_{10} is the population mean of the regression coefficients,

U_{0j} is the group-specific part of the intercept,

U_{1j} is the group-specific part of the regression coefficient.

Substitution of equations (2) into (1) yields the combined model formula

$$Y_{ij} = \gamma_{00} + \gamma_{10} x_{ij} + U_{0j} + U_{1j} x_{ij} + R_{ij} . \qquad (3)$$

The parameters γ_{00} and γ_{10} are the fixed effects, U_{0j} and U_{1j} are the random effects. Since the population means are split off, the means of U_{0j} and U_{1j} are 0. The residual at level 1, R_{ij}, is assumed to be statistically independent of the random effects at level 2, U_{0j} and U_{1j}. It is usually assumed that the latter variables have a bivariate normal distribution. This implies that the distribution is characterized by the variances var(U_{0j}) and var(U_{1j}) and the covariance cov(U_{0j},U_{1j}). If var(U_{0j})=var(U_{1j})=0, the coefficients are the same for all families and an ordinary least squares (OLS) regression analysis could be used, without taking into effect the nesting of individuals within families. This is rarely the case, however. If var(U_{1j})=0, then the regression coefficients do not vary, but the intercepts may be variable. In that case, the variable x only has a fixed effect. This model is called a random intercept model. In the general case, var(U_{0j}), var(U_{1j}), and cov(U_{0j},U_{1j}) are free parameters estimated from the data.

Model (3) contains three random effects: U_{0j}, U_{1j}, and R_{ij}. Each of these indicates a different source of unexplained variation. The random intercept U_{0j} indicates unexplained differences between families in the average Y-values (controlling for the effect of x). The random slope U_{1j} indicates unexplained differences between families in the effect of x on Y. The random residual R_{ij}, finally, indicates unexplained variation among the individuals, relative to their families.

In ordinary least squares (OLS) regression analysis there is only one residual variance and, by using explanatory variables, one tries to obtain a small value for this residual variance. In the multilevel model, one tries in a similar way to obtain small values for all variance parameters. Ideally, inclusion of explanatory variables that are defined at the lowest level (individual characteristics) will diminish var(R_{ij}); if their family means differ between families, their inclusion will also diminish var(U_{0j}); inclusion of explanatory variables at the higher level (family characteristics) will diminish var(U_{0j}); inclusion of interactions between X and higher-level variables will diminish var(U_{1j}). However, this holds not exclusively or necessarily. An extensive discussion of this point, and a definition of "proportion of explained variance" that is adequate for multilevel analysis, is given in Snijders and Bosker (1994). Note that the last-mentioned type of interaction is an interaction between individual-level and family-level variables. Such interactions are called cross-level interactions.

To continue the example about the effect of gender on behavior: suppose that families differ in the direction and/or strength of the effect of gender on behavior, i.e., var(U_{1j}) > 0. The religious affiliation of the family might (partially) explain this variation in effects: this would amount to a cross-level interaction between gender and religious affiliation in their effect on individual behavior.

The following formulae express the use of group-level variables to diminish the unexplained variances var(U_{0j}) and var(U_{1j}). A group-level variable w_j (in the example, a measure of the religious affiliation) is used to explain part of the differences between the intercepts β_{0j} and the regression coefficients β_{1j}. This means that w_j is used as an explanatory variable for β_{0j} and β_{1j}, which leads to an expansion of equations (2):

$$\beta_{0j} = \gamma_{00} + \gamma_{01} w_j + U_{0j} ,$$

$$\beta_{1j} = \gamma_{10} + \gamma_{11} w_j + U_{1j} . \qquad (4)$$

Parameters γ_{00}, γ_{01}, γ_{10}, and γ_{11} are called fixed coefficients. Combining (1) and (4) yields

$$Y_{ij} = \gamma_{00} + \gamma_{01} w_j + \gamma_{10} x_{ij} + \gamma_{11} w_j x_{ij} + U_{0j} + U_{1j} x_{ij} + R_{ij} . \qquad (5)$$

The first four terms in the right-hand side of (5) are the fixed part of the model, which is similar to the fixed part in a linear regression model. The last three terms constitute the random part of the model. The fixed part contains a main effect for w_j due to the use of w_j to explain the intercepts β_{0j}. It also contains the cross-level interaction effect for $w_j x_{ij}$ due to the use of w_j to explain the regression coefficients β_{1j}.

The random part of the model, $U_{0j}+U_{1j}x_{ij}+R_{ij}$, makes it possible to separate distinct components of variance. The first two components are attributable to the families and the last one to the individuals. The presence of the group level random effects U_{0j} and U_{1j} results in correlations between individuals in the same family; if var(U_{1j}) > 0 these correlations depend on the values for x_{ij}.

Model (5) can be extended by using more than one group-level and more than one individual-level explanatory variable. It is not necessary that all group-level variables with a

fixed effect also have a random effect. Furthermore, one may use different respondent-level variables to explain different regression coefficients.

Different specifications (i.e., different choices for the variables included in the fixed and random parts of the model, and for restrictions on the variances and covariances of the random effects) can be compared using the so-called deviance. Technically speaking, this is minus twice the log-likelihood; expressed informally, it is a measure of badness of fit that can be calculated for each estimated model. Adding some parameters to a given model will lead to an improvement in fit, and hence to a decrease in deviance; the significance of this decrease can be tested by a chi-squared test applied to the decrease in deviance, where the number of degrees of freedom is equal to the number of parameters (regression coefficients, variances, and covariances) added. This test is also called the likelihood ratio test.

The remainder of this paper focuses on the specification of the random part of the HLM for various structures of relational data. Less attention is devoted to the specification of the fixed part, not because it is unimportant, but because it is along the well-known lines of regression analysis and the more usual applications of the HLM.

INDIVIDUALS IN FAMILIES: MODELS

In this section we treat a method for analysing data about individuals in families, taking into account the various positions, or roles: usually the roles of mother, father, and children. Within families indicated by the letter j we consider individuals indicated by i and a dependent variable indicated, as above, by Y_{ij}. The number of children in the family is arbitrary, and may differ between families. It is not necessary that for each family in the data set, information is available about father, mother, and children; some of these may be missing.

We present three multilevel models for Y_{ij} which express an increasing complexity in modeling the differences in positions, and which do not take into account fixed effects or random slopes of specific research variables. (Fixed effects can be added to the model just as in regression analysis; random slopes just as in the more usual applications of multilevel analysis.) The three positions in the family will be indicated by dummy ("artificial") variables:

$f_{ij} = 1$ (or 0)	indicates that individual i in family j is (or is not) the father;
$m_{ij} = 1$ (or 0)	indicates that individual i in family j is (or is not) the mother;
$c_{ij} = 1$ (or 0)	indicates that individual i in family j is (or is not) a child.

(Note that there is a linear dependency between these variables: $f_{ij} + m_{ij} + c_{ij} = 1$. This implies that when one uses all three of the variables f_{ij}, m_{ij}, and c_{ij} in the fixed part of the model, the constant term γ_{00} should be excluded.) For each of the three models, the number of degrees of freedom, i.e., the random of freely estimated parameters, is mentioned because it plays a role in significance tests based on the deviance principle (see above).

Model 1. Straightforward use of the "default" multilevel model leads to the model

$$Y_{ij} = \gamma_{10} f_{ij} + \gamma_{20} m_{ij} + \gamma_{30} c_{ij} + U_{0j} + R_{ij} . \qquad (6)$$

In this model, γ_{10} is the mean for the fathers; γ_{20} is the mean for the mothers; and γ_{30} is the mean for the children. (The formulation given here was chosen, somewhat arbitrarily, so that

it contains no general constant term. The general mean effect is included in the three role-specific means.) This model makes a distinction between the various roles only in the fixed part. This means that in all families, the differences between the roles of fathers, mothers, and children, are the same, and expressed by the fixed part of this model. In the terminology of the analysis of variance, this model is called the compound symmetry model. The correlations between all family members are equal; and the variances for all family members are equal.

The number of degrees of freedom of this random part is 2 (an intercept variance and a residual variance).

Model 2. A distinction can be made between the parents and the children. The parents are indicated by the dummy variable $p_{ij} = f_{ij} + m_{ij}$, which is 1 if individual i in family j is a parent, 0 otherwise. The clearest way to express this model is obtained by different formulae for the parents and the children. The formula for parents is

$$Y_{ij} = \gamma_{10} f_{ij} + \gamma_{20} m_{ij} + U_{1j} + R_{ij} \qquad (p_{ij}=1)$$

and the formula for children is

$$Y_{ij} = \gamma_{30} + U_{3j} + R_{ij} . \qquad (c_{ij}=1)$$

These two formulae can be combined as

$$Y_{ij} = \gamma_{10} f_{ij} + \gamma_{20} m_{ij} + \gamma_{30} c_{ij} + U_{1j} p_{ij} + U_{3j} c_{ij} + R_{ij} . \qquad (7)$$

The random effects U_{1j} and U_{3j} are correlated within families.

If model 2 holds and the variance of the parents' effect var(U_{1j}) differs from the variance of the childrens' effect var(U_{3j}), there will usually not be a specific reason why the residual variance, var(R_{ij}), for parents should be equal to that for children; but the latter equality is implied by formula (7). This restriction is dropped in the following formulation for model 2,

$$Y_{ij} = \gamma_{10} f_{ij} + \gamma_{20} m_{ij} + \gamma_{30} c_{ij} + U_{1j} p_{ij} + U_{3j} c_{ij} + R_{1ij} p_{ij} + R_{3ij} c_{ij} . \qquad (8)$$

The random residuals R_{1ij} and R_{3ij} must be assumed to be uncorrelated (their correlation cannot be estimated, since each person in a given family is either a parent or a child, not both).

This model makes a distinction between the various roles not only in the fixed part, but it distinguishes between parents and children also in the random part. This means that the differences between the roles of parents and of children may differ among families.

The number of degrees of freedom of this random part is 5 (the 3-parameter covariance matrix of (U_{1j}, U_{3j}) and two residual variances).

Model 3. The third model distinguishes not only between parents and children, but also between mother and father. However, assuming that in each family there is at most one mother and at most one father, we cannot both have a father and a mother effect U_{1j} and U_{2j}

and a random residual R_{1ij} for each of the parents. Therefore, this random residual effect R_{1ij} must be dropped. This leads to the formula

$$Y_{ij} = \gamma_{10} f_{ij} + \gamma_{20} m_{ij} + \gamma_{30} c_{ij} + U_{1j} f_{ij} + U_{2j} m_{ij} + U_{3j} c_{ij} + R_{3ij} c_{ij} \; . \qquad (9)$$

This model distinguishes between fathers, mothers, and children in the fixed and also in the random part. This means that the differences between the roles of fathers, mothers, and children may differ among families.

The number of degrees of freedom of this random part is 7 (the 6-parameter covariance matrix of (U_{1j}, U_{2j}, U_{3j}) and one residual variance). The two additional degrees of freedom, compared to model 2, correspond to the fact that the variances for the fathers' and the mothers' values of Y_{ij} may be different, and that their correlations with the children's values also may be different from each other.

Model 3 is closely related to the saturated model for family data, with which I mean the model of which the covariance matrix of the family members is restricted only by the fact that all children occupy the same position: all children have the same variance, and child-father, child-mother, and child-child correlations do not depend on which child is being considered. The saturated model also has 7 degrees of freedom. The only difference between model 3 and the saturated model is that the covariance matrix for model 3 as defined by formula (8) is subject to some inequality restrictions; e.g., the child-child correlation is necessarily non-negative. For practical purposes, model 3 and the saturated model may be considered identical unless at least one variance parameter in model 3 is estimated to be 0, which suggests that the empirical covariance matrix violates one of the inequality restrictions inherent to model 3.

AN EXAMPLE: INTELLIGENCE OF INDIVIDUALS IN FAMILIES

As an example, we use data from Van Peet (1992) in a study about the theory of intelligence of De Groot (a.o., 1981, 1983; for further references see Van Peet, 1992).

Intelligence tests were carried out by persons in a sample of large families, "large" being defined as comprising at least 5 children. Of the intelligence tests administered, I use only the IQ measurement by the GIT (Groninger Intelligentie Test), see Snijders and Verhage (1962) and Luteyn and Van Der Ploeg (1983). The number of families is 51, comprising a total of 380 persons. There are two subsamples of families: 32 families are the 19% of responding families from a random samples of large families in Amsterdam, studied in 1974; the remaining 19 are a convenience sample of families, studied in 1989. Thus, the families cannot be regarded as a random sample, so that it is doubtful to generalize the results to some population (cf. Van Peet, 1992, Section 4.4.1).

From a theoretical point of view, we can indicate one of the three models presented in the preceding section as the most appropriate one. There will be a correlation between fathers' and mothers' IQ because of assortative mating; and a correlation between parents' and children's IQ because of heredity and environment. There is no *a priori* reason to expect that the correlation caused by assortative mating is equal to the correlation because of heredity and environment. This is an argument against Model 1. Further, the importance of father and mother with respect to heredity is the same, and with respect to their childrens' environment

the importance of either is about equal. Therefore, there are no clear reasons to prefer model 3. The result is a preference for model 2. An additional restriction could be made, namely, that the variance of IQ is equal for parents and children. This would be natural in a stationary population, which exhibits no trend in the mean IQ. Applying the rules for calculating variances to formula (8), this restriction can be expressed as

$$\mathbf{var}(U_{1j}) + \mathbf{var}(R_{1ij}) = \mathbf{var}(U_{3j}) + \mathbf{var}(R_{3ij}) \; . \qquad (10)$$

The difference between model 2 with this restriction, and model 1, is that this model allows differences between the child-child, child-parent, and parent-parent correlations, whereas these are equal when model 1 holds.

The parameter estimates for models 1, 2, and 3 are presented in Table 1 and 2. Empty cells in Table 2 correspond to parameters that are not present under the model.

Table 1. Parameter estimates for intelligence data under Model 1.

Parameter	interpretation	Estimate	s.e.
γ_{10}	Father fixed effect	125.4	1.9
γ_{20}	Mother fixed effect	119.9	1.9
γ_{30}	Child fixed effect	121.6	1.3
var(U_{0j})	Variance of random family effect	67.7	16.3
var(R_{ij})	Residual variance	107.9	8.4
deviance		2944.9	

For the interpretation of the differences between the parameter estimates of models 2 and 3, it should be kept in mind that, since model 3 does not contain a residual variance var(R_{1ij}) for the parents, the sum var(U_{1j})+var(R_{1ij}) for model 2 must be compared to var(U_{1j}) under model 3, and the same for the variance of the mothers' effect. These are of the same magnitude.

Model 2 is not significantly better than model 1 (χ^2= 0.1, d.f.=3), while model 3 is not significantly better than model 2 (χ^2= 0.6, d.f.=2). It can be concluded that for these data, model 1 is adequate. Our expectation that model 2 would be better than model 1 is not borne out. The correlation between childrens' intelligence does not differ significantly from the correlation between parents' intelligence or that between children's and parent's intelligence.[1]

Since model 1 fits best, only the parameter estimates in Table 1 are discussed. These show that, in these families, the fathers have a higher intelligence than the mothers, while the

[1]The same analysis was done on the intelligence measurements by Raven's test, also collected by van Peet. This led to a different result. Model 3 had the best fit. Between-parent correlation was practically 0, parent-child and child-child correlations were substantial, and mothers had a larger variance than fathers. The difference between the results for the GIT test and Raven's test may be related to the fact that Raven's test measures a much smaller domain of intelligence (abstract reasoning) than the GIT, and that the psychometric properties of the GIT (a.o., the standardization for both genders) seem better than those of Raven's test.

children occupy an intermediate position. The within-family (intraclass) correlation is 67.7/(121.6+67.7) = 0.36. This is substantial but not extremely high.

Table 2. Parameter estimates for intelligence data under models 2 and 3. (Note that U_{1j} refers to parents in model 2, and to fathers in model 3.)

Parameter	Interpretation	Estimate model 2	s.e.	Estimate model 3	s.e.
γ_{10}	Father fixed effect	125.4	1.9	125.4	2.0
γ_{20}	Mother fixed effect	119.9	1.9	119.9	1.8
γ_{30}	Child fixed effect	121.6	1.3	121.6	1.3
var(U_{1j})	Parent (2) or father (3) variance	66.1	27.0	191.9	38.4
var(U_{2j})	Mother variance			167.9	33.3
var(U_{3j})	Child variance	67.8	17.4	67.7	17.5
cov(U_{1j}, U_{2j})	Father-mother covariance			66.1	27.0
cov(U_{1j}, U_{3j})	Parent (2) or father (3) - child covariance	67.6	17.3	66.6	20.6
cov(U_{2j}, U_{3j})	Mother-child covariance			69.0	19.6
var(R_{1ij})	Parent residual variance	113.7	22.7		
var(R_{3ij})	Child residual variance	106.2	9.9	106.3	9.9
deviance		2944.8		2944.2	

RELATIONS WITHIN FAMILIES: MODELS

An important type of family data consists of data that refer to relations between members of the family, or data where one family member reports on a behavior or characteristic of another family member. For the sake of brevity, the latter type of data will also be called relational data. In most relational data, a direction can be indicated: the relation itself is directional (e.g., affection from the father to the child), or a respondent says something about another family member. This will be indicated by distinguishing the sender (respondent) from the receiver (target, described person). We shall say that a directed relation is from the sender to the receiver. Undirected relations are also possible (e.g., measuring the frequency of a particular type of interaction between two persons), but are not discussed here.

The father, the mother, and the child can have the role of a sender and also of a receiver. There will be an average effect of the sender (father, mother, child effects as senders) and also an average effect of the receiver (father, mother, child effects as receivers). These are measured by the fixed effects (regression coefficients) of sender and receiver as categorical variables. However, not all fathers are alike, neither are all mothers, nor all children. The variability between them is modeled by random effects associated to the persons in the sending as well as those in the receiving role:

A_{hj} is the random effect of individual h in family j as a sender;

B_{hj} is the random effect of individual h in family j as a receiver.

The multilevel model can be split into a fixed and a random part, just like before. The fixed part will include effects of the sender and receiver as categorical variables, and of other available predictor variables. In this section, we discuss only the specification of the random part. It is convenient to index the observations by the family and the relationship within the family; the family will be indicated as j, the relation by i. The dependent variable is, again, indicated by Y_{ij}. The index i can be a meaningless index number of the directed relationships within the family.

The random part for a relation i in family j with sender h and receiver k (shortly: a relation from h to k) can now be expressed as

$$A_{hj} + B_{kj} + U_{0j} + R_{ij} , \qquad (11)$$

where U_{0j} denotes the random main effect of family j and R_{ij} is, as before, the random residual. The terms in this sum refer to, respectively, a population of senders, a population of receivers, a population of families, and a population of directed relations. This is the same as the Social Relations Model of Kenny and La Voie (1984) and Kashy and Kenny (1990), but these authors give estimation methods only for families of a fixed size with balanced data collection designs. (Examples are complete round robin data, checkerboard data, etc.; see Kenny and La Voie, 1984, p. 150.) The HLM approach is more flexible than the use of the Social Relations Model, because predictor variables (with fixed and/or random effects) can be used without any further complications, and because the design can incorporate families of different sizes with data available for arbitrary collections of pairs within the family.

Formula (11), however, does not have the usual form of the HLM, and a trick is necessary to fit models with such a random part using available multilevel software. Conceptually, three hierarchical levels can be distinguished in this type of data: the directed relation, the individual, and the family. However, the units at these levels are not neatly nested, because each relation belongs to two individuals, rather than one. This implies that there are several, crossed, random effects within the families. This can be seen in expression (11), containing the crossed random effects of the sender, A_{hj}, and of the receiver, B_{kj}. Crossed random effects in multilevel models have been considered by Goldstein (1987, Section 7.1); more complicated situations are treated in Raudenbush (1994) and Goldstein (1994). In the case of relations within relatively small groups such as families, the approach proposed in Goldstein (1987) is sufficient.

Several ways exist, depending on the design of the study, to represent the crossed random effects of sender and receiver so that the model can be estimated with available multilevel software. In any case, the lowest level will correspond to the individual measurements, so that the relations i are the level 1 units; and the highest level corresponds to the families j. Two situations must be distinguished. If the same persons can appear both as senders and as receivers, it will in general be important to allow correlation between the sender effect and the receiver effect of each individual. This implies that one should not have a separate level for individuals: the family level is level 2, and the random sender and receiver effects are random effects at level 2 of dummy variables indicating the sender and receiver. If, on the other hand, there are no persons who have both the role of a sender and of a receiver, there is not the complication that sender - receiver covariances should be incorporated in the model, and it can be convenient to have the families as level 3, with the senders (or receivers) at

level 2, and the random effects of the receivers (or the senders, respectively) as random effects at level 3.

The general approach to modeling relational data if there are individuals who have the sending as well as the receiving roles, using a two-level model, can be explained as follows. It uses dummy variables indicating the sender and the receiver. The dummy variables are denoted fr_{hij} (from) and t_{kij} (to) and they are defined as follows for $h, k = 1, ..., K_j$, where K_j is the number of individuals in family j:

$fr_{hij} = 1$ if relation i in group j is from sender h,
$fr_{hij} = 0$ otherwise;
$t_{kij} = 1$ if relation i in group j is to receiver k,
$t_{kij} = 0$ otherwise.

When the random effects A_{hj} and B_{kj} are given a place in the model as random slopes of the dummy variables f_{hij} and t_{kij}, respectively, the random part (11) gets the correct form for the HLM, comparable to the random part of (5) (but with more than one random slope):

$$\sum_{h=1}^{m_j} A_{hj} fr_{hij} + \sum_{k=1}^{m_j} B_{kj} t_{kij} + U_{0j} + R_{ij} . \qquad (12)$$

Some further specifications are in order, however, because in families individuals are not just persons, but they are fathers, mothers, or children. These specifications consist of restrictions on the variance - covariance structure of the random effects, made in order that this random part of the HLM be an adequate reflection of the positions in the families, and that no statistical problems of under-identification arise. It was mentioned already that there can be a correlation between the sender effect A_{hj} and the receiver effect B_{hj} of the same individual h. It is possible, however, that all other within-family correlations of the random effects in (12) are zero, the main family effect U_{0j} taking account of all within-family correlations. More general models are obtained when some correlations between effects of different persons are included in the model. Examples of such further specifications are the following:

Model a. All correlations between sender and receiver effects of different persons are 0.
Model b. Correlations between effects of parents and effects of children are 0, correlations between effects of different children are 0, but correlations between father's and mother's effect may be non-zero.
Model c. Correlations between effects of parents and effects of children are 0, but correlations between effects of different children as well as correlations between father's and mother's effect may be non-zero.

In many cases, it is reasonable to assume that the children occupy a similar position in the family. This implies that the variances of the random effects for the various children as sender should be restricted to be equal, and likewise the variances of their effects as receivers, and their sender-receiver covariances.

I do not present specific formulae for these models, because the precise specification will depend strongly on the design of the data collection and of the scientific questions being

studied. Instead, the further specification of the multilevel model for relational data is illustrated in two examples.

Reciprocity effects

In addition to the sender and receiver effects, another effect can be important: the reciprocity, or mutuality, effect. This effect expresses that there is a special correspondence between the relation from h to k and the relation from k to h. Reciprocity effects are known to be fundamental in social network analysis; cf. Kenny and La Voie (1984, p. 157) and Wasserman and Faust (1994). For relational variables that have the interpretation of friendship or affection, there is usually a positive correlation between these two reciprocal relations. For relational variables that express a directional inequality, like influence from h on k, or h teaching something to k, there could be a negative correlation between the reciprocal relations. The reciprocity effect can be expressed by random slopes of dummy variables defined as follows. An unordered pair of persons $\{h, k\}$, corresponding to two directed relations, from h to k and from k to h, is called a dyad. Denote the number of dyads in family j by H_j; e.g., for complete relational data for a family of K_j persons, the number of dyads is $H_j = K_j(K_j-1)/2$. Index the dyads by the index number g. Define dummy variables d_{gij} for $g = 1, 2, ..., H_j$, by $d_{gij} = 1$ if directed relation i in family j is one of the two relations forming dyad g, and $d_{gij} = 0$ otherwise. Then the reciprocity effect can be expressed by random slopes, at the family level, of the dummy variables d_{gij}. The variances of these random slopes must be constrained to be equal, and they should have zero covariances with the other random slopes.[1] It should be noted, however, that this way of modeling reciprocity is restricted to positive reciprocity effects, and excludes negative within-dyad correlation.

AN EXAMPLE: RECALLED PARENTAL REARING STYLES

As an example of analysis of relational data with reciprocated relations, some results are presented of a study by Gerlsma (1993) about parental rearing styles. As a part of this study, retrospective data were collected about the parental rearing style with respect to 2 children in each of 60 families. The parents and the two children answered the EMBU, a questionnaire with 4 subscales, about memories of the style in which the parent reared the child (Perris *et al.*, 1980; Dutch form by Arrindell *et al.*, 1983). In the present paper, results are presented about a scale labeled as Affection, consisting of 9 items of the Emotional Warmth subscale of the EMBU (see Gerlsma, 1993, p. 124). Each parent reported about each child, and vice versa, so that a complete data set would have $n_j = 8$ relations per family. Due to incomplete answers, the total number of relations was 358. We can distinguish the following effects:

Family effect;
Sender (rater) effect of father, mother, and child;
Receiver (rated) effect of father, mother, and child;
Reciprocity effect of father-child and mother-child relations.

[1] Reciprocity effects occur only if persons can be senders and receivers simultaneously. For this case I proposed the use of a model with two levels: directed relations within families. An alternative, and formally equivalent way of modeling the reciprocity effect is to use a three-level model where the dyads are the second and the family the third level. The random intercept variance at the second level is then the reciprocity effect. The choice between these model specifications is a matter of convenience.

Since the children occupy the same place in the family, the fixed effects of the two children and the variances of their random effects were restricted to be equal. The results of model fits without and with reciprocity effects are presented in Table 3. From the fixed effects, it can be concluded that on average, children report less warmth than the parents, while these do not differ much from each other. Children report on average less warmth from their fathers than from their mothers.

Several of the random effects are estimated as having a variance of 0. This is not uncommon for random coefficient models: it means that the observed variability on the factor under consideration is less than what would be expected by chance, if the true variance component would indeed be 0. The fact that the associated standard error is also 0 has technical reasons, and should not be taken to imply that one may be sure that this variance is exactly 0. The variance estimate of 0 may be interpreted, of course, as a sign that the true variance is 0 or small.

Table 3. Estimated effects for recalled affection in families, for models without (model 1) and with (model 2) reciprocity effects.

Effect	Estimate model 1	s.e.	Estimate model 2	s.e.
Father as sender (fixed effect)	29.35	0.64	29.35	0.64
Mother as sender (fixed effect)	29.22	0.56	29.22	0.53
Child as sender (fixed effect)	27.62	0.54	27.62	0.54
Father - Mother difference as receivers	-1.69	0.37	-1.70	0.37
Family variance	0	0	0	0
Father as sender variance	16.77	4.30	16.43	4.38
Mother as sender variance	6.63	1.91	7.05	1.91
Child as sender variance	13.56	2.57	13.80	3.15
Father - Mother sender covariance	-0.22	2.02	-0.51	2.03
Father receiver variance	20.27	5.32	19.78	5.45
Mother receiver variance	0	0	0.3	2.45
Child receiver variance	0	0	0	0
Father sender - receiver covariance	9.05	3.68	8.00	3.76
Mother sender - receiver covariance	0	0	1.66	1.43
Child sender - receiver covariance	0	0	0	0
Reciprocity variance rel. with father			2.02	1.25
Reciprocity variance rel. with mother			0.24	0.85
Residual variance	5.27	0.69	4.19	0.89
Deviance	1994.9		1989.2	

The variances of the random effects indicate the differences between families. Since the residual variance is small already in model 1, it may be concluded that the senders and receivers, whose effects are included in the model, tell most of the story. The large variances are those of the senders (especially the fathers) and of the fathers as receivers. The interpretation is (cf. Gerlsma, 1993) that the recalled warmth of the parent is mainly a tale of the rater, and about the father. What the fathers recall, and what is recalled about them, has a high correlation (correlation between fathers effects as senders and as receivers, which can be interpreted as a true score correlation, is $9.05/\sqrt{(16.77 \times 20.27)} = 0.49$). Families as a whole have no influence; the parents do not differentiate between their two children in their reports about the warmth given to them (child receiver variance component is 0).

In other words, the recalled warmth of the mothers is on average greater than that of the fathers (difference 1.69), but the fathers differ strongly from each other (standard deviation of fathers' warmth in their childrens' memory is $\sqrt{20.27} = 4.5$). Since the variance of the mothers as receivers is estimated as 0, the difference between mother and father in warmth as recalled by the children has a normal distribution with mean 1.69 and standard deviation 4.5, which implies that in about 35% of the families, the father is rated as warmer than the mother (correcting for residual error).

The random reciprocity effect approaches significance ($\chi^2 = 5.7$, d.f. = 2, $0.05 < p < 0.10$). Reciprocity is larger for the father than for the mother. Recall that the reciprocity effect says something about the specific dyad, in this case a parent-child dyad. This result shows that the fathers' warmth is more specific for one of their children than the mothers' warmth, but the effect is small.

DISCUSSION

The hierarchical linear model of multilevel analysis offers the possibility of representing the pattern of within-family correlations in a detailed way. The fact that extensive use is made of dummy variables and of equality constraints on estimated random effect variances implies that, to carry out this type of statistical analysis, the researcher must have a reasonable knowledge of multilevel modeling. Using this approach and implementing it in available multilevel software, one can test effects of explanatory variables (included as fixed effects in the model) in a way that takes into account the within-family correlations of the dependent variable; and conclusions can be drawn about the various sources of variability (or residual variability). An attractive feature of the multilevel approach is that different numbers of respondents in different families, and missing data about certain persons or relations within families do not lead to technical problems as long as the incompleteness is random.

Alternative approaches are the use of analysis of variance formulae derived especially for these models and for which specific software is available (e.g., Kenny, 1994), or the use of structural equations modeling, with software such as LISREL or EQS (cf. Kashy and Kenny, 1990). The structural equations model is for our purposes equivalent to the hierarchical linear model in the sense that the random part of the models presented above can be regarded as special instances of the general structural equation model (Bollen, 1989, p. 319-321; Kenny, 1979, p. 200-205). However, the analysis of variance and the structural equations approaches require that complete data are available, or that the data are balanced in some other way (e.g., a checkerboard design in families of fixed size). This is not required in the multilevel

approach. The inclusion of explanatory variables with fixed or family-dependent regression coefficients is straightforward in the multilevel approach, and leads to extra requirements in the analysis of variance and structural equations approaches.

Concluding, the multilevel approach to family data offers a quite flexible data analysis strategy, with parameters that are clearly interpretable, and it can be carried out with software that is beginning to be widely available.

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ADDRESSING THE CHILD'S PERSPECTIVE IN FAMILY ASSESSMENT

S. Célestin-Westreich and I. Ponjaert-Kristoffersen

Family assessment has in recent years been characterized by a trend of growing systematization. The development of several family questionnaires, such as the 'Family Adaptability and Cohesion Evaluation Scales' (Olson et al., 1985) or the 'Family Environment Scale' (Moos, 1981), are evidence of this trend. However, although research findings suggest a marked lack of correspondence between the way children and parents view the family unit, little systematic investigation has been carried out into young children's perception of their family (Achenbach & Mc Conaughy, 1987; Kievit, de Wit, Groenendaal & Tak, 1992; Kortenbout et al, 1993; Levine, Clarke & Ferb, 1981). Family questionnaires, for instance, were mainly devised for use with adults and adolescents. They generally require a certain degree of verbal comprehension and reading skills, as well as sufficient ability to express oneself verbally, requirements which are not readily met by children under ten to twelve years of age. Similarly, research into children's self-evaluative reports (such as structured interviews, self-rating scales) reveals that young children may have considerable difficulty in communicating their experience verbally (Tharinger & Stark, 1990).

To gain an understanding of the child's way of perceiving his or her world, it has therefore been common clinical practice to rely on self-expression techniques during the psychodiagnostic assessment of young children. In family assessment, the Kinetic Family Drawing (KFD; Burns & Kaufman, 1970), the 'Familie In Tieren' (Brem-Gräser, 1950) and the 'Verzauberte Familie' (Kos & Biermann, 1973) have been among the most frequently used projective drawing techniques for evaluating a child's perception of the interpersonal relations within his or her family. However, although the use of these techniques seems more appropriate to the child's developmental level, the quality of these self-expression 'tests' is methodologically unsatisfactory. They usually display a lack of standardized procedures for testing or scoring, and fail to provide accurately defined scoring variables. Furthermore, research using these techniques generally lacks empirical investigation into the validity of the indicators on which interpretations are based, thus offering few guarantees of reliable interpretation of the data. The use of drawing techniques as psychodiagnostic tools has therefore encountered much criticism, but these techniques continue to be widespread in clinical practice (Kievit, de Wit, Groenendaal & Tak, 1992; Tharinger & Stark, 1990; Knoff, 1986; Verhulst & Verheij, 1992; Thomas & Silk, 1993; Mortensen, 1991).

Overall, there appears to be a clear need to allow the child's perspective to be accounted for through a more systematic approach using self-expression tools. This study addresses this issue and frames within an ongoing research project in which the aim is to investigate the options for a valid and reliable use of self-expression tests, and to evaluate the contribution of information obtained via the child's self-expression, as compared to the information obtained via external evaluation from parents and teachers. The aim of the present study was to investigate empirically whether the Animal Family Drawing (AFD) would, with standardization and a consistent scoring system, provide valuable differentiation on the child's way of perceiving the family unit.

METHOD

Subjects

The participants were 63 children, 45 boys and 18 girls, ranging in age from 5 to 12 years. All the children were selected to have an IQ-score either higher than 70 on the WISC-R (for the clinical sample) or higher than Grade I on the Progressive Matrices of Raven (for the control sample). The composition of this study population is summarized in Table 1.

The children from the clinical groups were sampled at the Children's Hospital of Antwerp, and the Medical Pedagogic Institutes 'Remi Quadens' and 'Jongelingshof' (Brasschaat; Antwerp). These children were diagnosed according to the *Diagnostic and Statistical Manual of Mental Disorders III-Revised* (DSMIII-R; American Psychiatric Association, 1987), as having a Pervasive Developmental Disorder - Not Otherwise Specified (PDD-NOS) (n = 16) or Attention Deficit Hyperactivity Disorder (ADHD) (n = 22). Four additional children received a DSMIII-R diagnosis of Mood or Anxiety Disorder.

The control group consisted of 21 children, which were matched with the children from the clinical samples for sex, age, intellectual level of functioning, as well as range among siblings and/or number of children in the family. Control children were selected at primary schools in Antwerp and Brussels.

Table 1. Composition of the Study Sample

	P.D.D. - N.O.S.	A.D.H.D.	Mood/Anxiety Disorders	Controls
Boys	13	16	3	13
Girls	3	6	1	8
N=63	n = 16	n = 22	n = 4	n = 21

INSTRUMENTS

As part of the larger research project, a standardized set of tests for both family and personality assessment was taken from each child and its family (Table 2). To investigate children's self-expression on how they view the family unit, the present study focussed on the Animal Family Drawing test.

Table 2. Instruments

- WISC-R/Raven's Progressive Matrices
- Child Behavior Check List (Achenbach; Dutch version, Verhulst)
- Family Adaptability and Cohesion Evaluation Scale (Dutch version, Buurmeijer & Hermans)
- Family Relations Test (Dutch version, Baarda, van Londen, van Londen-Barentsen; using norms for Belgian population, Ponjaert-Kristoffersen, De Pauw, De Moor, V.U.Brussels)
- Animal Family Drawing test (Revised standardized version, Célestin-Westreich, Ponjaert-Kristoffersen, V.U.Brussels)
- World Game (N. Ojemann)

The Animal Family Drawing (AFD)

The Animal Family Drawing is an extensively revised expressive drawing technique, based on Brem-Gräser's 'Familie In Tieren' (1950) and Kos & Biermann's 'Verzauberte Familie' (1973)(for extensive discussion see earlier publication).

A standardized testing procedure was devised in which the child is first invited to name all family members living at home and then to transform them into animals of his choice. Thereafter, the child is asked to draw this 'animal family' on a blank sheet of A4 paper, using a soft lead pencil without a rubber. The drawing is followed by a standardized inquiry, in which the child is invited to describe each of the animal figures drawn ("What is this animal like?"), to relate pleasurable and unpleasurable experiences to each animal ("What does this animal like best?"/"When does it feel happy"; "What does this animal like least?"/"When does it feel unhappy?") and finally to tell explicitly why (s)he chose each specific animal for each family member.

Procedures

Each child was tested individually following the standardized procedure; blind testing was proceeded for the children of the clinical samples.

Scoring

The scoring system of the AFD test consists of some 140 scoring features: 80 items to be scored for the test as a whole, and 60 items to be scored for each of the animal figures. This scoring system was empirically devised on the basis of a school-based study which saw 380 children aged 5 to 9 take the standardized AFD. Explicit definitions along with scoring specifications are now provided for all scoring variables in the AFD testmanual. This procedure allows for a systematic analysis of drawing and answering characteristics regarding the different parts of the testing, based on the summing up of the family members, the transformation into animals, the drawing itself and the standardized inquiry.

Data Analysis

To explore if the Animal Family Drawing test would differentiate children's perception of the family unit according to clinical status, chi-square tests were computed (significance level $p < .05$). First analysis compared the AFD-features w.r.t. family perception of the clinical group as a whole along with those of the matched control group. Then further differentiation was explored within the clinical group, comparing the sample of children with PDD-NOS along with the sample of children with ADHD (the children with Mood/Anxiety disorders were not included due to small sample size (N=4)). Table 3 summarizes the AFD-features w.r.t. family perception which were found to differentiate significantly.

RESULTS

As shown in Table 3, mainly the AFD-features involving the transformation of the family members into animals and several parts of the inquiry differentiated between the groups.

Summing up of the family members

None of the items regarding the summing up of the family members (e.g. who is named first or last, whether the child forgets to name others or self) was found to differentiate between either clinical and control groups or clinical groups.

Transformation into animals

Significant differences were found as to the trans-formation into animals. Control children tended more often to transform *all family members into different animals* (90%), whereas children from the clinical sample less often provided such a differentiation (58%). These children more frequently turned at least two family members into *animals which are 'related' to each other (e.g. cat and kittens) or identical* (39%). In contrast, less than 10% of the control children turned two or more family members into related animals, and only one of them turned all into identical animals.

Table 3. AFD-Features Significantly Differentiating for groups

	CLINICAL		CONTROL		χ^2sign.level
	PDD-NOS		ADHD		
AFD-features	%	%	%	%	
TRANSFORMATION					
All different	59			91	.01
		38	73		.03
Some similar	39			10	.02
Some identical	27			05	.04
		44	14		.04
'Self-sib.'sim.					
		25	00		.05
Largest animal	63			91	.02
INQUIRY					
Sympath. feat.	25			65	.00
Mother symp.	15			40	.03
Mother desc.	80			55	.04
Corresponding answers	50			81	.02
Nurturing	51			25	.05
'Self' Nurt.	40			15	.05
'Father'Nurt.	05			34	.01
		08	50		.01
'Father'NoNur.	28			05	.04
'Father'Well.	29			65	.01
'Mother'Care.	03			20	.02
Pos. compar. for 'self'	63			95	.01
Not different. for 'self'	23			00	.02

Closer analysis showed further distinctions between the clinical groups. Children with Attention Deficit Hyperactivity Disorder still differentiated more frequently between all family members (73%), compared with children with Pervasive Developmental Disorder-N.O.S. (37%). Only 14% of the children with ADHD chose two or more identical animals, while 44% of the children with PDD-NOS did so. Most often, children with PDD-NOS chose identical animals for 'self and siblings'; whereas none of the children of either clinical group turned both parents into identical animals. In addition, qualitative analysis showed that children with PDD-NOS had more difficulty sticking to their animal choice, and tended to switch the animal attribution between family members during the drawing.

With regard to *the relative size of the animals chosen*, children from the clinical samples less often had *a largest animal choice* (63%), compared with controls (91%).

Drawing of the 'animal family'

No significant differences were found as to drawing features commonly hypothesized to express relational aspects, such as relative size and placing of the figures. In line with our own previous results based on a school-based sample, features such as figures overlapping or touching, facing each other or turning away, or barriers between figures were rather exceptional and appeared to occur rarely in both the clinical and control samples.

INQUIRY

Description of the animal figures.

Normal controls frequently described themselves or parents in *'positive' or 'sympathetic' terms* (such as nice, gentle, cute, beautiful, strong,...) (65%), while only one fourth of the children from the clinical samples did so. Further analysis showed that children in the control group especially attributed *sympathetic features to the mother figure* (40%). In contrast, only 15% of the children from the clinical sample did so. Similarly, referred children gave far more frequently purely *descriptive answers for the mother figure* (80%) (e.g. brown color, long fur, large,...) as compared to the controls (55%).

No significant differences were found for answering features hypothesized to explicitly express relational aspects in the inquiry, such as mentioning interactions between the animal family figures. However, *corresponding answers* for several animal figures (e.g. same description, preoccupation with the same pleasurable or unpleasurable experiences) were found less frequently in the clinical group (49%) than in the control group (81%).

Attribution of pleasurable and unpleasurable themes.

One principal theme: whether or not an animal figure/family member received *nurturing*, came forward as a main differentiating feature between clinical and control groups, and clinical samples. Thus, half of the children from the clinical group mentioned *'being nurtured' as a pleasant experience* (e.g. getting food, being taken care of) compared with only one fourth of the control children.

Further analysis showed that nurturing was mentioned for the animal representing the child itself more frequently in the clinical group than in the control group, with up to half of the children with ADHD mentioning *being nurtured as a pleasant experience*.

Referred children also mentioned the nurturing theme more frequently for the animal figure representing the father (35%), whereas only 5% of the children from the control group did

so. Again, half of the children with ADHD compared with only 8% of the cildren with PDD-NOS, attributed *being nurtured as a pleasant experience* to the father figure. All answers here concerned the more elementary aspects of nurturing, such as getting food and sleeping, rather than receiving affection or attention. Similarly, fathers were more frequently depicted as preoccupied with *a lack of nurturing as an unpleasurable experience* in the clinical group (28%) as compared to the control group (5%). Conversely, 65% of the children from the control group mentioned the father figure as enjoying *a feeling of freedom and wellbeing* (e.g. playing around, running free,) compared with 29% of the children from the clinical group.

For the animal figure representing the mother, the theme of *taking care of others* came out as a differentiating feature. One fifth of the children from the control group described the mother figure as preoccupied with taking care of others,whereas only one of the children from the clinical group did so.

Reasons for the animal choice.

Finally, AFD-features regarding the analysis of why a specific animal was chosen for a family member differentiated only with regard to the figure representing the child itself. More precisely, almost all children from the control group mentioned pleasant features characterizing the animal chosen, when explaining their animal choice ("it's a nice animal", "it can run fast", "it's strong"). Children from both clinical samples did so less frequently and provided less differentiating answers ("because I like it").

DISCUSSION & CONCLUSIONS

The results support our hypothesis that with standardized use and consistent scoring, a number of features on the Animal Family Drawing differentiate between the clinical and control groups, and between the clinical samples. Given these results, it was mainly Animal Family Drawing features regarding the transformation into the animals and the inquiry which differentiated children whith a diagnosis of Pervasive Developmental Disorder-N.O.S. (PDD-NOS), children with Attention Deficit Hyperactivity Disorder (ADHD) and controls.

Children from both clinical samples provided less differentiation between the family members in their transformation. Children with PDD-NOS in particular were more likely to turn family members into identical or related animal figures (especially 'self and siblings'). Normal controls, however, were more likely to choose a different animal for each family member, but also showed more frequently correspondences in their descriptions between family members. When asked to describe the animal figures, normal controls were also more likely to do so in 'positive' or sympathetic terms, especially for the mother figure; whereas children from both clinical samples tended to provide more descriptive answers for the mother figure. Furthermore, a main differentiating feature which came out as to the themes attributed to the animal figures was the nurturing theme. Family figures of the children from the clinical samples were more preoccupied with being nurtured, for self and father figures, or giving care, for the mother figure; than were the family figures of the normal controls. Here, children with ADHD stood out as being most concerned with the nurturing theme. Finally, children from the control group were more likely to give differentiated and 'positively' connotated reasons for their animal choice representing the self, compared with children from the clinical groups.

In contrast, drawing features commonly thought to reflect interpersonal aspects (concerning placing, direction or relative size of the figures) did not differentiate between the present sample of normal controls and children whith PDD-NOS or ADHD.

Overall, the present findings indicate the relevance of a systematic approach when using a drawing technique such as the Animal Family Drawing. This approach provided a means to distinguish a number of significant differentiating features on the Animal Family Drawing test and emphasizes the need for empirical research into the validity of indicators classically purported to be meaningful. Lack of confirming significant drawing characteristics in research may thus be due to the difficulty of integrating aspects of the drawing process in the final product analysis. Moreover, it stresses the importance of taking into account the child's attributions rather than relying on projective interpretations only. Further investigation on larger samples as well as reliability research is needed to allow these results to be generalized.

Furthermore, the results of this study also support previous research in the area of self-expressive measures by indicating that reliance on individual indicators is not sufficient as a sole means for differential diagnostic use. It appears that a meaningful interpretation of results on the Animal Family Drawing requires the development of a comprehensive system in which individually significant indicators are combined into an integrative interpretation profile. The research directions outlined above are pursued in the context of ongoing research in order to enhance the use of the Animal Family Drawing test in family assessment.

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CONCEPT MAPPING IN THE CONTEXT OF MODELIZATION OF INTERVENTIONS WITH FAMILIES IN CRISIS

Christian Dagenais and Camil Bouchard

This chapter examines the contribution of the Concept Mapping Technique (CMT) (Trochim, 1989a, 1989b to the first phase of a study of the theory of action of persons directly involved in youth protection. This study seeks to respond to the concerns of social practitioners who expressed the wish to examine their practice when dealing withn families in crisis. The object of the study is to build the model or models of intervention to which practioners implicitly refer, with regard to the following aspects:

1) the *definition* of crisis adopted by social practitioners;
2) the *procedure* followed by practitioners in a crisis situation;
3) the *aims and objectives pursued* by practitioners when carrying out each specific intervention in a crisis situation;
4) the *premises* underlying practitioners' interventions (implicit theories);
5) the *obstacles* to effective intervention arising in the normal course of practitioners' work.

Crisis intervention may seek to achieve a variety of aims and take diverse forms. In several parts of the world, efforts are currently made to more clearly identify what in practice constitutes a crisis situation and what innovations might help improve the services provided in these circumstances (Kinney, Haapala & Booth, 1991; Nelson, Landsman & Deutelbaum, 1990; Pecora, in press). This effort is all the more relevant given that the literature provides little information on the objectives, the actions to be taken, and the principles underlying intervention in regard to youth protection (Dagenais & Bouchard, 1992, 1993). In cases where a child's safety is at stake, and not necessarily *a person's psychological balance*, the very notion of crisis is ambiguous. The situation is even more ambiguous when the family is legally compelled to collaborate. In such circumstances, it is far from clear that a family will be more receptive to help because its members experience a crisis. In short, we as yet know little about the factors essential to an effective intervention and we know little more about the very definition of what constitutes a crisis in the youth protection context (Dagenais, 1994). Practitioners are grappling with questions about the very nature of crisis, the objectives to pursue in such a situation, and the adequacy of their interventions to settle the crisis.

Our methodological choices are based largely on the Pattern Matching approach (Cook & Campbell, 1979; Trochim, 1985, 1989a), which states that converging results obtained by different methods of data collection are more credible than results obtained through use of a single method.

The first phase of the study was aimed at building a representation of the theory of action of the CPEJL in relation to crisis intervention as expressed by practitioners (n=12) during two group sessions. The CMT developed by Trochim (1989a, 1989b) was used to organize the material expressed by these practitioners so that results could be graphically portrayed. During the second phase of the study (not described here), 31 other staff members were interviewed individually and invited to describe three recent interventions. Through computer-assisted qualitative analysis of the content of these interviews, relations among various aspects of the data are identified. These analyses, based on the Grounded theory approach (Corbin &

Strauss, 1990) are carried out using the NUD*IST 3.0 program (La Trobe University, Melbourne). In the final phase, results obtained through both techniques will be compared.

METHODOLOGY

Participants

Twelve (12) practitioners were chosen to participate in this first phase of the study according to two criteria: (a) the type of task performed, namely assessment and referral or taking charge of cases reported to the youth protection agency; and (b) the team to which they belonged, namely physical abuse and neglect or behavioral problems. A team of child-care workers recently assigned to youth protection activities was also part of this group. The process used to select participants was to randomly choose one out of three practitioners in each team. Table 1 presents the five subgroups of participants.

Table 1. Subgroups of participants (n=12)

	Child-care workers	Assessment/referral	Taking Charge
Behavioral problems	A (n=3)	B (n=3)	C (n=3)
Physical abuse/neglect		D (n=2)	E (n=2)

The Concept Mapping process

The CMT is a mean of organizing qualitative data through a series of statistical analysis. The process makes it possible to discover links between ideas, to make sense of them and to generate a visual representation of results. This technique offers a number of advantages: (a) it supplies graphs or images that simultaneously represent all the model's main concepts and their interrelationships; (b) it uses the participants' vocabulary; and (c) it fosters cohesiveness among participants who are involved throughout the process (Trochim 1989a, 1989b). Participants are encouraged to make the necessary efforts to understand, organize, and assimilate various concepts in order to arrive at a collective opinion (Fisher, 1990). In this regard, the technique is compatible with a research-action approach which is essentially based on the participation of those concerned throughout all phases of the study and seeks to enable participants to take ownership of the process and the results.

Table 2: List of statements

1 Places the practitioner under severe stress
2 Urgency
3 Family dysfunction may jeopardize the child's safety
4 Loss of parental authority
5 Teenage crisis
6 Parent/child confrontation
7 Action/reaction
8 Lack of resources
9 Parental incompetency
10 Social isolation
11 Control
12 Rejection, abandonment
13 Crisis situation: one of the most important conditions for a Youth Protection Agency intervention
14 Suffering of family members
15 Violence, aggressiveness, threats, intimidation
16 Lack of understanding in the family
17 Inadequate behavior
18 Suicide attempt
19 Drugs
20 Denunciation versus support
21 Obligation to intervene
22 Client's failure to recognize the existence of the problem
23 Child's vulnerability related to age and family environment
24 School
25 Anger
26 Alliance
27 Power struggle
28 Accumulation
29 Feelings of failure, incompetence, and guilt
30 Frustration
31 Infants in physical danger
32 Police intervention
33 Judicious intervention
34 Judicial intervention
35 Reconstituted family
36 Cyclical crises
37 Limited intervention
38 Crisis: moment of growth
39 Placement
40 Measures to cut short an episode of acting-out
41 Feeling of being powerless
42 Intensity of crisis proportional to the stress experienced by the practitioner
43 Practitioner's varying moods
44 Professionalism of the practitioner
45 Speed with which one must gauge the situation
46 Need to intervene rapidly
47 Lapse of time before intervening
48 Intensity of crisis varies over time
49 Duration of the intervention
50 The practitioner becomes an actor in the crisis
51 Pressure linked to expectations of persons filing the report
52 Parents' failure to take responsibility
53 Person who filed the report shrugging off reponsibility
54 Deciding to wait for the next crisis to take action (family)
55 Prescribing the crisis (practitioner)
56 Practitioner's receptiveness to the crisis
57 Crisis management
58 Difficult to reconcile differing perceptions of various persons involved concerning decisions
59 Difficult to gather facts
60 Massive mobilization of a different communication system to deal with the crisis
61 Making decisions quickly and under pressure
62 Pressure linked to having to mobilize family, community, and institutional resources quickly
63 Having to justify our decisions before the the administration and the courts
64 Practitioner's imputability
65 Need for organizational support
66 Relative autonomy of the practitioner
67 Distance to be covered
68 Discrepancy between real power and effective power
69 Risk management fraught with consequences
70 Social pressures related to the concept of protection
71 Notion of clientèle's chronicity
72 Lack of recognition of our competence and expertise by partners
73 Support for the intervention from close relatives
74 Judicial delays and red tape
75 Abuse, betrayal, harassment, break-up
76 Crisis unprofitable
77 Child used as a scapegoat
78 Child as a family symptom
79 Crisis sparked off by the intervention
80 Difficulty in coping with multiple problems
81 Risk linked to working in an open environment (for practitioner's safety)
82 Isolation of the practitioner
83 Support available but not always used
84 Pressure from supervisors to increase productivity
85 Lack of human resources to support practitioner's intervention
86 Demanding situation in emotional terms
87 Crisis situation: impact on personal life
88 Repetitive character of different crises: emotionally draining
89 Disruptive effect on work schedule
90 Consequences of failure to honor certain commitments because of crises
91 Crisis has an impact on organization of personal life
92 Practitioner's excessive caseload results in a crisis situation developing for clients and their network
93 Crisis leading to self-doubts
94 Certain situations may create a crisis for the practitioner
95 Rapidly detecting what is wrong beyond the crisis situation
96 Mandate to keep the symptom under control incompatible with fundamental change
97 Clinical versus administrative mandate
98 Bureaucratic delays or ineptness can create or perpetuate a crisis

First group session

CMT involves a series of operations, carried out during two group sessions. Three tasks were completed during the first session. First, participants were asked to generate a list of statements composed of one or several words during a brain-storming session in response to the following question:

What are the characteristics of crisis intervention in a youth protection context?

Throughout the process, participants were reminded that the statements must fully cover all aspects pertaining to: (a) the intervention, (b) the work organization, and (c) the families. A final list of 98 statements was generated during this session (Table 2). Participants were then invited to take a break, during which time the series of statements was printed in a list form as well as on individual cards.When the session resumed, each participant received the list of statements and a pile of 98 cards (one for each statement). Participants were then invited to individually perform two operations. First, they were asked to group the cards *in a way that made sense to them.* Participants were instructed to make as many piles as they wished but to not place a statement in more than one pile. Subsequent analysis of these groupings led to identification of conceptual categories. Participants were then invited to rate the importance of each statement on a 5-point scale, giving higher scores to more important statements.

Statistical analysis

Maps were drawn on the basis of a series of statistical analysis carried out in the following manner. First, statements elicited during group sessions were organized into a matrix, the number of rows and columns being equal to the number of statements. The matrix indicates the number of times each statement was associated with each of the others. This provides information on how participants, as a group, conceive of the connections among statements. The strength of the connection between any two statements is determined by the number of times they were placed in the same pile. Thus, a pair of statements placed in the same pile by all the participants would obtain a correlation of one whereas a pair of statements that were never placed in the same pile would be given a correlation of zero.

Secondly, these data were submitted to a multivariate analysis known as *multidimensional scaling*. This analysis indicates the position of each statement in relation to the others and provides the basis for preliminary construction of the map. In multidimensional scaling, the correlational distance between concepts is spatially represented on a graph. The most strongly correlated concepts are closest together on the graph, whereas the most weakly correlated statements are at opposite ends (Figure 1).

Thirdly, a statistical analysis called *hierarchical cluster analysis* groups statements expressing similar concepts in clusters. With this procedure, using Ward's algorythm, any number of clusters may be generated, from 98, or a single concept per cluster, to a single cluster including all the concepts. At the outset, each statement is treated as a separate cluster. Each subsequent step serves to determine whether a statement is sufficiently similar to one or several others to be included in the same cluster. The fourth mathematical operation is to calculate the mean of the ratings attributed by participants (during the third stage of the first session) to each statement in each cluster in order to assess their relative importance.

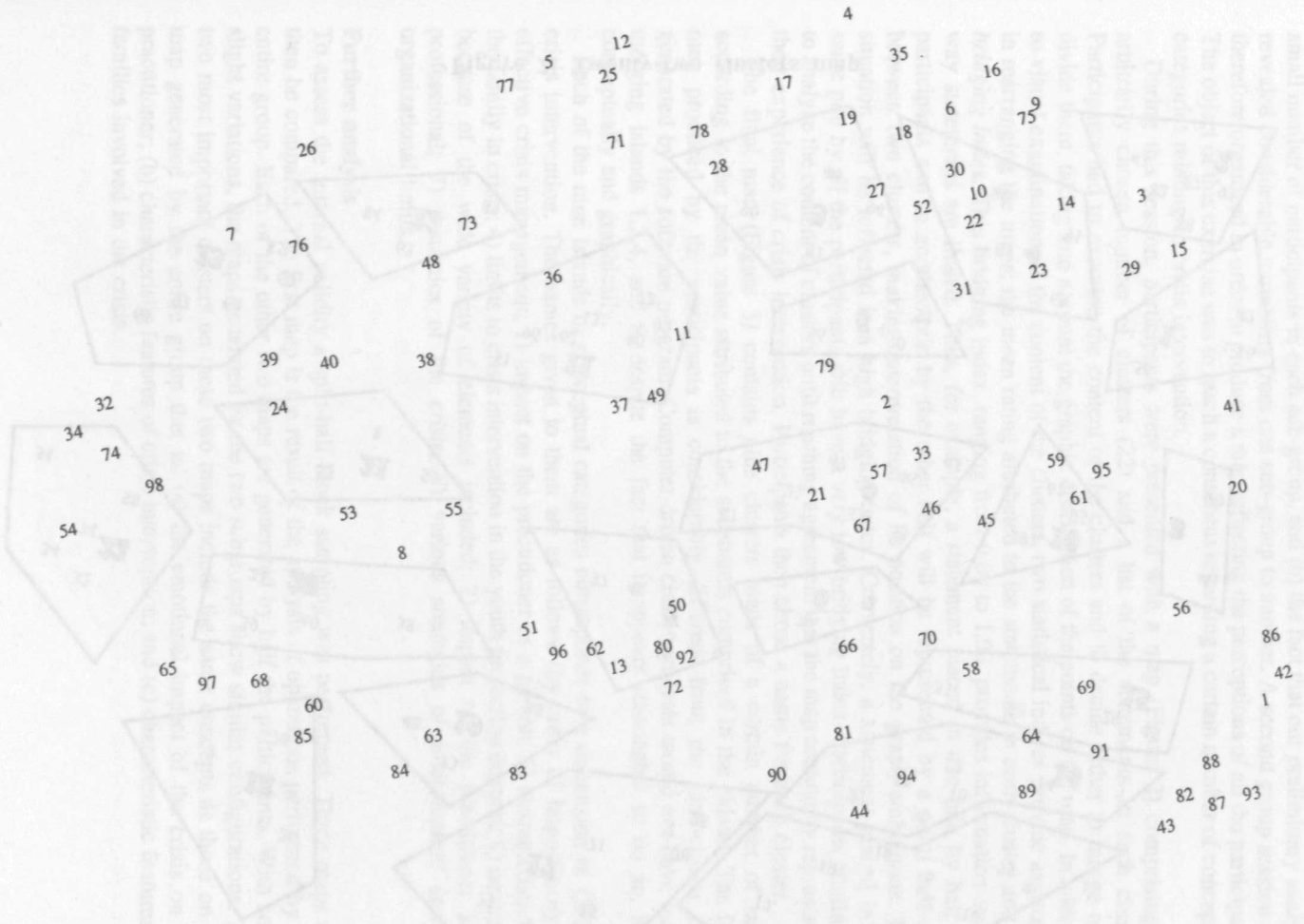

Figure 1: Configuration of points

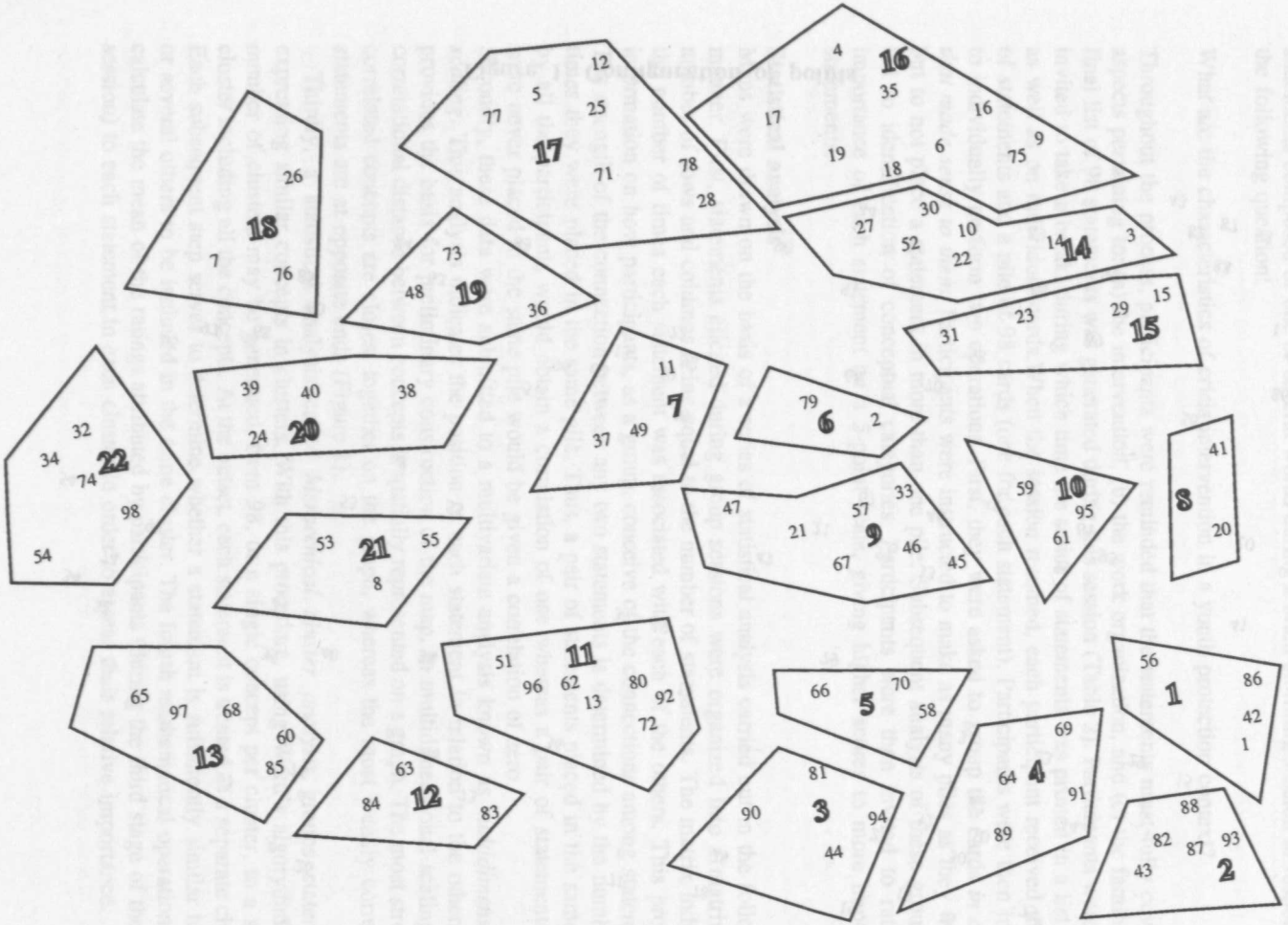

Figure 2: Twenty-two clusters map

It is suggested that the researcher should decide on the appropriate number of clusters before inviting participants to give a name to each conceptual category (Trochim 1989a). Instead, we chose to let the participants decide how many clusters were needed, given (a) the very small number of participants in each sub-group, and (b) the fact that our preliminary analyses revealed considerable variability from one sub-group to another. A second group session was therefore organized in order to produce a map reflecting the perceptions of all the participants. The object of this exercise was to reach a consensus regarding a certain number of conceptual categories relating to crisis intervention.

During this session, participants were presented with a map (Figure 2) comprising an arbitrarily chosen number of clusters (22) and a list of the statements in each cluster. Participants had to examine the content of the clusters and to decide either to merge or to divide them, taking into account the graphic distribution of the points on the map. In addition to visual examination of the content of the clusters, two statistical indices provide assistance in rearranging the maps: the mean rating attributed to the statements in each cluster and the *bridging index*. This bridging index, ranging from 0.00 to 1.00, provides information on the way statements are linked. Thus, for example, a statement placed in one pile by half the participants and in another pile by the other half will be represented by a point half-way between two clusters, making interpretation of its position on the graph ambiguous. This situation will be reflected in a high bridging index. Conversely, a statement placed in the same pile by all the participants will have a very low bridging index. Participants continued to analyze the content of clusters until reaching agreement that the map accurately represented their experience of crisis intervention. Participants then chose a name for each cluster.

The final map (Figure 3) contains nine clusters made of a certain number of strata according to the mean value attributed to the statements comprised in the cluster. The final map produced by the participants is considerably different from the nine-cluster map generated by the software program. Computer-driven cluster analysis would not have led to merging islands 1,2,4, and 8, despite the fact that it appears reasonable to do so, both conceptually and graphically.

Each of the nine islands or conceptual categories corresponds to a dimension of CPEJL crisis intervention. The names given to them are as follows (by order of importance): 3) effective crisis management; 1) impact on the practitioner as a person; 6) characteristics of the family in crisis; 4) limits to crisis intervention in the youth protection context; 9) unnamed because of the wide variety of elements included; 2) impact on the practitioner as a professional; 7) dynamics of the crisis; 8) various strategies of intervention; and 5) organizational limits.

Further analysis

To assess the internal validity a split-half block sampling was performed. Three maps can then be compared. The first map is the result of the analysis of operations performed by the entire group. Each of the other two maps are generated by half the participants. With some slight variations, the maps generated by the two subgroups show similar configurations. The two most important clusters on these two maps include the same concepts as those on the map generated by the entire group that is: (a) the emotional impact of the crisis on the practitioner; (b) characteristic features of crisis intervention; and (c) characteristic features of families involved in the crisis.

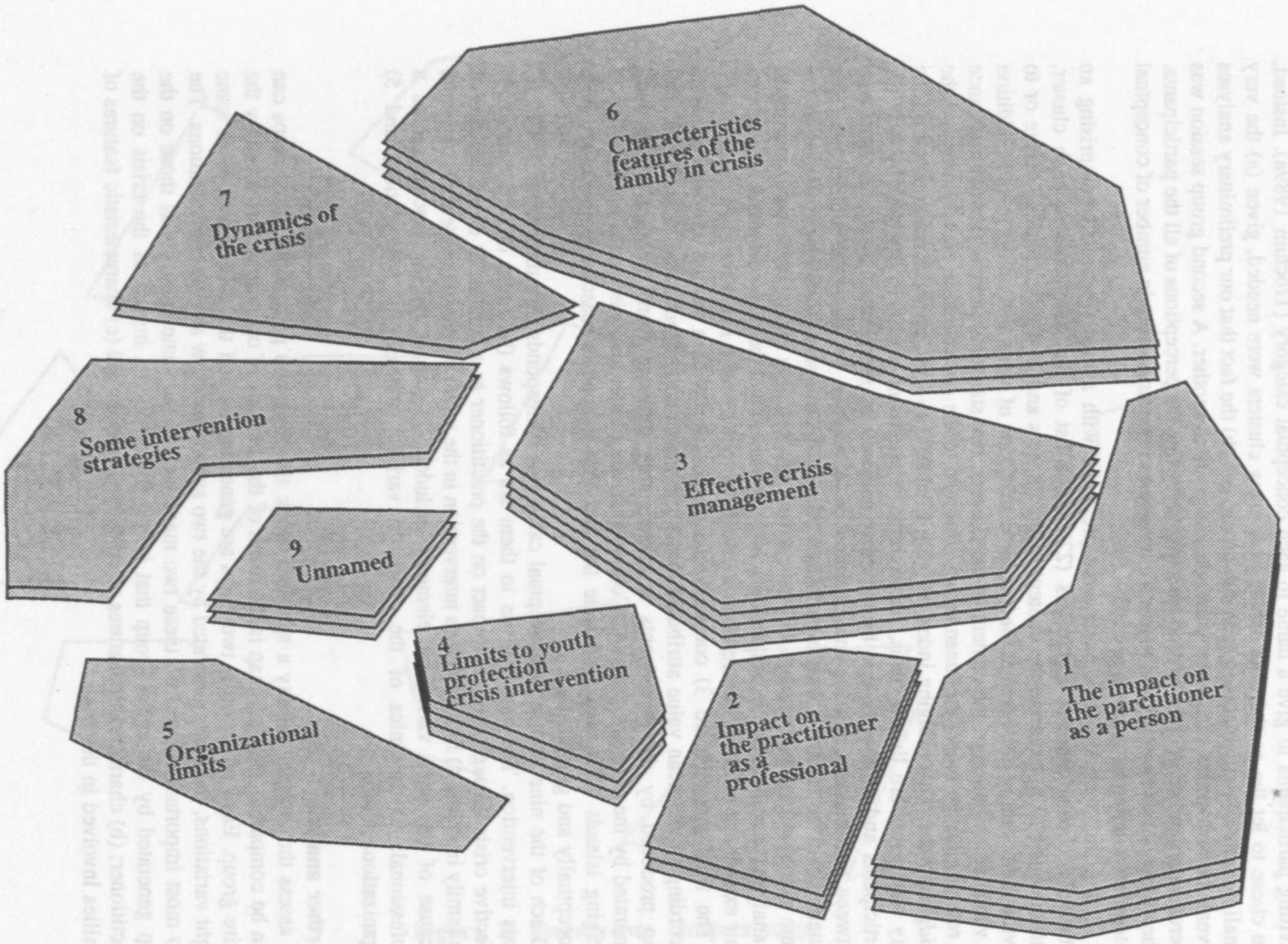

Figure 3: Final map

To assess the discriminative power of the technique we produced new maps for each category of participants: sub-groups A, B, C, D, E, B-C, D-E, B-D, and C-E (see Table 1), once again choosing to portray nine clusters for each sub-group. Analysis of these maps leads us to identify four main tendencies.

The map produced by the child-care workers (sub-group A) is markedly different from all the others. The main difference lies in the very high degree of homogeneity of the clusters found in this subgroup map. No other map shows such homogeneous grouping of concepts which indicate a stronger tendency of child-care workers to view the same relations among statements. This may be linked to the very specific responsibility assigned to child-care workers, that of working with young people with behavior problems to try to avoid placement. The two most important clusters on their map comprising statements about the need for urgent intervention and the cumbersome nature of the legal mandate are given greater importance here than on any other map.

Although the map produced by the practitioners responsible for assessment and referral (B-D) resembles the general map, a comparison of maps B, C, and D reveals a consistent difference. On map B (staff assigned to assessment in cases involving behavioral problems), statements regarding the characteristics of families in crisis are placed in the two most important clusters, whereas the same statements are rated among the least important on maps produced by subgroups C and D. On these latter maps, these clusters received very low bridging indices. This suggests that constitution of this category was not a matter of chance, at least for these participants. This may indicate that the situation appears less urgent to practitioners assigned to dealing with problems related to neglect or taking charge of families once the crisis has already started to sort itself out.

Fourthly, on all the maps except A and B, considerable importance is given to the emotional impact on the practitioner. This suggests that the stress experienced by practitioners should constitute a central feature in the modelization of their practice regarding family crisis.

DISCUSSION AND CONCLUSION

To the best of our knowledge, there has to date been no systematic effort to identify the main characteristics of crisis intervention in the youth protection context. Apart from a few rare models proposed by youth protection practitioners to describe their personal practice (see O'Hagan, 1984) there is little data on which to base an overall view of the question.

The maps produced in the course of this study cannot be said to represent the organization's theory of action; but they provide a very useful conceptual framework for systematic theory building. The first phase of our study revealed the colossal complexity of the relations between different aspects of crisis intervention in the youth protection context, all the greater when one considers the different categories of practitioners. The second phase of this study will involve analysis of the data collected during interviews with 31 other practitioners, with reference to active files with which they are dealing. These results will then be compared with those obtained through the concept mapping process. This second phase will also help to establish with greater certainty to what extent the conceptions of different categories of practitioners are similar or different. It will also permit to evaluate the degree of similarity of the models which were created during the CMT sessions and the models decoded from practitioners' real practice.

In social sciences, the most common practice is to adopt a heuristic procedure (Aldenderfer & Blashfield, 1984) in which decisions are based on a subjective examination of the different levels of analysis. In the present instance, this subjective examination was carried out collectively and led to a reorganization of the clusters shaped through statistical analysis. In view of the small number of participants relative to the multiple categories of practitioners, we consider the results to be satisfactory.

All in all, we evaluate that the CMT as used in the context of research with child protection actors is a valuable tool in the following ways:

1) it really gives the main actors an opportunity to think over their practice in an active and challenging way;
2) it gives them a quick feed-back on their way of conceptualizing and acting upon a problem (reduces the complexity);
3) it seems to provide a fair representation of their theory of action both in terms of our test of internal validity and of discriminative power;
4) as we are now starting to present those data to the service managers, the CMT proves to be a very efficient tool in giving them the opportunity to see that the crisis they are dealing with is not as much a crisis of the families as it is a context of urgency and of lack of ressources and knowledge about how to solve some complex family problems;
5) CMT is also a tool which permits a close collaboration between researchers and practitioners; it gives the researchers an opportunity to organize in a formal way data of phenomenological nature.

We have yet do not know if we would get the same patterns with different practitioners placed in a similar context. We have some doubts about it, the style and experience of the researcher playing a big part in the nature and the quality of the data collected. We also feel that the data are very much the results of compromises among practitioners and between practitioners and researchers and we are still struggling about the best way to generate the data since the maps produced by the practitioners and those produced by the computer are not exactly the same.

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Table 3: List of statements in each cluster

N Total	Ratings	Bridgings
Cluster 1: The impact on the practitioner as a person		
1. Places the practitioner under severe stress	4.17	0.31
42. Intensity of crisis proportional to the stress experienced by the practitioner	3.08	0.42
86. Demanding situation in emotional terms	4.42	0.37
56. Practitioner's receptiveness to the crisis	4.50	0.34
43. Practitioner's varying moods	3.08	0.18
88. Repetitive character of different crises: emotionally draining	4.08	0.26
82. Isolation of the practitioner	3.67	0.21
87. Crisis situation: impact on personal life	3.83	0.22
93. Crisis leading to self-doubts	2.67	0.34
64. Practitioner's imputability	3.50	0.21
89. Disruptive effect on work schedule	3.42	0.19
91. Crisis has an impact on organization of personal life	2.92	0.19
69. Risk management fraught with consequences	3.67	0.23
20. Denunciation versus support	3.33	0.67
41. Feeling of being powerless	3.50	0.51
	μ = 3.59	**μ = 0.31**
Cluster 2: Impact on the practitioner as a professional		
44. Professionalism of the practitioner	3.75	0.29
94. Certain situations may create a crisis for the practitioner	2.33	0.20
81. Risk linked to working in an open environment (for practitioner's safety)	3.58	0.22
90. Consequences of failure to honor certain commitments because of crises	3.00	0.21
58. Difficult to reconcile differing perceptions of various persons...	2.58	0.26
70. Social pressures related to the concept of protection	3.25	0.30
66. Relative autonomy of the practitioner	3.92	0.30
	μ = 3.20	**μ = 0.25**
Cluster 3: Effective crisis management		
2. Urgency	3.58	0.27
67. Distance to be covered	2.58	0.25
79. Crisis sparked off by the intervention	3.25	0.28
11. Control	3.36	0.33
37. Limited intervention	3.42	0.30
49. Duration of the intervention	3.83	0.30
21. Obligation to intervene	3.83	0.26
47. Lapse of time before intervening	3.92	0.24
33. Judicious intervention	3.92	0.28
57. Crisis management	4.17	0.23
45. Speed with which one must gauge the situation	4.25	0.22
46. Need to intervene rapidly	4.00	0.22
59. Difficult to gather facts	2.67	0.34
61. Making decisions quickly and under pressure	4.08	0.30
95. Rapidly detecting what is wrong beyond the crisis situation	3.83	0.30
	μ = 3.65	**μ = 0.27**
Cluster 4: Limits to youth protection crisis intervention		
13. Crisis situation: one of the most important conditions for a Youth	3.42	0.22
62. Pressure linked to having to mobilize family, community, and institutional...	3.75	0.23
96. Mandate to keep the symptom under control incompatible with ... change	2.75	0.26
51. Pressure linked to expectations of persons filing the report	2.83	0.27
50. The practitioner becomes an actor in the crisis	3.45	0.25
80. Difficulty in coping with multiple problems	3.75	0.23
	μ = 3.34	**μ = 0.24**
Cluster 5: Organizational limits		
72. Lack of recognition of our competence and expertise by partners	2.67	0.28
92. Practitioner's excessive caseload results in a crisis situation developing for ...	3.50	0.21
63. Having to justify our decisions before the the administration and the courts	2.83	0.29
84. Pressure from supervisors to increase productivity	2.25	0.30
83. Support available but not always used	2.75	0.31
60. Massive mobilization of a different communication system to deal with crisis	3.08	0.47
85. Lack of human resources to support practitioner's intervention	3.00	0.33
65. Need for organizational support	4.00	0.45
97. Clinical versus administrative mandate	2.82	0.44
(68. Discrepancy between real power and effective power)		
	μ = 2.99	**μ = 0.34**
Cluster 6: Characteristic features of the family in crisis		
3. Family dysfunction may jeopardize the child's safety	3.75	0.25
14. Suffering of family members	3.08	0.14
22. Client's failure to recognize the existence of the problem	3.33	0.15
10. Social isolation	3.42	0.09
30. Frustration	3.83	0.09
27. Power struggle	3.67	0.07
52. Parents' failure to take responsibility	3.92	0.09
15. Violence, aggressiveness, threats, intimidation	4.42	0.37
29. Feelings of failure, incompetence, and guilt	3.50	0.34
23. Child's vulnerability related to age and family environment	4.33	0.23
31. Infants in physical danger	4.08	0.25
4. Loss of parental authority	3.00	0.02
17. Inadequate behavior	3.17	0.01
19. Drugs	3.08	0.00
18. Suicide attempt	3.58	0.00
35. Reconstituted family	2.42	0.00
6. Parent/child confrontation	3.50	0.01
9. Parental incompetency	3.92	0.06
16. Lack of understanding in the family	3.17	0.02
75. Abuse, betrayal, harassment, break-up	3.50	0.07
5. Teenage crisis	2.50	0.21
25. Anger	3.67	0.17
12. Rejection, abandonment	3.33	0.04
77. Child used as a scapegoat	3.08	0.04
78. Child as a family symptom	3.18	0.04
28. Accumulation	3.42	0.15
	μ = 3.46	**μ = 0.11**
Cluster 7: Dynamics of the crisis		
71. Notion of clientèle's chronicity	2.75	0.16
(7. Action/reaction)		
(76. Crisis unprofitable)		
26. Alliance	3.00	0.70
36. Cyclical crises	2.75	0.25
48. Intensity of crisis varies over time	3.60	0.40
73. Support for the intervention from close relatives	3.50	0.47
	μ = 3.12	**μ = 0.40**
Cluster 8: Some intervention strategies		
(24. School)		
39. Placement	3.33	0.68
40. Measures to cut short an episode of acting-out	3.08	0.54
38. Crisis: moment of growth	3.92	0.52
55. Prescribing the crisis (practitioner)	2.83	0.56
32. Police intervention	2.82	0.64
34. Judicial intervention	3.00	0.66
54. Deciding to wait for the next crisis to take action (family)	2.58	1.00
	μ = 3.08	**μ = 0.66**
Cluster 9		
8. Lack of resources	3.58	0.46
53. Person who filed the report shrugging off reponsibility	2.83	0.57
74. Judicial delays and red tape	3.67	0.61
98. Bureaucratic delays or ineptness can create or perpetuate a crisis	2.83	0.56
	μ = 3.23	**μ = 0.55**

MULTILEVEL COVARIANCE STRUCTURES FOR FAMILY DATA

J.J. Hox and M.E. Jacobs

When a research problem concerns the relationships between attributes of individuals and attributes of the families of which they are part, the research topic involves a multilevel problem. In multilevel research, the data structure in the population is hierarchical, and the sample data are viewed as a multistage sample from this hierarchical population. Thus, in family research, the population consists of families and individuals within these families, and the sampling procedure proceeds in two stages: first we take a sample of families, and next we take a sample of individuals within each family.

The theoretical concept behind multilevel research is that individuals interact with the social contexts to which they belong. Thus, individual persons are influenced by the families to which they belong, and the properties of these families are in turn influenced by the individuals who make up that family. Individuals and families are conceptualized as a hierarchical system, with individuals and families defining separate levels of this hierarchy. Naturally, such hierarchical systems can be observed at different hierarchical levels, and as a result may have variables defined at each level. This leads to research into the interaction between variables that describe the individuals and variables that describe the families.

In this book, Snijders describes several applications of the multilevel regression model to family data. Multilevel regression models are essentially a multilevel version of the familiar multiple regression model. As Cohen and Cohen (1983) and others have shown, the multiple regression model is very versatile. Using dummy coding for categorical variables, it can be used to analyze a wide variety of research problems. Snijders uses dummy coding to model both relationships and variance components within one comprehensive model.

In our contribution, we describe the application of covariance structure analysis to multilevel family data. The general statistical model for multilevel covariance structure analysis is quite complicated. This chapter describes a simplified statistical model proposed by Muthén (cf. Muthén, 1994), which can be estimated with conventional software such as Lisrel. We confine ourselves to multilevel exploratory factor analysis and a simple confirmative path model, but the extension of the approach to other models is straightforward (cf. Muthén, 1989; McDonald, 1994; Hox, 1994).

THE BASIC DECOMPOSITION MODEL FOR A HIERARCHICAL POPULATION

Suppose we have data from N individuals, divided into G family-groups. The individual data are denoted by $\mathbf{Y}_{ig}$ (subscripts i for individuals, i=1..N; g for groups, g=1..G). Cronbach and Webb (1975) have proposed to decompose the individual $\mathbf{Y}_{ig}$ into a between groups component $\mathbf{Y}_B = \overline{\mathbf{Y}}_{.g}$ and a within groups component $\mathbf{Y}_W = \mathbf{Y}_{ig} - \overline{\mathbf{Y}}_{.g}$. Thus, for each individual we replace the observed *Total* score $\mathbf{Y}_T = \mathbf{Y}_{ig}$ by its components: the group mean $\mathbf{Y}_B$ and the individual deviation from the group mean $\mathbf{Y}_W$. These two components have the attractive property that they are orthogonal (uncorrelated) and additive.

Multilevel structural models assume that we have a population of individuals that are divided into groups. If we decompose the population data we have, for the population covariance matrices:

$$\Sigma_T = \Sigma_B + \Sigma_W. \quad (1)$$

Multilevel covariance structure models assume that the population covariance matrices Σ_B and Σ_W are described by separate models for the between families and within families structure.

Unfortunately, the sample between families covariance matrix S_B is not an unbiased estimate of Σ_B, and the sample within families covariance matrix S_W is not an unbiased estimate for Σ_W (Cf. Muthén, 1989). Thus, we cannot simply analyze S_B and S_W to find valid estimates of multilevel population models. But, as Muthén (1989) has shown, the sample *pooled within families* covariance matrix S_{PW} is an unbiased estimate of the population within groups covariance matrix Σ_W. As a result, we can estimate the population within group structure directly by constructing and testing a model for S_{PW}. Unfortunately, there is no simple estimator for the population between families covariance matrix Σ_B. Instead, the regular between families covariance matrix in the sample S_B is an estimator of the sum of two population matrices:

$$S_B = \Sigma_W + c\Sigma_B, \quad (2)$$

where c is a scaling factor based on the average family size.

EXPLORATORY ANALYSIS: A DIRECT SOLUTION

One solution to the problem that S_B estimates a combination of Σ_W and Σ_B is to estimate Σ_B by subtracting S_{PW} and S_B, as follows:

$$S^*_B = (S_B - S_{PW})/c = (\Sigma_W + c\Sigma_B - \Sigma_W)/c = \Sigma_B. \quad (3)$$

Thus, S^*_B is a direct estimate of Σ_B. This direct approach has two important drawbacks, which make it virtually impossible to use it in confirmative factor analysis models. The first drawback is that S^*_B is rather unstable. The second drawback is that S^*_B, which is obtained by simply subtracting two covariance matrices, is not necessarily a proper covariance matrix. If S^*_B is converted into a correlation matrix, this will often show in correlations exceeding 1.00 or impossible correlation patterns. However, if we are willing to simply ignore these problems, an exploratory analysis of S^*_B or the corresponding correlation matrix may still be useful for exploration and scale construction.

As an example, we take the shortened version of the Leuven Family Questionnaire (LFQ, cf. Jacobs & Schoorl, 1993). This questionnaire consists of 42 items that form two non-overlapping scales: '*tension*' and '*connectedness*'. Our data set contains 420 individuals in 189 families. In each family both parents and one child (average age 12;8) filled in the questionnaire. In some families there was only one parent and one child. The children were all in the first year of secondary school.

Assume that we want to analyze the factor structure of the LFQ at both the family (between families) and individual (within families) level, with an aim to improve the scales by removing items that do not perform well at one or more level.

An exploratory factor analysis of the raw scores would analyze a mixture of the family and the individual level. Instead, we calculate S_{PW}, S_B, and S^*_B. For the individual level, we

convert the pooled within families covariance matrix S_{PW} into the corresponding individual level correlation matrix R_{PW} and analyze this using ordinary component analysis. The results are in table 1 below.

Table 1. Varimax rotation within families components (individual level)

	tension	**connectedness**
V1	*.34*	-.13
V2	**-.34**	.17
V3	.06	**.44**
V6	-.12	**.31**
V10	*.32*	-.07
V12	-.08	**.34**
V13	*.44*	.00
V15	-.20	**.42**
V16	.21	*-.27*
V18	-.23	**.29**
V19	*.47*	-.14
V21	.02	**.46**
V22	.22	*-.28*
V23	**-.36**	.15
V25	*.56*	-.05
V27	-.26	.26
V28	*.41*	-.21
V33	-.03	**.24**
V34	*.39*	.20
V36	-.04	**.37**
V37	*.44*	-.38
V39	.10	**.59**
V41	-.09	**.29**
V42	.07	**.62**
V43	*.49*	-.20
V44	-.22	**.35**
V48	-.07	**.30**
V51	*.32*	-.24
V53	**-.32**	.19
V55	*.44*	-.33
V56	.01	**.22**
V57	-.20	**.46**
V60	*.49*	.18
V62	*.45*	-.03
V63	*.57*	.00
V64	*.46*	-.23
V65	*.63*	-.07
V66	*.39*	-.02
V67	*.46*	-.02
V68	*.59*	-.18
V69	.15	**-.39**
V73	.18	**-.32**

In Table 1 we have marked the items that belong to 'tension' by using italics, and items that belong to 'connectedness' with bold. Likewise, for these items we have used italics respectively bold typeface to mark the highest loadings. As is clear, most of the italics are in the first column, and most of the bolds in the second, which indicates that most of the items have their highest loading on the factor to which they belong.

At the family level, we convert the direct estimate of the family level covariances $\mathbf{S}^*_B$ into the corresponding correlation matrix $\mathbf{R}^*_B$ and again use ordinary component analysis to obtain an indication of the family level factor structure. However, we notice that the family level correlation matrix $\mathbf{R}^*_B$ is indeed not a proper correlation matrix, which implies that the corresponding covariance matrix $\mathbf{S}^*_B$ is not a proper covariance matrix either. Table 2 below shows part of the family level correlation matrix $\mathbf{R}^*_B$.

Table 2. Some entries in the family level correlation matrix

Var.	1	2	3	6	10	12	13	15	16
2	-.18								
3	-.52	.28							
6	-.71	.51	.44						
10	.50	-.19	-.72	-.80					
12	-.47	-.15	.18	.22	.02				
13	.26	-.33	-.63	-.88	.45	-.42			
15	-.37	.61	.91	.88	-.39	.46	-.69		
16	.57	-.15	-.55	-.18	.76	-.23	.71	-.56	
18	-1.39	1.05	1.41	.29	-1.25	.37	-1.09	.74	-1.73

There are 'smoothing' techniques to convert such matrices as in Table 1 into proper covariance or correlation matrices. Instead, we simply analyze the improper 'correlation matrix' $\mathbf{R}^*_B$ with component analysis.[1] The resulting solution is in Table 3 below. Note that, since the entries in the input matrix are not correlations, we cannot interpret the loadings in Table 3 as correlations either. Still, high values in Table 3 still indicate a relatively strong relationship, and we can interpret Table 3 analogous to an ordinary component analysis. Table 3 uses the same italic/bold notation to indicate the first component 'tension' and the second component 'connected.'

The pattern in Table 3 (family level) conforms reasonably to the theoretical structure, but it is somewhat less satisfactory as the pattern in Table 1 (individual level). If we compare Table 1 and Table 3, we observe that item 73 is problematic in both Table 1 (individual level) and Table 3 (family level) because it has a negative relationship with the component it is

[1]The advantage of component analysis over most factor analysis methods is that it is much more lenient as to the kind of matrix that is used. For the sake of consistency, we also used component analysis on the proper individual level correlation matrix $\mathbf{R}_{PW}$. A factor analysis on this matrix produces highly similar results.

intended to measure. Some items, such as items 2 and 23 do not perform well at either level. Other items, such as item 27, perform well at one level but not at another. If our goal is item analysis and scale construction, we could remove such items and try to replace them.

Table 3. Varimax rotation between families components (family level)

	tension	**connectedness**
V1	*.63*	-.31
V2	**-.26**	.06
V3	**-.60**	.59
V6	**.43**	.43
V10	*.73*	-.16
V12	-.26	**.43**
V13	*.71*	-.28
V15	**.60**	.44
V16	*.93*	-.14
V18	**-1.66**	.03
V19	*.89*	-.35
V21	-.34	**1.09**
V22	*.85*	-.57
V23	.01	.07
V25	*.91*	.06
V27	.27	**.73**
V28	.47	*-.52*
V33	.04	**.50**
V34	*.88*	.01
V36	.02	**2.51**
V37	*.79*	-.33
V39	.00	**.85**
V41	-.03	.03
V42	.22	**.90**
V43	*.87*	-.36
V44	-.49	**.57**
V48	-.38	**.73**
V51	*.50*	-.30
V53	-.15	**1.12**
V55	*.99*	.03
V56	-.58	**.60**
V57	.15	**.87**
V60	*.54*	-.19
V62	*.84*	-.33
V63	*.67*	-.23
V64	*.92*	-.15
V65	*.70*	.11
V66	*.85*	.49
V67	*.65*	.21
V68	*.91*	-.34
V69	.74	**-.85**
V73	.20	**-1.11**

As we noted before, the direct estimate of the between families covariance or correlation matrix is not a particularly good estimate. Its use in the previous example is justified because the stated goal of the analysis was to identify items that predominantly load on the intended scale, for the purpose of scale construction. If our goal is more theoretical, we prefer to use confirmative models on the covariance matrices at both levels.

As noted above, the pooled within families covariance matrix $\mathbf{S}_{PW}$ is an unbiased estimate of the population within families covariance matrix Σ_W, and we can estimate the population within group structure by constructing and testing a model for $\mathbf{S}_{PW}$. But, if we want to model the between families structure, we cannot simply construct and test a model for $\mathbf{S}_B$, because $\mathbf{S}_B$ estimates a combination of Σ_W and Σ_B. Instead, we have to specify for $\mathbf{S}_B$ two models: one for the within families structure and one for the between families structure.

Muthén (1989) proposed to use the multigroup option of conventional covariance structure software to analyze these models simultaneously. The procedure is that we specify two 'groups,' with covariance matrices $\mathbf{S}_{PW}$ and $\mathbf{S}_B$ (based on N-G and G degrees of freedom).

The model for Σ_W must be specified for both $\mathbf{S}_{PW}$ and $\mathbf{S}_B$, with equality restrictions between both 'groups' (i.e., the within and between covariance matrix) to guarantee that we are indeed estimating the same model in both covariance matrices, and the model for Σ_B is specified for $\mathbf{S}_B$, with the scaling factor c built into the model.[1] The procedure is described in nontechnical terms in Muthén (1994,) using Muthén's Liscomp program; McDonald (1994) describes essentially the same procedure in different terms using a specialized computer program. Hox (1994) describes the modeling procedure in detail, and explains how to implement the models in Lisrel (Jöreskog & Sörbom, 1989).

Assume that we want to use our example data to test a simple path model, that states that the mean education of the parents and the family position, parent versus child, have an effect on both 'tension' and 'connectedness.' The scale scores are obtained by summing the item scores that belong to a scale. Family position is a dummy variable scored 0 for parents and 1 for children. It is an individual level variable. If we have families of widely different sizes, we may expect some family variation for this variable as well. Since in our example data almost all families consist of two parents and one child, we may expect that in our case there will be almost no family level variation for this variable. The mean education of the parents is a family level variable; by definition all members of a specific family will have assigned to them an identical value for this variable. Thus, for this variable we have by definition no within family variation. Variables that have no variance at one of the two levels are treated as variables with systematically missing values; in structural modeling this is a well-established procedure (cf. Jöreskog & Sörbom, 1989). As a result, these variables are only modeled on that level where they actually exist.

To compute the various covariance matrices we employ the program SPLIT2 (Hox, 1995). This program reads raw data, with family variables attached to the individual members, and computes the matrices $\mathbf{S}_{PW}$, $\mathbf{S}_B$, and $\mathbf{S}^*_B$, the appropriate degrees of freedom for the within and between group level, and the scaling constant c. Exhibit 1 below shows (part of) the output of the program for our example data.

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[1]The model is only strictly valid in the *balanced* case, where all families have the same size. In the unbalanced case, we use an average group size (Muthén, 1989), and proceed as if the family sizes were equal. This *pseudo-balanced* solution is generally quite accurate (Muthén, 1990, 1994; McDonald, 1994; Hox, 1993).

Exhibit 1. Sample output of SPLIT2.

Variables are: *position, tension, connectedness, education.*

number of groups:	189	number of cases:	420
df within:	231	df between:	189

between model scaling constant and its square root: 13.06 3.61

Pooled Within Groups Correlations and Standard Deviations

	position	tension	connectedness	education
tension	.37			
connectedness	-.19	.13		
education	.00	.00	.00	
standard deviations	.59	10.80	6.25	1.00

Scaled Between Groups Correlations and Standard Deviations

	position	tension	connectedness	education
tension	.08			
connectedness	-.06	.20		
education	-.04	-.05	-.02	
standard deviations	.28	17.36	7.81	2.13

Rough Estimate of Between Groups Correlations and Standard Deviations

	position	tension	connectedness	education
tension	.00			
connectedness	.00	.28		
education	.00	-.06	-.04	
standard deviations	1.00	3.76	1.30	0.59

Estimates of Intraclass correlations for all Variables

	position	tension	connectedness	education
estimated intraclass corr.	-.06	.11	.04	1.00

The intraclass correlation in the last line of Exhibit 1. is an estimate of the proportion of family level variance. The intraclass correlation of the family variable 'education' is 1.00, which indicates that all of the variation of this variable is on the family level. The intraclass correlation of the dummy variable 'position' is negative, which indicates that the variation is less than we would actually expect on the basis of sampling variation. The reason is obviously the fact that we have chosen to interview only one child per household, which makes this variable almost a constant at the family level (the existing variation stems from the fact that in a few cases only one parent was available to be interviewed). Both cases are handled in the same way; the variable receives a value of one for the standard deviation and for the

diagonal of the correlation matrix, and a zero everywhere else. In our structural model, we must take appropriate measures to insure that this variable is omitted from the analysis.On the individual level, we have only one explanatory variable: 'position'. This translates into an extremely simple path model. Figure 1 below shows this model, with estimates obtained by analyzing S_{PW} only:

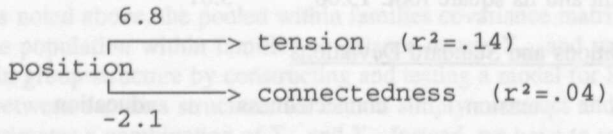

Figure 1. Example path model on individual level.

This model is a simple regression model with two dependent variables. Since it is a saturated model, the number of degrees of freedom is zero, and it cannot be tested. The regression coefficients tell us that children experience more tension and less connectedness than their parents, but the amount of variance that is explained is low. If we specify this model as a multigroup analysis for both S_{PW} and S_B, requiring that all corresponding parameter estimates must be equal for both the within and the between model, we obtain similar path estimates. This time we have six degrees of freedom to test the model, and the chi-square is 170.

Since the within families part of the model is saturated, *all* this lack of fit must derive from the omission of a between families model for S_B. The simplest between families model provides for family level variances, but no covariances. It amounts to the hypothesis that we have family level variance (corresponding to the positive intraclass correlations in Exhibit 1) but no significant covariance structure. The corresponding structural model has three degrees of freedom, and a chi-square of 19 (p=.00). Apparently, there is some covariance structure at the family level. This turns out to be a very simple model, with a single covariance between 'tension' and 'connectedness.' This model has one degree of freedom and a chi-square of 3.9 (p=.05). We could have reached the same conclusion by inspecting the rough estimate of the between groups correlations in Exhibit 1 and noting that there is only one meaningful correlation, which is between 'tension' and 'connectedness.' Families that experience more connectedness tend to experience less tension.

DISCUSSION

The analyses presented above are intended as examples, and we refrain from an extended substantive interpretation. Both examples highlight the methodological problems associated with a specific type of application. The first example is a scale construction problem. Typically, in such applications we have a large number of items, and only a few scales. Even in single level applications confirmative factor analysis is usually not the preferred method, because it will almost always reject the model without giving much information on how to improve the instrument. Instead, exploratory factor analysis or cluster analysis are routinely used. These methods can be used on the within families correlations, and also on the rough estimate of the between families correlations. In our example, we use component analysis

because this is has fewer assumptions than factor analysis, while still allowing us to easily compare the components at both levels (comparing two cluster solutions is more difficult). We should be aware that for the family level we are probably analyzing an improper matrix (even if this is not obvious from the values themselves,) but in scale construction we do not need statistically sanctioned ironclad proofs as much as sensible indications on how to proceed in our instrumental construction. If we need statistically correct verification of our results, we must use confirmatory analysis procedures, as in our second example.

Our second example is an extremely simple path model. Even so, it illustrates both the basic procedure and a typical methodological problem. The basic procedure is to establish a satisfactory model for the within groups (individual) part of the model. The reason is that we obtain our estimates for the between groups (co)variances after taking account of the within groups part of the model. If the within groups model is deficient, the between groups model will also be flawed. By using for the individual level not the complete pooled within groups covariance matrix, as in the direct rough estimate, but a parsimonious model for that matrix, we obtain more stable estimates for the family level of our model. After finding a model for the individual level, we specify models for the family level. In both specification searches, we may use the chi-square test and modification indices to suggest alterations of our models.

The path model also illustrates the problem of having variables that have no or almost no variance at one of the levels. This may be a variable that is defined at one level only, such as the family level variable 'mean parent education.' It may also be an empirical result, as with our variable 'position'. In both cases this variable receives a special treatment in the model. It is treated as a variable with values that are systematically missing in one of the groups, for which standard procedures exist in structural modeling.

We note that family position explains some variance in tension, but very little variance in connectedness. There are no correlated error terms, meaning that the covariance between tension and connectedness in Exhibit 1 is completely explained by position. On the family level this variable has no variance, and we have a simpler model that just specifies a covariance between tension and connectedness. Although the model is extremely simple, the example shows how the procedure works, and that it may lead to different models for within and between family processes.

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AN EXPERT MODEL FOR DIAGNOSING EMOTIONAL AND SOCIAL PROBLEM BEHAVIOR AND AN ATTEMPT OF MEASURING EFFECTS OF PROBLEMATIC EDUCATIONAL STYLES WITH CHILDREN

Rimmert van der Kooij

Emotional and social problem behaviors of children and adolescents are in the daily life of educators, professionals as well as parents, often a reason to ask for assistance in child guidance clinics and other non-residential settings. In the daily clinical situation diagnosticians are faced with complex behavior patterns with a large diversity of causes. Especially for starting diagnosticians it is often very difficult to organize adequately the most overwhelming amount of information that is available. Experienced diagnosticians have rather often developed solution strategies, which result from a kind of synthesis of clinical experience and scientific knwoledge. In other disciplines, like pharmacy (Been, Beetsma & Van den Berg, 1984) expert models were developed in order to teach students how to solve practical pharmacological problems. The experience taught that problem solving strategies for the different disciplines showed more or less common features. Therefore, we (Van der Kooij, Been, Noordman & Van der Sluis, 1990) decided to design a diagnostic expert model for emotional and social problem behavior of children and adolescents. Before we present the model in this contribution we shortly discuss the postulates which we used for the developemnt of this model. Further, an attempt is made to operationalize the expert model by means of a questionnaire, which was applied on a group of elementary school children. Also we will present the first research data of this explorative study.

THEORETICAL BACKGROUNDS

In the practical, diagnostic situation in which emotional and social behavior of children and adolescents is subject to complaints of educators, one often registers two different types of complaints: (1) feelings of insecurity, and (2) feelings of inability. These two types of complaints were the starting point for the development of a diagnostic expert model. The first question that had to be answered was: which *constant* factors in a dyadic relation (parent-child) may have played an important role in the origin of the two types of complaints. It is inevitable to formulate a number of postulates for the construction of the expert model. When one does not share the content of the postulates, the use of the model should be avoided as well as scientific research in which the theoretical framework of the model will be tested.

The first postulate is that in dyadic educational relations feelings of insecurity are developed, when educators do not receive any or very little feedback from children and adolescents to their own child rearing initiatives. Feelings of inability develop when educators have the feeling that they do not have the educational situation under control; when parents do not know how to direct and guide the activities, expressions and utterances of their children.

The second postulate concerns the fundamental view upon the origin of behavior of children in general. In this sense, we chose the convergence theory of Stern (1918, 1923), in which actual behavior is considered as the final result of the combination of disposition and

environment. That means of constant endogeneous and constant exogeneous factors. We reject the basic assumption of Behaviorism in which behavior is only considered a product of a learning process. From our point of view we should look for constant endogeneous and constant exogeneous factors that could explain the two types of educational complaints.

Endogeneous factors

At first we explored the possibilities of endogeneous factors which contribute to the origin of feelings of insecurity. We started considering the psycho-analytic concepts of id, ego and superego. A weak id, which means little energy, could evoke only few behavior initiatives. Few initiatives in dyadic relations could easily evoke feelings of insecurity. However, we quit this exploration, because the way the psychological equilibrium is maintained seems to determine the final behavior patterns shown. Because in the first place we looked into the direction of energetic influences upon the overt behavior, an exploration was made of the influence of temperament (Thomas & Chess, 1977; Kohnstamm 1988, 1989). Temperament is often linked in daily life with the apsect of energy. Also the literature about temperament did not offer an adequate contribution to the solution of our problem, because temperament is denied as being constant during the individual development.

On the base of a number of clinical observations of problematic educational situations we discovered that introversion of children and adolescents evokes feelings of insecurity in the educator-child relation. The question now to be answered was: Is introversion an endogeneous constant quality? Eysenck (1975 and 1982) considers introversion as an inborn attribute. He states that the differences between intro- and extroversion are the consequence of different neurological processes. This would be a guarantee for constancy of this human characteristic during the whole life. Our own observations of babies are in accordance with this statement: already at a very early age one can observe the difference between those which are looking for eye contact and the babies which look being retired into themselves.

The argument of constancy of the attributes of intro- and extroversion seems to be confirmed by the experiences of Riesmann (1953). "Inner directed" (comparable with introversion) American children should be educated in such a way that they became "other directed" (extrovert). The educational enterprise failed, because those fundamental characteristics appeared not to be changeable.

When the attribute of introversion results in complaints of insecurity during dyadic relations, the question is whether feelings of inability are often noticed in the dyadic relation with extroverted children. From our own clinical experience we can confirm this statement. Recently, we also found support for this opinion. In the scoring of the Child Behavior Check List (Verhulst, Koot, Akkerhuis & Veerman (1990) distinguish between internalizing and externalizing problem behavior of children and adolescents.

Therefore, our third postulate is that the two types of educational complaints (insecurity and inability) become manifest in relations with intro- and extroverted children.

Exogeneous factors

As not every introverted or extroverted child or adolescent evokes educational problems, we looked for constant exogeneous factors in accordance with our second postulate (convergency theory). About the origin of emotional and social complaints a great number of different opinions exist. Often the family system is considered to be a constant exogeneous main cause (e.g. circumplex model of Olson, Sprenkle & Russell, 1979) of behavior problems. In our opinion the personal interaction between parent and child is already at a very early age the

most determining factor. The question arises, if one can discover a concept that reflects an aspect of constancy in approach of children during educational dyadic relations.

In the literature no uniformity in the labeling of individually educational approaches exists. In the American literature one often finds the term "child rearing pattern" (survey article of Maccoby & Martin, 1983; Holden & Edwards, 1989). In the European literature the terminology of "educational style" is often mentioned (Herrmann, 1974; Lukesch, 1975 and Krohne, 1988). Child rearing pattern refers mainly to the overt parental behavior, whereas educational style seems to include the educational *attitude* as well as the parental *behavior*. Krohne (1988, p.158) defines parental style as "a class of theoretical constructs with which inter-individual different, but intra-individual relatively stabile *tendencies* of parents are described in order to react in pedagogical-thematic situations with child specific *behavior patterns*." Also Ten Haaf (1993, p.1) defines parental educational behavior with "behavior intentions as well as overt behavior."

The term of pattern and style have the aspect of constancy in common. We prefer the European tradition and to choose the concept of educational style, because both the two aspects of attitude and intention as well as educational behavior seem to be of importance in a constant way of functioning.

In the history of analysis of educational behavior, since Schaefer (1959) there has been an intensive discussion about basic educational dimensions. Two dimensions are often distinguished: emotional warmth (Tausch & Tausch, 1971) or love (Schaefer, 1959) or support (Ten Haaf, 1993) versus control (Schaefer, 1959; Ten Haaf & Janssens, 1994). Krohne (1988) clearly speaks of "the two component model". Ten Haaf (1993) and Ten Haaf & Janssens (1994) plead for three dimensions: support, restrictive and authoritative control.

Also in the recent discussion topics are, whether a linear or a curvilinear relation exists between educational approach and effects upon children. Besides, it is in reconsideration if the effects of the approach is situation-specific.

In our search for constant exogeneous factors, which contribute to the development of problematic emotional and social behavior among children, we came to the conclusion that two of the three general distinguished educational dimensions in *combination* with each other may evoke problematic behavior patterns in children and adolescents. In his model Schaefer (1959) demonstrates a number of problems evoking educational approaches as neglect and overprotection. They consist of a combination of the two main factors: control and love. Therefore, we decided that especially in the field of *special* education it does not seem useful to operationalize the educational dimensions as is the tradition in the field of *general* education. However, the concept of educational style on its own is not sufficient for the explanation of the evoking of problematic emotional and social behavior with children. In our opinion, problems are evoked by a constant *wrong* approach of educators. That is the reason we prefer to speak of *problematic* educational styles.

Problematic educational styles

After the choice for the concept of problematic educational style as most important exogeneous influencing factor in the development of emotional and social problem behavior, the question arises "how many problematic styles should be distinguished?" The number of styles ought to be limited, because in the clinical situation they should belong to the permanent ready and available knowledge of the diagnostician. An important criterium for the selection of problematic educational styles is that the most relevant ones should be distinguished. From interviews with diagnostical experts we derived five problematic

educational styles: (1) affective neglect, (2) overprotection, (3 a too authoritative, too directive approach, (4) an inconsistent, inconsequent approach, and (5) a too heavy appeals to norms and values. Below we offer an overview of the main characteristics of the styles.

Affective neglect:	Inconsistent, inconsequent approach:	Overprotection:
- attention	- consistency	- rules
- stimulation	- creating confusion	- distance
- psychologial care	- being unpredictable	- delegation educ. tasks
- protection	- tendency to double signals	- take possession of
- emotional warmth	- lack of consequence	- satisfact. own needs

Too heavy appeal to norms and values:	Too authorative, too directive:
- communicating through conscience	- demanding
- appeal to level of ambition	- force
- acting out not allowed	- control and restriction
- appeal to loyality	- punishment, threat
- evoking feelings of guilt	- inequality

Figure 1 Chacacteristics of the five problematic educational styles

THE EXPERT MODEL FOR EMOTIONAL AND SOCIAL PROBLEM BEHAVIOR

As we said before, the construction of the expert model is based upon the application of the convergence theory: emotional and social problem behavior is considered to be the consequence of the mutual influence of constant endogeneous and constant exogeneous factors. That means that emotional and social problem behavior is considered as the result of the use of problematic educational styles and the child characteristics of intro- and extroversion.

The fourth postulate is that the same problematic educational style may have a different influence upon introverted and extroverted children and adolescents. The fundamental thought behind this postulate is that introverted children often do not take initiatives in social relations, they tend to wait upon what will happen with them.

The combination of the two endogeneous factors of intro- and extroversion with the exogeneous factor of the five problematic educational styles leads to the expert model as presented in figure 2.

We went through the "clinical" literature of developmental psychology and child psychiatry and the ten behavior types can often be recognized in descriptions of children and youth with behavior problems (see also figure 2.3. in Van der Kooij et al., 1990; p. 67). The model should be used in the orientating phase during the diagnostical reasoning proces (Van der Kooij, Raijmakers, Baartman, Carlier, Franken, Hamers & in 't Veld-Koelman, 1994).

In this phase the diagnostician is supposed to have already the necessary information to judge if a problematic educational style *can* be the cause of the emotional and social problems. The orientating phase should be followed by a phase in which hypotheses about the causes of the problem behavior are formulated. The model offers the diagnostician the possibility to apply different theories about the causes of problem behavior. The expert model does not contain directions for the use of fixed theories, as psycho-analysis or non-directive approaches. The model can only be used when: (1) one of the five problematic educational

styles seems to be applied by the educators, (2) no overruling endogeneous factors are assumed, e.g. mentally handicaps, (3) no extremely dominant exogeneous influences are likely, e.g. sexual abuse.

EXOGENEOUS FACTORS	ENDOGENEOUS FACTORS: extrovert	ENDOGENEOUS FACTORS: introvert
AFFECTIVE NEGLECTING	BAD CONTROL OF IMPULSES instinctive functioning trespassing rules no resistance to temptations many oral needs bad selfcontrol taking things away/steal	RETARDED DEVELOPMENT emotional and cognitive retardation environment needed as source for stimulation dependency apparent seeming adaptations little self-esteem
OVERPROTECTION	NO SELF-CONFIDENCE low frustration tolerance wanting to have one's one way clear showing of feeling that someone is wronged socially aggressive jalous/envious feeling of being neglected	NO OWN INITIATIVE social withdrawal no ability to be on one's own few friends silent, sulking behaviour unjustified appeal to sentiments being insistent passive protest
TOO AUTHORITATIVE CHILD REARING STYLE	AUTHORITY CONFLICTS open clear protest wilfull, wrong-headed insurgent/rebel looking for conflicts cheeky, noisy behaviour always wanting to be right fight for own autonomy agitating	WITHDRAWN BEHAVIOUR dependent on authority passive resistance shy making a subdued impression enuresis nocturnal/ diurna encopresis constipation submissive
INCONSISTENT APPROACH	ACTING OUT OF AGGRESSION ALTERNATEVILY SWEET/NAUGHTY very various behaviour, changing quickly expression of being confused testing limits ambivalent acting explosive expression aggression behaviour difficult to predict	NEUROTIC SYMPTOMS no expression of stress psychosomatic complaints vague anxieties (Signalangst) feeling insecure no adequate adaptation to environment defense mechanisms
TOO HEAVY APPEALS TO NORMS AND VALUES	ESCAPING BEHAVIOUR avoiding to bear responsibility run away denial of trespassing rules pretence of feeling guilty, but not behaving accordingly showing of loyalty conflicts	NOT SHOWING OWN IDENTITY MAKING DEPRESSIVE IMPRESSION identification with aggressor heavy feeling of guilt selfdenial masochistic traits suffer - without being aware of that very onubtrusive behaviour

Fig. 1. Expert model for emotional and social problem behavior.

During five years the expert model was applied in the post graduate education of diagnosticians in the Department for Special Education of our university. Also the reactions upon the book "Diagnostische Expertmodellen" (Van der Kooij et al., 1990), in which the model is presented were stimulating for further research.

No questionnaires or test were available in which the five problematic educational styles were operationalized. Therefore, we (Van der Kooij & Neukäter, 1993) designed a "Questionnaire Educational Styles" for children between 8 and 12 years.

QUESTIONNAIRE EDUCATIONAL STYLES

In the "Questionnaire Educational Styles" an attempt is made to explore, if children are able to distinguish between different "perceived educational styles" as Lukesch (1975) formulated. We designed a questionnaire in which 21 situations (the first is meant as introduction) which are often causing trouble, are described. Besides a cartoonist drew the plot of the situation.

In accordance with the theoretical frame work of the expert model five possible reactions by mothers upon the described and illustrated situation are offered. The five described reaction possibilities are intended as operationalizations of the five problematic educational styles. The children receive the instruction to indicate on a four point scale "how they think *their mother* would react upon the designed situation".

GOALS OF OUR STUDY AND SAMPLE

Goals of our study

Before formulating expectations about the content of the results, we must explore if the children which filled out the questionnaire are able to discrminate between the five operationalizations of the problematic educational styles (affective neglect, overprotection, etc). We consider the five scales as linear and *not* curvilinear. In our opinion optimal affective neglect or optimal overprotection does not exist.

In the first place there must be explored if the reactions on the five scales show sufficient consistency. A minimal Cronbach's alpha per scale of .70 seems desirable. In the second place it must be checked if the answers on the five scales show a sufficient distribution. The minimum possible score per scale = 21, the maximum possible score = 84. The standard deviation should be > 6.0. Also a multiple group analysis should be applied in order to prove, if the given answers indeed correlate the highest with the intended scale.

Because the expert model has its origin in interviews with a number of diagnostic experts and as only *afterwards* an exploration of the relevant literature about the presented typology took place, it is difficult to formulate theoretically based expectations about the *content* of the results. No comparable research took place. Therefore, we again asked a number of experts about their expectations, based upon their own clinical experiences. Most of the interviewed experts were staff members of a child guidance clinic. The following results were expected: (1) in a sample of pupils of the normal elementary school the average score on the scale for affective neglect is significantly lower than the scores upon the othe four scales; (2) there is no difference in reactions to the five scales between boys and girls; (3) due to the influence of common traits of the five scales (degree of control) a significant correlation is expected between the scores on the scales; "too authoritative" and "too heavy heavy appeal to norms and values" and between "overprotection" and "too heavy appeal to norms and value".

Sample

The questionnaire was applied to 289 pupils of the three highest classes of six different elementary schools (two public schools, one Roman Catholic school and two Reformed

schools). The different types of schools were chosen in order to avoid the possible influence of weltanschauung upon the educational approach of children. The schools were located in the North and the Middle of our country.

The sample consisted of 149 boys and 140 girls. Age range was from 8 through 13 years. More than 65 % of the participating children was 10 and 11 years old. The selection of these age groups was made in order to avoid the possible influence of puberty, an easily provoking endogeneous influencing component. Younger children are not able to read the questionnaire easily, due to their lack of control of the reading process.

The questionnaires were filled out by the children in classical sessions during school time. The standard instruction was given to the whole group, consultation with other children was excluded. The average time needed for the completion of the questionnaire was 45 minutes.

RESULTS

The internal consistency (Cronbach's alpha) for the five scales of affective neglect, overprotection, a too authoritative approach, an inconsistent approach and too heavy appeal to norms and values are presented in table 1.

Table 1: Consistency coefficients (Cronbach's alpha) per problematic educational style

Scale	N	# items	Alpha
Affective neglect	264	21	.81
Overprotection	273	21	.84
Too authoritative approach	273	21	.84
Inconsistent approach	266	21	.75
Too heavy appeals to norms and values	274	21	.88

The number of frequencies varies, because some of the children omitted an item or gave a double answer. One can conclude that the five values of alpha are sufficient and far above the value of .70. The lowest value on the scale for inconsistent approach can be the consequence of ambivalence, which is also characteristic for the operationalizations. We conclude, based upon these results, that children can very well discriminate between the different experienced educational styles.

Table 2: Averages, standard deviations, range (minimum and maximum scores) and frequency

Scale	Average	St.Dev.	Min.	Max.	N
Affective neglect	30.45	7.53	21.00	71.00	264
Overprotection	39.15	8.96	23.00	70.00	273
Too authoritative approach	41.14	9.01	23.00	74.00	273
Inconsistent approach	37.44	7.01	21.00	59.00	266
Too heavy appeals to norms and values	44.00	10.90	23.00	79.00	274

The averages and standard deviations of the five scales are presented in table 2. Taken into consideration that the scores upon the scales can vary between 21 and 84, we consider the

variance in reactions of the children as sufficient. The standard deviations on the five scales are each much higher than the formulated value of 6,0. Relatively low seems the obtained maximum score on the scale for inconsistent approach (= 59.0). In the expert model this problematic style pretends to evoke neurotic behavior patterns with introverted children. A cautious conclusion could be that this style fortunately does not seem to be applied much.

The results of the multiple group analysis in Table 3 clearly show that the main part of the items seems to be formulated in a correct way. In fact there is only a limited number which do not load with the highest value upon the intended scale. Some items of the scale for inconsistent behavior should in case of revision be ameliorated.

Of course some indications exist for slight changes of the Questionnaire Educational Styles. However, considering the results in relation to the criteria we formulated in advance, one can conclude that the questionnaire in the present form can meet the usual psychometric criteria.

In advance, a relatively low score on the scale "affective neglect" was expected, compared with the scores on the other four scales. The results in table 2 clearly show, that indeed the average score on this scale is significantly lower compared to the other ones. In a sample of normal children, like we drew, it seems clear that affective neglect belongs to the problematic styles which are less perceived. This result seems to support the "clinical" opinion that affective neglect is rare and also little experienced among children of normal schools.

From table 4 below it becomes clear that a significant difference in reactions between boys and girls does not exist, though a tendency towards significance was registered on the scale of affective neglect. This lack of significance implifies future research intentions and means that sexe differences need not to be taken into account. From the point of view of emancipation these results seem to confirm that equality in educational approach to boys and girls took place. Ar least no difference in the perception of the children existed.

Table 5 shows the correlations between the scores on the five problematic educational scales. Indeed the results show relatively high correlations between "too authoritative approach" and "too heavy appeals to norms and values" as wel as between "overprotection" and "too heavy appeal to norms and values". We explain this phenomenon as the effect of common characteristics of the general educational dimension of control. One can not deny that parents who are too authoritative and appealing too much to norms and values tend to a degree of control in educational situations, which is too high.

The factor analysis of the data did not give any support for the presence of the general educational dimensions of support and control, which are often distinguished.

We found no differences between the pupils of the different types of schools, nor did we discover a difference between the younger and older children in the sample.

Table 3: Multiple group analysis on the 105 items of the Questionnaire Educational Styles.

Style	Item	Style					item-total correlation
		AFF	PRO	AUT	INC	APP	
AFF	01	09	20	03	21	09	20
	14	26	10	-09	10	02	27
	25	39	08	-14	13	-04	47
	31	33	10	-00	18	10	43
	42	25	-06	-06	00	-04	37
	53	22	10	26	28	28	31
	65	34	06	06	07	03	45
	74	42	02	-05	17	-09	53
	81	34	26	05	34	10	44
	93	50	07	-03	22	-06	61
	102	45	04	-07	12	03	53
	111	61	07	05	13	04	68
	124	48	00	-12	08	-08	56
	133	43	-05	02	13	04	50
	142	54	06	01	24	-00	62
	155	37	18	-11	21	04	43
	164	35	-09	03	13	-05	43
	175	43	-04	-03	08	-04	54
	181	37	01	04	13	02	48
	192	44	10	-09	18	-04	53
	203	23	17	-00	16	03	32
PRO	02	02	40	04	18	28	43
	11	21	24	-12	21	11	33
	24	15	50	03	27	22	53
	32	-05	24	16	01	23	29
	43	-06	37	18	22	32	45
	55	-05	29	-09	14	04	39
	62	17	38	-09	22	08	45
	73	03	41	-10	33	11	49
	85	07	28	03	18	15	34
	91	-10	31	25	19	34	43
	104	02	47	09	28	35	56
	115	10	53	-21	22	04	61
	121	14	43	-13	20	07	47
	132	06	53	01	19	30	60
	144	12	38	13	21	30	48
	153	20	37	-01	20	21	51
	163	03	43	06	16	32	53
	172	10	37	13	31	31	48
	185	10	55	08	31	34	64
	194	09	55	03	25	31	63
	201	16	48	01	21	25	57
AUT	03	02	-08	35	16	24	48
	13	-05	-05	40	07	24	51
	21	-11	05	41	03	31	48
	34	02	09	36	14	24	40
	45	08	07	33	20	26	41
	52	05	-05	49	18	36	58
	63	-10	02	42	-00	30	52
	71	-07	02	45	09	30	52
	82	01	-12	37	-00	20	43
	94	03	21	37	19	43	46
	105	04	-02	35	19	24	41
	113	01	14	45	08	44	53

Table 3: Multiple group analysis on the 105 items of the Questionnaire Educational Styles (continuation).

Style	Item	Style					item-total correlation
AUT	122	-09	-04	56	07	45	67
	135	05	-01	41	11	30	47
	141	-14	15	26	-03	30	35
	154	06	-13	51	13	28	60
	162	09	05	47	16	49	53
	171	09	14	31	19	33	37
	183	-16	24	36	09	41	48
	195	-03	-04	51	11	36	55
	204	-01	-03	40	13	34	46
INC	04	10	01	05	27	-02	39
	15	13	21	-07	29	08	41
	22	04	16	-00	15	08	30
	33	04	09	27	35	17	45
	44	17	22	18	45	27	56
	51	16	32	15	19	27	27
	64	19	14	-05	39	01	49
	75	-01	06	26	13	23	27
	83	04	12	04	40	11	49
	92	14	20	21	26	22	39
	101	03	19	19	32	21	44
	114	-05	12	20	38	22	45
	125	07	14	-00	38	14	50
	131	06	38	30	24	39	33
	143	29	14	07	20	11	32
	152	38	19	-02	41	07	51
	165	19	28	05	48	20	55
	173	24	18	09	25	18	35
	184	24	40	-09	13	17	21
	191	33	20	05	33	09	45
	202	15	15	-09	35	07	46
APP	05	06	14	33	34	29	35
	12	05	21	20	13	35	43
	23	16	24	30	21	39	45
	35	-07	29	29	19	45	51
	41	08	38	37	25	52	57
	54	-15	14	45	16	49	56
	61	05	42	32	28	51	58
	72	-06	18	36	16	48	55
	84	08	30	25	18	45	52
	95	06	29	35	19	47	55
	103	-14	20	32	17	46	51
	112	11	19	47	26	48	54
	123	08	17	19	22	29	38
	134	04	22	42	29	55	59
	145	-01	24	46	22	59	66
	151	09	34	34	20	53	60
	161	02	39	43	21	54	61
	174	16	16	42	23	43	56
	182	-04	41	38	18	56	59
	193	-04	23	48	20	59	66
	205	-11	10	39	05	43	51

AFF=Affective neglect, PRO=Overprotection, AUT=Too authoritative approach, INC= Inconsistent approach, APP=Too heavy appeals to norms and values.

Table 4: Averages, standard deviations and frequencies per problematic educational style and per sexe

	Average				Standarddeviation				N			
	AFF	PRO	AUT	INC APP	AFF	PRO	AUT	INC APP	AFF	PRO	AUT	INC APP
1 Boys	31.3	39.6	41.4	38.1	8.4	9.2	8.6	7.5	134	141	140	136
2 Girls	44.8				11.1				142			
	29.6	38.7	40.9	36.8	6.5	8.7	9.5	6.4	130	132	133	130
	43.1				10.7				132			
F	3.26	.65	.23	2.36								
Significan-	1.73											
ce	.07	.42	.63	.13								
	.19											

AFF= Affective neglect, PRO= Overprotection, AUT= Too authoritative approach, INC= Inconsistent approach, APP= Too heavy appeals to norms and values (Significance < .05).

Table 5: Correlation coefficients between the 5 problematic educational styles

	AFF	PRO	AUT	INC APP
AFF	1.00			
PRO	.17	1.00		
	-.04	.05	1.00	
AUT	.33	.40	.23	1.00
	.05	.45	.64	.40
INC APP	1.00			

AFF=Affective neglect, PRO=Overprotection, AUT=Too authoritative approach, INC=Inconsistent approach, APP=Too heavy appeals to norms and values.

DISCUSSION

Though perceptions of emotional experiences and of social communication are often considered as "weak" data, we can conclude that the results of the explorative study seem to be unexpected clear and homogeneous. Ar least it has become evident that normal children are able to make a clear difference between educational approaches.

We are conscious of the necessity that the developed expert model should be validated in a larger experimental investigation. The first experimental results encourage further research initiatives. The continuing discussion in the field of general education about dimensions of control and support does not seem relevant for children and youth who need special educational help for the solution of their emotional and social problems. In the operationalized

problematic educational styles they seem to be mixed in such a way, that one can not recognize the infuence of each dimension.

Further one should bear in mind that the expert model is only useful in a limited percentage of cases. Our own estimation is that in about 70% of all the non-residential cases in which emotional and social behavior problems are the main complaints, the expert model can be applied. Every model shows the temptation of a kind of blind and automatic application. For this tendency we would like to warn explicitly.

Finally, we want to emphasize that the development of an expert model does not necessarily end in the development of (computerized) expert systems. We disagree with the application of expert systems in the field of diagnostics of emotional and social problem behavior. In the first place the relations between different behavior forms often are the results of interpretations in which qualities as well quantities play an important role. The construction of the expert model belongs in our opinion to the hermeneutic scientific approach, in which hard facts often fail. Therefore, the use of an expert system in this field would hide the necessary aspect of "interpretation" of data. In the second place we disagree with the application of expert systems, because the programmed causal relations are hardly known by the user. Dependence on automatized processes during diagnostic reasoning processes should be avoided. Those are the reasons for saying "yes" to expert *models* and "no" to ert *systems*.

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THE RELIABILITY OF CHILDREN'S RESPONSES TO QUESTIONNAIRE ITEMS; QUESTION EFFECTS IN CHILDREN'S QUESTIONNAIRE DATA

Edith D. de Leeuw and Martha E. Otter[1]

The study of measurement error has a long tradition in survey research (cf. Deming, 1944). Although respondents have been identified as a serious source of error (for a review see Groves, 1989, chap. 9), these respondents are as a rule all adults (cf. Qvortrup, 1990). In surveys of the general population and official statistical census research respondents are over 16 years of age. Data about younger respondents are either gathered by proxy (e.g., a parent answers the relevant questions) or come from administrative sources (e.g., birth records). For an exception see Scott, Brynin, & Smith (this volume).

In educational research on the other hand, questionnaires are often used to gather data about attributes of children. For instance, about their school performances, their home characteristics, their behavior, and their attitudes. However, in educational research little research has been reported about the quality of questions and measurement error when researching children in general (c.f. Elly, 1994). For an exception see the work done by Otter, Mellenbergh, & De Glopper (in press).

In this contribution we try to integrate knowledge of survey research and educational research. First, we discuss the model of the question-answer process derived from survey research. After that we describe the general background of our study in which we investigate whether question characteristics influence the quality of responses in two age groups, namely 9- and 14-years-olds. After discussing the results, we conclude with some general recommendations for questionnaire research with children as respondents.

THEORETICAL BACKGROUND

The Question-Answer Process

In general questionnaire research much attention has been paid to the influence of potential distortions in the question-answer process on the final response and on the quality of the resulting data. Important steps in the question-answer-process are 1) *understanding* the question; the respondent has to interpret what is being asked, 2) *retrieving relevant information* from memory, 3) *evaluation* of the answer; the respondent may wish to edit the answer due to social desirability or situational adequacy, 4) *communication* of the final answer (Tourangeau & Rasinski, 1988; Schwarz & Strack, 1991). This complex process has been mainly studied with adult respondents, and one may wonder whether children can adequately perform these difficult tasks. In this study we will concentrate on the first two steps in the Q-A process: *understanding* the questions and *retrieving* relevant information from memory.

In understanding a question, the localization of the concept or content of the question in the respondents memory is of crucial importance. When a concept is obviously manifest

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(respondents 'know' the concept), activating the knowledge in memory occurs almost automatically (Tourangeau & Rasinski, 1988; Fazio et al., 1986; Fazio & Williams, 1986). On the other hand, to localize a concept in memory can be a very difficult process when the respondent is less acquainted with it.

Questions whose meaning is difficult to localize in the memory refer to ambiguous, infrequently and/or not-recently-used concepts which do not relate to other concepts. An example of such a question is: "What do your parents do when you speak at home ... ?". This question is multidimensional. It may concern both pronunciation or the content of what is being said by the child.

Not only the understanding of the wording is essential in answering questions, but also the search for information in long-term memory has to be as uncomplicated as possible. Cannell, Miller & Oksenberg (1981) have discerned three cognitive activities undertaken by respondents when searching for information in long-term memory: deciding which information must be looked for, actually searching for this information, and then organizing the information that is retrieved. The accuracy of the outcome of these cognitive activities (the response) depends on the interval between storing and recalling the required information (Cash & Moss, 1972; Duncan & Hill, 1985) *and* on the complexity of the task.

Task difficulty or complexity increases when the required information cannot be directly extracted from memory (Groves, 1989) because, for instance, it refers to too many information units stored in the memory. These units have to be searched for one by one, compared and then evaluated. The final result of this complex process is the actual answer to the question (Groves, 1989). Some examples of complex questions are: "On a school day, about how many hours do you usually watch TV or video outside school?", " How often do you read books for fun?" or "How often do you read magazines?".

Question characteristics and the question-answer process in children

When studying the response process in children one should take into account the different stages of cognitive and social development associated with age. Both the cognitive and the social skills, necessary for adequately solving the tasks in the question-answer process, are still being formed and developed in children (Forrester, 1992). Especially, the understanding of a question (the first stage in the Question-Answer process) can be threatened by problems of language use, literacy, and different stages of social and cognitive development. Ambiguous questions can give extra response problems in children (Benson & Hocevar, 1985; Marsh, 1986). The same can be said about complex questions which assume a certain retrieval search in memory which can be beyond the cognitive developmental stage of children. These response problems may influence the quality of the data collected among children and can be detected by studying the test-retest coefficient for children from different age groups in conjunction with the question characteristics ambiguity and complexity.

A question is characterized as *ambiguous* when either the question itself or its answer categories contain words which are not likely to have the same clarity for all the respondents. Examples are vague frequency indicators such as 'sometimes', 'regularly', or 'often', or phrases like 'regular family responsibilities'. A question is also characterized as being ambiguous when it is subject to different interpretations. An example: "Are you being asked questions about your reading homework?". Respondents could interpret the word 'questions' in various ways: 'Did you do your homework?' or 'How long did your homework take?' or 'Did the teacher judge the way you did your homework by asking questions about it?' An example of an unambiguous question is: "Do you get a daily newspaper at home?"

A question is characterized as *complex* when the required information cannot be directly (or immediately) extracted from memory. In answering complex questions, respondents are expected to compile various information units, combine and then compare them. An example: "How often do you read books for fun?" or "How often do you go to the library?". An example of a *simple* (not complex) question is "Did you read a book for fun yesterday?."

In this study we investigated the test-retest correlation of questions in relation with two age groups (9- and 14-years-olds) and the question characteristics: ambiguity and complexity. Considering the developmental stage of the children in these groups and the influence of ambiguity and complexity of questions on the question-answer process, we formulated five working hypotheses. The following hypothesis will be tested:

1. The ambiguity of the questions influences the quality of the data, that is, the test-retest correlation for unambiguous questions is higher than for ambiguous questions.
2. The complexity of the questions influences the quality of the data, that is, the test-retest correlation for simple questions is higher than for complex questions.
3. The developmental stage influences the resulting quality of the data, that is, the test-retest correlation is higher for the elder age group.
4. There is an interaction effect between age group and complexity, that is, the effect of complexity is more pronounced for the younger age group.
5. There is an interaction effect between age group and clarity, that is, the effect of ambiguity is more pronounced for the younger age group.

METHOD

Data collection procedures

The questionnaire items used in this study were derived from the IEA[1] reading literacy study (Elly, 1994). The IEA questionnaire contains a very large, heterogenous collection of questions. Fifty-two questions on pupil and home characteristics (facts) and about reading for fun or reading for school (behavior) were selected.

Two populations were involved in the present study: (A) Nine-year-olds (grade 3, primary education) and (B) Fourteen-year-olds (grade 2 of secondary education). Each question is answered by a sample of students from each age group. A two stage sampling procedure was used. In the first stage schools were sampled for each population (A: primary school and B: secondary school). In the second stage, one complete class was selected from each school. This procedure is described in detail by Ross (1991).

In the 5th or the 6th week after the first administration round of the questionnaire items, the second administration round took place, under identical circumstances to the first.

Analysis

In total 52 common questions were answered by both age groups at two time points. Per age group, each item was answered by 202 students at a minimum and 376 at a maximum. For each question in each age group the correlation between the two time points was computed, which results in 104 correlation coefficients, that can be viewed as indicators of the test-retest (stability) coefficient.

[1]The items were constructed by the National Research Coordinators of an international study of reading literacy under the auspices of the International Association for the Evaluation of Educational Achievement (IEA).

The analysis model is a meta-analysis of the 104 correlation coefficients with as dependent variable the size of the correlation coefficient. This has the advantage that the correlation coefficients are analyzed, using the information available on their standard errors. There are two types of explanatory variables: a) child variables, in this case the variable age group and b) question variables, in this case complexity and clarity of the question. The variable age group has two values 1: 9-year-olds (primary school, grade 3) and 2: 14-year-olds (secondary school, grade 2). The variable complexity has the values 1: complex, 2: not complex; and the variables clarity has the values 1: ambiguous, 2: not ambiguous.

The age group is used as an indicator for cognitive and social growth. We are especially interested in interactions between the child variable age group and the question variables complexity and clarity. That is, do 14-year-olds perform better with ambiguous and complex questions than 9-year-olds.

The analysis uses the hierarchical linear model or multilevel model for meta-analysis, proposed by Bryk and Raudenbush (1992), and implemented in their program HLM. This model decomposes the variance of the 104 correlation coefficients into two parts: sampling variance and systematic variance (Hox, 1994). The systematic variance is then analyzed using a regression model with the explanatory variables age group, complexity of question, clarity of question, and the interaction terms between age group and question variables.

RESULTS

First we investigated whether there was indeed systematic variance between the test-retest correlations. To do this we fitted the 'intercept-only model'. This taught us that the weighted average of the test-retest correlation was .63 and more importantly that there is significant between-item variance of the correlation coefficients (heterogeneity). In other words, the test-retest correlations of different questions differ more from each other than can be expected by chance. Some questions have systematic higher test-retest correlations than other questions.

In order to explain the systematic between question variance of the correlations, we then added main effects for the age-group, for clarity, and for complexity. All three main effects were statistically significant and in the expected direction. The test-retest correlation was on average higher for unambiguous questions (hypothesis 1): the average weighted correlation was .65 for unambiguous questions and .55 for ambiguous ones. For simple (not complex) questions (hypothesis 2) the test retest correlations were also higher: .72 for simple questions versus . 52 for complex questions. Finally, for elder children the average weighted test-retest was .68 and for younger children it was .55 (hypothesis 3).

Adding the variables age-group, complexity and ambiguity to the analysis explained 35 % of the variance between the questions, but the remaining variance was still significant. This means that not all systematic variance could be explained by these three variables, and that the questions still differ in their test-retest correlation.

We then added two interactions, the interaction between age-group and complexity was not significant. This means that hypothesis 4 is rejected. The test-retest correlations for complex questions do not differ for the two age group. However, the interaction between age group and ambiguity was significant (hypothesis 5). Therefore, we adopted as a final model a regression model with three main effects (age group, complexity, and clarity) and one interaction (age group*clarity). This model explains 37% of all between question variance. For a summary of this model see Table 1 below.

Table 1 Final model

Fixed Effect	Coefficient	S.E.	T
Intercept	-.48	.24	-2.05
Age Group	.39	.15	2.64
Complexity	.21	.06	3.27
Clarity	.40	.15	2.63
Interaction (Age*Clarity)	-.17	.09	-1.85

Random Effect	Var. Comp.	df	chi^2	p-value
residual var.	.05	99	1006	.00

Interactions should be interpreted taking main effects into account. The interaction term in Table 1. is in accordance with hypothesis 5: elder children perform better with ambiguous questions then younger children. This is graphically represented in Figure 1.

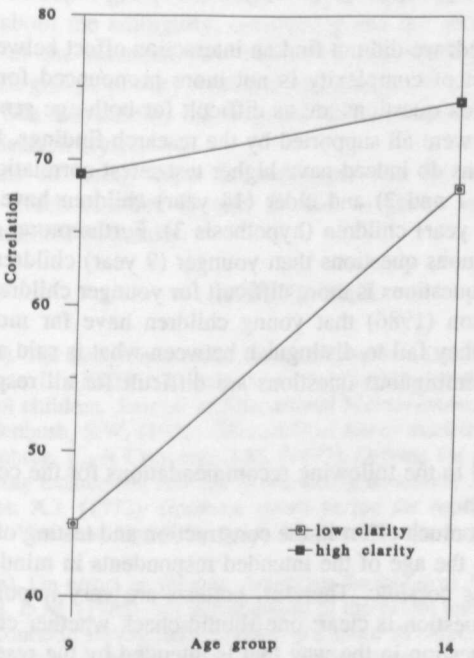

Fig 1. Mean correlation by age group and clarity

Concluding: there is systematic variance between the test-retest correlations. This systematic variance can (partly) be explained by the variables age group, complexity of question, clarity of question (unambiguousness), and the interaction between age group and clarity of question. A regression model with age group, complexity of question, clarity of question and the interaction between age group and clarity explains 37% of all between question variance.

SUMMARY AND DISCUSSION

We were especially interested in the research question whether characteristics of survey questions differently influence the quality of responses in different age groups. Therefore, we tested the following five hypotheses:

1. The clarity of the questions influences the resulting quality of the data, that is, the test-retest correlation for unambiguous questions is higher than for ambiguous questions.
2. The complexity of the questions influences the resulting quality of the data, that is, the test-retest correlation for simple questions is higher than for complex questions.
3. The developmental stage influences the resulting quality of the data, that is, the test-retest correlation is higher for the elder age group.
4. There is an interaction effect between age group and complexity, that is, the effect of complexity is more pronounced for the younger age group.
5. There is an interaction effect between age group and clarity, that is, the effect of ambiguity is more pronounced for the younger age group.

Only hypothesis 4 was rejected: we did not find an interaction effect between age group and complexity, that is, the effect of complexity is not more pronounced for the younger age group. In other words: complex questions are as difficult for both age groups.

The other four hypothesis were all supported by the research findings. Unambiguous and simple (not complex) questions do indeed have higher test-retest correlations for children in both age-groups (hypothesis 1 and 2) and elder (14 year) children have higher test-retest correlations than younger (9 year) children (hypothesis 3). Furthermore, elder children (14 year) cope better with ambiguous questions than younger (9 year) children (hypothesis 5).

That ambiguity in survey questions is more difficult for younger children is in accordance with the findings of Robinson (1986) that young children have far more difficulty with ambiguous speech, and that they fail to distinguish between what is said and what is meant. But it should be noted that ambiguous questions are difficult for all respondents, even for adults (cf. Belson, 1982).

The results of this study lead to the following recommendations for the construction and use of questionnaires for children.

First of all, one should put much effort in the construction and testing of the questionnaire, and one should always keep the age of the intended respondents in mind. Questions should be as clear and as simple as possible. Therefor, pretests are very important to investigate whether the meaning of a question is clear; one should check whether children of a certain age group understand the question in the way that is intended by the researcher.

In the second place, one should be extremely careful in using complex questions that refer to children's behavior in general (e.g., questions in which the required information cannot be

directly extracted from memory) even by elderly children or adolescents. This study gave some strong indications that not only ambiguity of questions have a negative influence on the quality of survey data but also the complexity of questions. If an answer to a (behavior) question cannot be extracted from memory a respondent is expected to give an educated guess. However, our results showed that these guesses are less educated than researchers hoped for. We emphasize this point because most standard questionnaire items about behavior issues are formulated complex, for instance: "How often do you read a book at home?", "How often do you go to the library?" or "How often do you watch television at home?".

Finally, one should be very careful in using questionnaires that are developed for an different age group than the one under investigation. Before using a questionnaire developed for older children in a younger group one should check whether the younger children understand the questions and especially whether 'ambiguous' questions are adequately coped with by the younger age group.

To investigate whether standard survey questions are understood as intended by the researcher, pretest using 'cognitive laboratory techniques' are advised. Several different methods can be used to investigate whether errors occur in the thought (question-answer) process when a respondent is answering a survey question. One such a method is thinking aloud of a respondent when answering a question, another method is in depth interviewing of the respondent on the meaning of the words in the structured closed question; for a review of methods see Forsyth and Lessler (1991).

A particular good method to test survey questions or questionnaire items intended for young children is in-depth group discussions or focus groups. Children's focus groups can give information about the ambiguity, complexity and the format of planned questions and on the adequacy of the intended data collection procedure (Scott, in preparation). Scott advises to use small groups of very restricted age groups, so older children will not dominate the younger ones. She also advises that boys and girls are interviewed separately as they have different communication styles.

The first results of using these in depth pretests for children's questionnaires are encouraging. But much research is still needed to gather insight in how to implement children's questionnaires optimally.

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INTERVIEWING CHILDREN IN THE BRITISH HOUSEHOLD PANEL SURVEY[1]

Jacqueline Scott, Malcolm Brynin and Rachel Smith

In our supposedly child-oriented society, children are often ignored in large-scale survey research. For example, household studies are conducted as if the children are at best auxiliary members and at worst non-existent except in so far as they contribute to measures of household size, density, household income and the like. Even studies that are concerned with child-development have often been conducted on the assumption that a child should be studied but not heard, with the information gathered from a parent (nearly always the mother). However, there is often a very large gulf between parental and child perceptions, which makes the common method of gathering information about children from adults extremely problematic. As most parents will regretfully admit, they are often the last people to know about things of consequence in their children's lives, especially once their children reach the teenage years. Moreover, any parent will attest that children do have views of their own, they express opinions, they observe and judge, and they exert a crucial influence on the way families and households function.

Policy studies have generally failed to appreciate that children are active participants in the functioning of households. Yet, advertising and marketing agencies have certainly not made the same mistake and it has long been accepted by market research that children are an economic force to be reckoned with. It is not just that children are consumers in their own right, but the importance of 'pester power' in families is now well-recognised. Somewhat belatedly, policy studies of family consumption are taking account of the fact that children are active consumers. For example, an interesting study, cleverly entitled "Into the Mouths of Babes", documents the various strategies used by children and young people to persuade their parents and other adults to buy them things they want. Using group discussions with children aged seven through to sixteen, the research revealed a staggering sophistication in the application of persuasion techniques that ranged from begging through negotiation to direct action (Walker et al 1994).

Nevertheless, in social science more generally, children have often been ignored. They tend to be excluded from statistics and other social accounts (Qvortrup 1994) and, overall, there exists very little material that directly addresses the experience of children at the societal level.[2] In large-scale surveys of the general population children are usually regarded as 'out of scope' and samples usually include only respondents over the age of 16 or 18. Moreover, much of the research that does take children into account is primarily concerned with the impact of children on adult lives. For example, how does the presence of young children influence the mother's labour market choices? What are the financial costs involved in rearing

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[2]One exception is in media studies, where there is much research focused on children. While this has often had an adult angle, reflecting concern over the impact of the adult world on the world of the child though the media, this nevertheless does provide some insight into the child's perspective (e.g. Buckingham, 1987).

children? What effect does the presence of children have on a couple's propensity to split-up? Research that is interested in children per se is relatively rare. In recent years, however, the construction of childhood that views children as 'incomplete adults' is coming under attack and there is a new demand for research that focuses on children as actors in their own right.

Interviewing children, however, does pose some particular methodological and practical problems. In this paper, we discuss how the British Household Panel Study (BHPS), which now includes young people aged 11-16, has overcome these problems. In particular, we discuss our experience in using focus groups to explore young people's conceptions of family health to develop a questionnaire appropriate for young people, and to refine a new method of interviewing children in the household context.

THE BRITISH HOUSEHOLD PANEL STUDY

The British Household Panel Study (BHPS) was launched in September 1991 with the remit of monitoring micro-social change in Britain through the 1990s and beyond. The survey is carried out by National Opinion Polls (NOP) on behalf of the ESRC Research Centre on Micro-social change at the University of Essex. The BHPS involves an annual survey of each member of a nationally representative sample of at least 5000 households, making a total of approximately 10,000 individuals. Interviews are sought with all household members aged 16 and above. In 1994 (the fourth wave) for the first time interviews were held with young people aged 11-16 in panel households. More than 900 young people are eligible and they are spread across some 650 households. These children will then automatically become adult sample members once they reach the age of 16.

The survey has a broad remit in that it is a general purpose instrument for studying social and economic change at the individual and household level. The core questionnaire covers a broad range of social science interests including income, labour market behaviour, housing conditions, household composition, education, health and usage of health services, economic decision making in the household, residential mobility and socio-economic values.

In the initial years of the survey (1991-1993) BHPS data collected on children were minimal. We recorded the ages and sex of children and collected information on child disabilities and health. This was, however, primarily concerned with how caring responsibilities impinged on adult choices. Other measures linked to children have had similar motivations. For example, questions on child-care are part of the employment section and questions on alimony or child allowances are included with household finance. Nevertheless, it was from the outset considered desirable to collect information on children directly, partly in order to learn more about the role children play in households, but also to establish a base line from which to monitor subsequent mobility. In 1993, the BHPS was fortunate to secure additional funding from the Health Education Authority to enable it to carry out additional interviews, with young people themselves.

Many of the special-purpose studies that interview children do so in the context of the school, because gaining access to households is time-consuming and expensive. For the BHPS, there was no problem in gaining access to the households, as interviews would be carried out adult sample members, in any case. Moreover, although parental consent is needed for minors, it was not anticipated that this would be a problem because the parents were already respondents themselves. The main focus of concern, therefore, was to ensure full co-operation and valid responses from the young people.

First and most important, a way had to be found of guaranteeing that the children's answers would be private and confidential. Interviewing children at home poses special problems in this regard as children may well feel too constrained to answer questions honestly, if their parents or siblings are present, and it is often not possible to ask the parent to leave the room. The concern to win the young person's confidence and to ensure that the young person could respond without fear of being over-heard by other family members was paramount in the design of this study.

The BHPS main survey uses face to face personal interviews with adult respondents together with a short self-completion component for questions that may be sensitive. However, neither of these methods seemed appropriate for interviewing children. Face to face interviews conflict with privacy and the self-completion method risks problems for those young people with limited reading skills. The method selected was to record the young person's questionnaire on a personal walkman. Listening to questions on tape has two significant advantages. First, no-one else can hear the questions, and because the answer booklet only contains response categories, the method ensures complete privacy. Second, unlike standard self-administered questionnaires, the method overcomes the problem of effective literacy, which was of concern given the young age of many of our new respondents.

Although this interview method had been developed and tested extensively in the United States and has been used very successfully on the Youth Risk Behaviour Surveillance System Questionnaire for the National Center for Health Statistics (Camburn, Cynamon and Harel 1991), the method had not, to our knowledge, been used before in Britain. It was therefore necessary to pretest the method thoroughly. Our pretest phase had two parts. First we used qualitative group interviews of young people to give feedback on use of the walkmans and second we used our pilot household panel to test the methodology in the home setting.

DEVELOPING THE YOUNG PEOPLE'S QUESTIONNAIRE

The Young People's Survey was commissioned by the Health Education Authority to focus specifically on the changing nature of health related attitudes and behaviours of young people and their families. Relatively little is known of children's conceptions of health in the family setting (Brannen et al., 1994). Therefore, we decided to use focus groups of children not only to provide qualitative insights into young people's understanding of health issues, but also to help develop appropriate questions and to test how best to use the walkman method for the structured interviews.

The first goal of the focus groups was therefore a substantive one. We wanted to explore young people's understanding of a series of health-related issues. Our more specific goal was to investigate the way health is or is not promoted within the family context and whether health attitudes and behaviour are ever a matter of prescription or dispute. We also wanted to explore the potentially sensitive area of mental health, again seeking to elicit the children's own conceptions and beliefs.

The second goal of the focus group was to help develop structured questions for use in the BHPS. We hoped the discussions would help identify appropriate ways of framing questions, with sensible wording and response options for use in the large-scale survey. In particular we did not want to pre-judge what health means to young people. Instead we wanted to explore what they mean by being healthy and indeed whether the term has much meaning and importance to youth at all. It has been suggested , in areas where there is little background

knowledge, qualitative research can be useful for the development of survey instruments (Morgan 1993). Certainly the information we elicited from the focus groups was far preferable to guesswork and focused our attention on new and unanticipated areas that could be explored through structured questions and quantitative analysis. Furthermore, we gained invaluable information about the use of the walkman method and were able to establish the preferred voice type, the optimal speed of reading, and the relative viability of open versus pre-coded question formats.

Focus Groups with Children. The recruiting and conduct of the focus groups was carried out by the qualitative division of the British Household Panel Study's survey agency National Opinion Polls. We carried out six two-hour extended group discussions in the target age group, each containing eight boys or girls. Conventional wisdom regarding 'best practice' for interviewing children in a group setting suggests that : (1) children should be interviewed in restricted age-groups as otherwise older children will dominate; and (2) boys and girls should be interviewed separately as they have such different communication styles. Thus, in order to ensure group identity and cohesion we separated the groups by gender, age-groups and socio-economic category. Each group also had at least one child from a lone parent family. In addition, we recruited an adult group of parents who had children in the target age range.

The children's focus groups lasted approximately two hours. The detailed discussion guide included topics such as freedom and rules in the house, family communication and sources of advice, health beliefs and practices, anxiety and depression, and future aspirations and expectations. For some of the topics visual materials were used to stimulate discussion. These could be particularly useful for discovering how young people thought about sensitive topics such as mental health. For example, towards the end of the discussion a picture of Munch's "Scream" was used to try and probe what sort of things make young people really anxious, upset or sad. This was not very successful with the older groups, who clammed up, unwilling or unable to talk about such feelings. But the younger groups were more willing to discuss such matters and identified the breakdown of communication with adults, and in particular not being trusted or believed, as a prime cause of anguish.

When asked to describe what sort of feelings the Munch picture expressed, the group of younger boys volunteered the words sad, depressed, unhappy, suicidal, and also identified the picture with feelings associated with "doing something which you knew you shouldn't" and "getting told off". One of the boys spoke poignantly about getting the blame for something he had not done. He had been falsely accused of throwing an egg at the door of some black neighbours. The accusation clearly stung him a lot, because he liked the family. But what was far worse was that he was not believed when he described how, although he had seen the incident, he had no part in it. Not being believed, parents not listening, and adults not understanding, were themes that came up in several different contexts. The outcome was always similar, and such communication breakdowns were seen as the cause of real distress.

The focus group discussion highlighted many areas where young people felt communication break-downs occurred and parents had little or no understanding of their real feelings. This is something we will be able to explore more systematically through our structured interviews. For certain questions we ask each parent (if present in the household) to respond according to how they think their child would reply. These responses can then be compared with the young person's own reply.

How can young people talk about their own mental anguish? And how can this be captured in a closed-ended survey format? To test this we showed a card with a range of smiley faces

to see whether young people could identify their state of happiness with respect to different aspects of life.

This standard happiness stimulus worked extremely well with young people of this age-range. In the focus groups it prompted a discussion of mood states and changes. Even the youngest boys had a remarkably sophisticated understanding of moods, impression management and 'face' - in the sense of how people present themselves in everyday life, thus confirming the view of Goffman (1959). The following is an example of a sequence of responses from one child. (The name is fictional).

John:You'd need to video your face to see what you were like

Q.What about how you feel inside?

John:Sometimes it's not how you show yourself on the outside..
You need two, one where you sort of feel, and one how you think you look...
And another one, how people say you are.

Q. If this was actually trying to measure how you feel, how easy is it?

John:It depends if you recently had an argument or something, or recently had a really good something, so it's a bit unfair really because you could do it on one day ....

Q. But if you were asked next week it might it be quite different?

John: Yes probably because I don't know what the future is going to be like do I? If you get a detention at school you might put G (very sad), whereas if a person you really hated got a detention, you might put A (very happy).

Q.But If the object was to say how do you feel most of the time?

John:I'd say 'C ' (fairly happy).

In the light of this discussion the wording of the structured of the question was changed to make it explicit that the answers should reflect how you feel inside and not how you look.

A further use of the focus groups was to inform the development of the walkman interviews. At the end of the focus groups, walkmans were handed out to each participant, together with a short self-completion booklet in which they could record their answer. This short test interview was designed to provide feedback on the voice type, the speed of question delivery and the clearest design for the answer booklet. It was also important to test out the appropriate format of questions, and in particular whether the children could handle open as

well as closed questions in the taped interview. Group discussion then gave more general feedback on the walkman method. The only technical problems were caused by adult ineptitude with the machines. Fortunately the young people were well familiar with walkman sets, and were able to manage well without adult intervention.

Feedback from these groups indicated that young people were very sensitive to the quality of the voice, rather than having a preference for a particular sex, age or accent. In order to give adequate time to answer, the questions and response options were repeated, but this caused considerable irritation to some children. Therefore, we subsequently adopted the compromise solution of reading the question and response once, and only repeating the main thrust of the question. We included several open ended questions and these seemed to work quite well. Older children, in particular, gave fairly detailed responses.

The focus groups showed beyond doubt that, given the right encouragement, young people are more than willing to say what they think. Thus the focus groups were both very useful in their own right, providing a wealth of qualitative materials to analyse, and in helping develop the quantitative research instruments and method. Nevertheless, focus groups are clearly no substitute for structured pretests that mimic the real interview setting.

The Pilot Pretest. The Youth Person's Survey was further tested on a pilot sample of approximately 120 households. The questionnaire had been pre-recorded with 83 questions in all, of which 3 were open-ended. The interviews on average lasted 30 minutes. Surprisingly, this length of interview was not felt to be too long, even for our youngest respondents.

The pilot was a resounding success and revealed only one problem. Interviewers had been instructed to be present when the young person was completing the walkman interview so that they could observe any difficulties and answer any questions that might arise. In the event there were very few difficulties. However, the presence of the young person was felt to be detrimental to the parental interview and it is clearly desirable for the parents to be interviewed alone. Thus, in the main survey, young people are encouraged to do the walkman interview in a different room, if possible, from where the adult interviews are carried out. Response contamination is always a concern in a household interview. It was expected that this would be a particular problem in the questions for young people and their parents on family and other matters. It is, of course, always preferable for interviews to be conducted with the respondent alone. However, sometimes this is not possible and, for this reason, the BHPS routinely collects information on who else was present during the interview.

Inevitably the pilot identified a few problems with particular question wordings. For example, young people are very literal in their interpretation of questions. In some questions we wanted the respondents to answer for people of their own age-group. However, when the phrase "people of my age" was read out on the tape, some respondents tried to guess the age of the script reader! In other instances the reference person was not clear. Questions, for example, that refer to a person's mother or father are inherently ambiguous, given that many children are now part of complex families and have both natural and step parents.

Mainstage Implementation. At the time of writing, the main stage survey is currently in the field. To date over 750 interviews with young people have been obtained. On the whole, the young people appear very keen to participate and, if anything, help our household response rates by increasing the enthusiasm of other household members. Refusals from young people themselves are negligible, and the only real problem is one of non-contact, resulting from an

adult refusal to be interviewed. Otherwise, parental approval for the interview seems easily obtained in nearly all cases. Some parents (but surprisingly few) request to see the questions that their children are being asked. For this purpose, we produce a special document, listing the questions in a different order than in the interview schedule, so that even if the parent see their children's responses, they do not know what question are being answered. The Young Person's Questionnaire is preceded with the same statement of confidentiality and voluntary participation that we use with our adult respondents. The ethics that apply to interviewing children should, we feel, be even more stringent than with adults. Children are relatively powerless in society and, despite the attention given to children's rights, have relatively little recourse to official channels of complaint. It is therefore very important that researchers are particular conscious of their ethical responsibilities when interviewing minors. In particular, special attention needs to be paid to explaining the research purpose in a comprehensible fashion and obtaining the young person's informed consent. Following our practice with adult respondents, young people are offered an incentive (a money voucher) to take part in the survey. It has been questioned whether 'bribing' children with money is ethical. Our position is that the incentive acknowledges that we attach the same worth to young people as to our adult respondents.

SUMMARY AND CONCLUSIONS

In this paper we have described a novel method of incorporating interviews with young people into an ongoing prospective national household panel survey. The Young Person's Survey will have the great analytical advantage of combining responses from these young people with longitudinal data on all adult household members. This will provide rich contextual data for a detailed understanding of how family dynamics influence attitudes and behaviour in health and other matters over time.

The BHPS has successfully implemented the Young Person's Questionnaire using tape-recorded interviews on a personal stereo and self-completion answer booklets. This has at last three advantages over conventional methods. First, it is cost-effective, as the young people's questionnaire is administered at the same time as face to face interviews are being carried out with other adults members of the household. Second, it ensures that the young person can respond honestly and without fear of being over-heard by other family members. Unlike a face to face interview, no-one else can hear the questions. Moreover, because the answer booklet only contains response categories, the method ensures compete privacy. Third, unlike standard self-administered questionnaires, the method overcomes reading difficulties, which is of particular concern, given that our youngest respondents are only eleven.

As an aid to developing the Young Person's Questionnaire, the BHPS used six focus groups of young people. In order to ensure group identity and cohesion we separated the groups by gender, socio-economic category and age-group. In addition, a focus group was recruited from parents of the target age band. The young people's focus groups were especially productive. We were able to explore many sensitive areas in the family health domain,such as mental well-being and perceptions of parental control or rule-setting within the home. Children have very different conceptions of these from adults, and the focus group discussions proved illuminating for identifying appropriate wording, question formats and response options. In the paper we have provided several examples of how the focus group discussions informed the development of the subsequent Young Person's Questionnaire. This

combination of the use of focus groups together with structured interviews of young people in their homes, offers a useful new methodological tool for family research.

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RELIABILITY AND VALIDITY OF THE CLASSIFICATION OF ADVERSE FAMILIAL AND ENVIRONMENTAL SITUATIONS

Godelief Willemse and Tom van Yperen

It is generally accepted that adverse familial and environmental situations play an important role in the aetiology of many child and adolescent psychiatric disorders. Moreover, these situations have prognostic value and need to be taken into account in planning preventive and therapeutic interventions (see e.g. Rutter & Gould, 1985). In view of this, the tenth revision of the International Classification of Diseases and Health Related Problems (ICD-10; WHO, 1992) contains a number of guidelines and categories for coding different types of adverse familial and environmental situations. Such a standardisation of definitions forms the basis for optimum communication among mental health workers. However, a world wide classification scheme can only be operational if the system is reliable and if it relates to concepts and theories normally used in the field. With respect to the latter, little is known about the relationship between ICD-10 categories and general theoretical approaches in characterising familial circumstances. The use of instruments based on these approaches, as part of the family assessment, offer the opportunity to study the relationship with several ICD-10 categories. The present paper addresses two questions concerning the ICD-10 categories for adverse familial and environmental situations: (1) What is the interrater reliability of these categories, as assessed in daily practice? (2) Are there any conceptual relationships, as perceived by clinicians, between these categories on the one hand, and the standardised "Family Climate Scale" (De Coole & Jansma, 1983), based on a typology for family functioning, on the other hand?

Before we examine both aspects, we first give some background information and describe the contents and the structure of the ICD-10 categories under study.

AXIS V OF THE ICD-10

Two versions of the ICD-10 categories for adverse familial and environmental situations exist: a brief, official version, which can be find in Chapter Z of the ICD-10, and a more extensive one for clinical use, developed by a WHO committee (Van Goor-Lambo, Orley, Poustka & Rutter, 1990). In our study, we examine the extensive version. This is a revised version of the fifth axis of the child psychiatric Multi-axial Classification Scheme based on the ICD-9 (Rutter, Shaffer & Sturge, 1979). Axis V is commonly referred to as "axis V of the ICD-10".

Just as in the psychiatric tradition of classification schemes, such as the ICD and DSM, the various categories of axis V are not based on one specific theory, but are the result of a compromise between clinicians with different theoretical backgrounds. Only those categories were chosen for which there was empirical evidence that they might be important psychiatric risk factors (Van Goor-Lambo et al., 1990).

Axis V consists of 9 main categories and 38 subcategories. In addition to a category for "No significant distortion or inadequacy of the psychosocial environment", three main themes can be distinguished. The first theme covers different kinds of abnormal and unusual family environments, such as "Abnormal intrafamilial relationships", "Familial mental disorder, deviance or handicap", and "Abnormal qualities of upbringing". The second theme deals with

acute life events, which can be intra- or extra-familial (e.g. "Loss of a love relationship" and "Sexual abuse, extra-familial"). Finally, several situations outside the family are included (e.g. "Societal stressors" and "Chronic interpersonal stress associated with school or work"). In the glossary, each category is extensively described in terms of criteria. Each subcategory has to be coded with 0 "situation absent; normal range", 1 "situation dubiously present", 2 "situation definitely present" or 9 "insufficient information to make the coding".

AN INTERRATER RELIABILITY STUDY OF AXIS V

Design

Although the reliability of axis V has already been investigated under highly controlled research conditions (see e.g. Bästlein & Poustka, 1993; Shaffer, Gould, Rutter & Sturge, 1991; Van Goor-Lambo, 1984, 1987), it has hardly ever been done in normal day-to-day use. As we are interested in the interrater reliability of axis V as assessed in daily clinical practice, we have chosen for a field study or an "in vivo" design. In comparison with a highly controlled design, such as the use of standardised case vignettes, the "in vivo" design gains a clear insight into the reliability of classification in daily practice, because it offers the opportunity to make use of the normal clinical procedures within institutes (Van Yperen, 1990; Werry, Methven, Fitzpatrick & Dixon, 1983).

In our study, each case was classified by two types of raters. The *A rater* was a clinician who knew the child and his parent(s) from the diagnostic procedure. He took part in writing the case record and coded the case according to axis V (mostly within two months after admission of the child to the institute). The *B rater* was a colleague of rater A, belonging to the same institute. He usually did not know the case through the diagnostic procedure. The B rater made a second classification solely based on the dossier.

Procedure, participating raters, and subjects

All raters received a standard training in the use of axis V and the questionnaires, and participated in a small pilot study. The official study followed the design described above.

The participating clinicians (A and B raters) came from the following institutes: nine day-care centres for children with developmental delays and/or adverse psychosocial circumstances, one child psychiatric clinic, and four ambulant mental health institutes. Fifty-one clinicians (predominantly social workers) participated in the study: 10 as an A rater, 9 as a B rater, and 32 as an A rater in one case and B rater in another. Twenty-one clinicians had experience with previous versions of axis V.

In all, 300 cases admitted to the participating institutes were involved in our study (200 boys and 100 girls). The average age was 6 years and 1 month (s.d. 3 years and 4 months), varying from 0 to 13 years.

Data Analysis

For each of the categories of axis V, Cohen's weighted kappa (K-w: Fleiss, Cohen & Everitt, 1969) was computed. With respect to the subcategories, the following weights were assigned to the combinations of codings by the two type of raters: 0-0, 1-1, 2-2 and 9-9 were weighted with 1 (full agreement), 0-1, 0-9, 1-2 and 1-9 with .50 (half agreement), and 0-2 and 2-9 with 0 (full disagreement). For the main categories, we calculated the highest rating of the subsuming subcategories (except for those categories which are not subdivided). For the

computation of K-w, the same procedures as for the subcategories were applied, except that for this purpose code 9 was combined with code 0 (9=0).

Results

The results of the two groups of clinicians (rater A and B) are given in table 1.

Table 1. Weighted kappa's for A and B raters (N=300)

Category axis V[1 2]	Kappa
0.0 No significant distortion[3]	**.47**
1. Abnormal intrafamilial relationships	**.58**
1.0 Lack of warmth in parent-child relationship	.47
1.1 Intrafamilial discord among adults	.54
1.2 Hostility towards or scapegoating of the child	.35
1.3 Physical child abuse	.38
1.4 Sexual abuse (within the family)	.29
1.8 Other	.20
2. Familial mental disorder, deviance or handicap	**.49**
2.0 Parental mental disorder/deviance	.48
2.1 Parental handicap/disability	.37
3. Inadequate or distorted intrafamilial communication[3]	**.36**
4. Abnormal qualities of upbringing	**.44**
4.0 Parental overprotection	.45
4.1 Inadequate parental supervision/control	.43
4.2 Experiential privation	.41
4.3 Deviant parental pressures	.34
5. Abnormal immediate environment	**.71**
5.0 Institutional upbringing	.78
5.1 Anomalous parenting situation	.80
5.2 Isolated family	.35
5.3 Living conditions, potentially hazardous	.24
6. Acute life events	**.50**
6.0 Loss of a love relationship	.46
6.1 Removal from home carrying significant contextual threat	.50
6.2 Altered pattern of family relationships	.35
6.3 Events resulting in loss of self-esteem	.31
6.4 Sexual abuse (extra-familial)	.23
6.5 Personal frightening experience	.27
8. Chronic interpersonal stress school/work	**.43**
8.0 Discordant relationships with peers	.46
8.1 Negative interactions with teachers/work supervisors	.19
8.2 General unrest at school/work	.24
9. Stressful events resulting from the child's disorder	**.13**
9.1 Removal from home carrying significant contextual threat	.24
9.2 Events resulting in loss of self-esteem	.07

[1] Some labels are abbreviated;
[2] Categories with low frequencies ($n \leq 5\%$ by at least one type of rater) not mentioned;
[3] Category analysed as a subcategory.

Since kappa is not a suitable measure for categories with low frequencies, only categories used more often than 5% by the two types of raters were taken into consideration. According to Landis and Koch (1977), a kappa value between .41 and .60 is moderate, and a kappa of .61 is considered as a minimum for sufficient reliability.

The second column in table 1 displays the overall reliability (N=300). The findings show that there are remarkable differences in agreement between the categories, varying from .07 (category 9.2 "Events resulting in loss of self-esteem") to .80 (category 5.1 "Anomalous parenting situation"). Only two subcategories have a K-w greater than .60. These are: 5.0 "Institutional upbringing" and 5.1 "Anomalous parenting situation". A reasonable number of subcategories can be seen as moderate reliable (category 0.0, 1.0, 1.1, 2.0, 4.0, 4.1, 4.2, 6.0, 6.1, 8.0). The reliability of the other ones is low (K-w $\leq$ .40). As only two subcategories reach a sufficient reliability, the results are rather disappointing.

Considering the reliability of the main categories, it can be seen that K-w coefficients approach the maximum value of subsuming subcategories (an exception to this is category 9). However, also for these main categories, the results are below the K-w limit. Only category 5 "Abnormal immediate environment" has an acceptable reliability, and category 1 "Abnormal intrafamilial relationship" is close to the .61 (K-w = .58). In summary, the overall reliability of the clinicians who made their classification "in vivo" is not really satisfactory.

DISCUSSION

With the exception of more or less objective categories, like "Anomalous parenting situation", it turned out that the reliability of axis V, as assessed in ordinary daily practice, is far from sufficient. In order to explain these results, we first have to look closer to our design.

Although the "in vivo" design has the strength of "reality", it also has its weaknesses. A disadvantage is the lack of control for confounding factors. For example, raters could have used different sources of information, and there is not much control over the independence of raters and the specific procedures followed (see e.g. Rutter & Shaffer, 1980). In order to get a more differentiating impression of our results, we performed special "post hoc" analyses to inspect the influence of confounding factors. We have not described these analyses in the previous section. Briefly, the results indicate that the low reliability of axis V is only partly due to the inherent weaknesses of the "in vivo" design. Moreover, also with previous versions of axis V, using mainly standardised case vignettes, a predominant unsatisfactory reliability has been reported (see e.g. Shaffer et al., 1991; Van Goor-Lambo, 1984, 1987). In other words, our results are roughly in line with research in which confounding factors are controlled as much as possible.

As a second step to explain the insufficient reliability, factors inherent in axis V would have to be taken into account. One of these factors is the fact that axis V of the ICD-10 contains very specific criteria and guidelines which have to be fulfilled to code a psychosocial situation as applicable. As Cantwell and Rutter (1994, p.15) state with respect to axis V: "...information requirements of the psychosocial classifications are substantial and, if a reliable and valid coding is to be achieved, it will be important that the clinical assessment includes an adequate systematic evaluation of the child's psychosocial circumstances". It may be that information gathered in ordinary clinical practice is not always sufficient to make a classification on a highly specific instrument as axis V. Some evidence for this impression has been found from studies using the especially for axis V designed semistructured

standardised parental interview (WHO, 1990). In these studies, a substantial better agreement has been found (e.g. Bästlein & Poustka, 1993; Lehman, Burk & Poustka, 1993). In our investigation, we have examined whether the systematical use of two family questionnaires has a positive impact on the interrater reliability. These results will be published elsewhere.

CONCEPTUAL RELATIONSHIPS BETWEEN AXIS V AND THE FAMILY CLIMATE SCALE: A PILOT STUDY

As stated before, axis V is a theoretical unenterprising scheme. It is therefore interesting to examine the relationship with well-known theoretical approaches in characterising familial circumstances. Different methods can be used to establish this relationship. For example, it is possible to investigate the validity within a theoretical framework. A second approach to examine the validity is to empirically relate scores of instruments based on theoretical approaches with codings on axis V. Finally, it is possible to directly ask the clinicians what they think is the relation between items of a family questionnaire and categories of axis V. We have chosen for the latter way and have set up a small pilot study to investigate this.

The Family Climate Scale

The so-called "Family Climate Scale" (GKS; De Coole & Jansma, 1983), a Dutch adaptation of the Family Environment Scale (FES; Moos & Moos, 1981), has been used to examine the relationship with categories of axis V. The GKS is based on a typology of family functioning developed by Moos (e.g. Moos & Moos, 1976). The 99-item GKS consists of nine subscales that determine the characteristics of the family environment as perceived by its members. Each subscale consists of eleven items. The reliability (Cronbach's alpha) of the nine subscales of the GKS was found to vary from "moderate" to "sufficient" (Jansma, 1988). The subscales are described in table 2.Table 2. The Family Climate Scale: subscale descriptions and sample items

Subscale descriptions	Sample items
1. *Cohesion*: the degree of commitment, help, and support family members provide for one another.	We support each other in all circumstances.
2. *Expressiveness*: the extent to which family members act openly and express their feelings directly.	We are careful about what we say to each other.
3. *Norms and values*: the emphasis family members lay on norms and values.	We can clearly distinguish good from evil.
4. *Organisation*: the degree of importance of clear organisation, responsibilities, and structure in family life.	Each person's duties are clearly defined in our family.
5. *Control*: the extent of control among family members.	We can do whatever we want to in our family.
6. *Conflict*: the amount of openly expressed anger and aggression in the family.	We fight a lot in our family.

7. *Intellectual-cultural orientation*: the degree of interest in political, social, intellectual, and cultural activities. — We are involved in things that happen in our neighbourhood.
8. *Active-recreational orientation*: the extent of participation in social and recreational activities. — We prefer to stay at home as much as possible.
9. *Achievement orientation*: the extent to which activities are cast into an achievement-oriented or competitive framework. — We feel it is important to be the best at whatever you do.

Method, procedure, and participating clinicians

In order to determine which categories of axis V were suitable to use in the experiment, an a priori selection has been made. The GKS aims to measure the family environment; the categories of axis V which refer to extra-familial situations (e.g. "Societal stressors") were therefore excluded from the study. Furthermore, other categories that do not seem to be tapped by the GKS (e.g. "Familial mental disorder, deviance or handicap") were excluded as well. In all, 14 categories were involved in our pilot study. Also with respect to the GKS we made a selection beforehand. As each GKS item has to be answered with "yes" or "no", there should be 198 (2 x 99) statements involved in the experiment. For practical reasons this was not possible. Therefore, only those statements which refer to an, in our opinion, negative situation were involved. For example, the statement "We fight a lot in our family" has been involved, but the opposite statement ("We don't fight a lot in our family") not. The reason for this "negative" choice is that axis V refers to *abnormal* psychosocial situations; positive situations are not taken into consideration.

To examine conceptual relationships, a modified Q-sort technique was designed for use in this study. Q sort is a way of rank-ordering objects (items, stimuli, etc.), developed by Stephenson (1953). In our study, it consisted of 85 cards, each with a GKS statement written on it. Participating clinicians were asked to assign each card to one of the 14 categories of axis V involved, which were written on envelopes. In order to prevent as much as possible that the response to one statement would be affected by the responses to other statements, clinicians had to put each card inside an envelope.

The participating clinicians were 32 raters also involved in the reliability study, and were familiar with the GKS and axis V. At the end of the reliability study, the Q-sort experiment took place. It took 30 to 45 minutes to complete the experiment.

Results

The individual GKS statements have been recoded to one of the nine subscales to which they refer. Subsequently, data were analysed by means of the SPSS-X Multiple Response procedure.The results of the Q-sort experiment are shown in table 3. In the first column, the categories of axis V involved are given. The next columns display for each GKS subscale the number of items and percentages of items assigned to each axis-V category. The number of items assigned to the main categories 1, 4 and 5 have been obtained by adding the numbers of each of the subsuming subcategories. These main categories do therefore not correspond with the total number of items of the various GKS-subscale columns. For each subscale of the GKS, the bold printed numbers refer to the categories of axis V to which most items were assigned to.

The results reveal several relationships between concepts covered by the GKS and axis V. The most consistent relationship was found for the categories 4 "Abnormal qualities of upbringing" and 5 "Abnormal immediate environment". The items assigned to category 4 predominantly came from "Control", "Norms and values", "Achievement orientation", and from "Organisation". Especially the categories 4.1 "Inadequate parental supervision/control", 4.3 "Deviant parental pressures", and 4.8 "Other" are responsible for these scores. Category 5 contained 85.9% of the items from the subscale "Intellectual-cultural orientation", and 55.6% of the items from the subscale "Active-recreational orientation". These large percentages are mainly caused by 5.2 "Isolated family". A less consistent, but still clear, relationship was found for category 3 "Inadequate or distorted intrafamilial communication". In particular, items of "Expressiveness and of "Conflict" have been assigned to this category. For the categories 0 "No significant distortion" and, somewhat surprisingly, 1 "Abnormal intrafamilial relationships", the weakest relationships were found. In short, the categories 3, 4, and 5 showed a clear association with one or more GKS categories.

In conclusion, with the restraints of the Q-sort experiment bearing in mind -such as the forced-choice procedure and a small number of clinicians- consistent relationships were found between concepts of the GKS and axis V.

Table 3. Results of the Q-sort experiment (N=32)

Cat. GKS[1]	Cohesion		Express.		Norms		Organis.		Control		Conflict		Int.-cult.		Act-recr.		Achiev.	
Axis V[1]	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%
0.0 No sign. distortion	74	17.8	99	23.8	37	14.5	62	19.4	43	9.6	89	25.3	8	12.5	40	25.0	96	33.3
1. Abn. intrafam. rel. ship	**144**	**34.6**	86	20.7	17	6.6	16	5.0	4	0.9	99	28.1	-	-	-	-	11	3.8
1.0 Lack of warmth	54	13.0	38	9.1	2	0.8	-	-	1	0.2	7	2.0	-	-	-	-	1	0.3
1.1 Intrafam. discord adults	18	4.3	21	5.0	-	-	6	1.9	-	-	29	8.2	-	-	-	-	1	0.3
1.2 Hostility/scapeg. child	-	-	-	-	-	-	-	-	-	-	25	7.1	-	-	-	-	-	-
1.8 Other	72	17.3	27	6.5	15	5.9	10	3.1	3	0.7	38	10.8	-	-	-	-	9	3.1
3. Inadeq. communication	72	17.3	**181**	**43.5**	24	9.4	31	9.7	23	5.1	**115**	**32.7**	1	1.6	-	-	12	4.2
4. Abn. qualit. upbringing	105	25.2	41	9.9	**171**	**66.8**	**166**	**51.9**	**368**	**82.1**	46	13.1	-	-	31	19.4	**163**	**56.6**
4.0 Parent. overprotect.	27	6.5	7	1.7	10	3.9	-	-	33	7.4	1	0.3	-	-	1	0.6	7	2.4
4.1 Inadeq.parent.superv.	19	4.6	3	0.7	84	32.8	101	31.6	257	57.4	28	8.0	-	-	1	0.6	8	2.8
4.2 Experient. privation	20	4.8	15	3.6	24	9.4	18	5.6	40	8.9	3	0.9	-	-	25	15.6	25	8.7
4.3 Parent. pressures	9	2.2	1	0.2	7	2.7	-	-	11	2.5	1	0.3	-	-	-	-	62	21.5
4.8 Other	30	7.2	15	3.6	46	18.0	47	14.7	27	6.0	13	3.7	-	-	4	2.5	61	21.2
5. Abn. immediate. envir.	21	5.0	9	2.2	7	2.7	45	14.1	10	2.2	3	0.9	**55**	**85.9**	**89**	**55.6**	6	2.1
5.2 Isolated family	11	2.6	7	1.7	1	0.4	-	-	-	-	-	-	51	79.9	84	52.5	-	-
5.3 Liv. cond., hazardous	7	1.7	2	0.5	6	2.3	39	12.2	10	2.2	3	0.9	-	-	2	1.3	5	1.7
5.8 Other	3	0.7	-	-	-	-	6	1.9	-	-	-	-	4	6.3	3	1.9	1	0.3
Total[2]	416	100	416	100	256	100	320	100	448	100	352	100	64	100	160	100	288	100

[1] Most labels of axis V and of the GKS subscales are abbreviated;

[2] The total number of items of the various columns are not always the same, because not every subscale consisted of an equal number of cards in our experiment.

CONCLUDING REMARKS

The purpose of this study was to assess the interrater reliability of axis V in daily practice, and to assess whether there were conceptual relationships, as perceived by clinicians, between axis V and a family questionnaire (GKS). The main results show that the reliability of axis

V is not sufficient. As an explanation for these findings, some merits of the "in vivo" design and factors inherent in axis V have been considered. From a stringent methodological point of view, we have tested the reliability under "Siberian circumstances", that is, in ordinary daily practice. Our design represents realistic, but far-from-ideal circumstances, such as a lack of control over confounding factors. This puts our results into a certain perspective. The special "post hoc" analyses we performed in order to study the influence of certain confounding factors, offer the opportunity to get a more differentiating impression of our "in vivo" results. These extensive analyses will be published elsewhere. With regard to axis V, it seems likely that this instrument is too specific to be applied adequately in normal day-to-day use. With respect to further research on this topic, it seems evident that the reliability of axis V needs to be improved. In particular, special attention has to be paid to the use of axis V in daily practice.

Another important conclusion from our study is that the Q-sort experiment revealed several consistent relationships between concepts covered by the GKS and axis V. These findings indicate that clinicians can make relationships on a conceptual level. The encouraging results argue for a more wide scale validity study of axis V, in which conceptual relationships will have to be investigated "in depth". This kind of research is currently being undertaken at our department.

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CHILD REARING AFTER I.V.F.

Frank van Balen[1]

A growing proportion of children in western countries are born after assisted reproduction or adopted from developing countries. Especially the number of children conceived via in-vitro fertilization (IVF) is increasing rapidly. It is estimated that nowadays approximately 1% of the firstborn children are conceived by IVF. This percentage is expected to increase even more because of the extension of medical indications for the application of IVF.

Psychological and social research about children, born after IVF has been focused on the development of the child. One study (Yovich, 1986) established a higher cognitive level by IVF-children. However, this could be related to the selection process for IVF in the first period of application of this technique. It is assumed that parents with a high level of development were the most likely candidates for such a scarce medical item as IVF was at the time. Other researcher did not find any statistically significant negative deviations in the mental and physical development of IVF children (Mushin et al., 1985: Mushin et al., 1986; Raoul-Duval et al., 1993).

Another domain in which IVF children might differ from other children is the sphere of parent-child relationships. Little research has yet been done in this field. Both Golombok et al. (1993) and Weaver et al. (1993) report a high emotional involvement with the child and positive feelings towards the child among mothers who used assisted reproduction. Weaver et al. (1993) also reported more protective behaviour by IVF-parents, than by fertile parents. However, the results presented by Golombok et al. concern a pilot-study. Weaver et al. do not discern between the effect of infertility and the (added) effect of the IVF technique. Also, the IVF-parents, in the study by Weaver, were a special group, being the first in the area to have access to this new technique. The present article describes a study about child rearing after in-vitro fertilization. This study was undertaken at the time that IVF was already an established procedure in the area. To account for the influence of infertility itself, a comparison was made with initially infertile parents not using IVF.

Assumptions

There are various assumptions and expectations about child rearing after IVF. Sometimes these assumptions are raised in the scientific press, sometimes in the popular press. Most of times they bear a negative connotation. The assumptions do receive attention in the media and may influence the public image of IVF-children. Three assumptions will be discussed in this chapter. Some of these assumptions may also be applicable in some degree, regarding formerly infertile parents in general. Also, the assumptions and speculations are not always clearly defined. However, there are a few concepts that more or less fit to these three supposed effects.

First, some popular authors describe the children conceived by long-standing infertile parents as excessively desired or over-desired. The parents of these 'over-desired' children are supposed to have exaggerated expectations with respect to their child. Also they might consider their child as 'better' than other children. This assumption has been particularly

[1]The author wishes to thank Trudy Trimbos-Kemper, Nico Naaktgeboren, Janneke Paulsema, and Nicky van Wely.

put forward by critics of modern reproduction methods. The concepts level of parental educational objectives and parental evaluation of the development of the child, will be used to investigate this assumption.

Second, infertile couples cannot control their reproduction. This may diminish their sense of internal control (Mahlstedt, 1985). When they finally have a child they might think, that they have little influence concerning the child rearing and development of their child. The concept of beliefs about determinants of child development will be used to analyse this speculation.

Third, long-standing infertile parents might consider their child as a very precious gift (a wonder, a blessing, the first prize in the lottery), more precious than the rest of the parents consider their children. This might lead to over-protection: an assumption that has already been put forward by the psychoanalyst Levy (1970). The concept of child rearing, especially the aspects of parental emotional involvement and parental concern will be used to investigate this assumption.

These aspects will be analysed in a comparative study between IVF-parents, other formerly infertile parents and fertile parents.

METHOD

Research population

The research population consists of initially long-standing infertile couples, having had a child via IVF or without IVF. More specified it concerns heterosexual couples with a child genetically 'their own'. Long-standing infertility is defined as a minimal duration of four years between the couples' first attempts to have a child and the birth of their first child. The families are composed of: mother, father and one child aged two to four.

Research procedure

The patients' files of the IVF clinic of the University Hospital in Leyden (AZL) were used to select the IVF group. The other group of long-standing infertile couples (without IVF) were also selected from the AZL (general infertility clinic) files. A control group was selected from the surroundings (of the University Hospital in Leyden). This control group was composed of parents that did not have any infertility problems, and it was selected from the files of two obstetric practices in the neighbourhood of the hospital.

Before the survey a pilot study was carried out which involved five couples from each group. The survey was carried out in the period between June 1993 and December 1993. A written questionnaire with an enclosed letter signed by the doctor concerned was sent to the respondents. A reminder was sent to those who did not react to the first mailing. The questionnaire consisted of closed and open-ended questions. Partners were explicitly asked to fill out their questionnaires separately, without consulting each other.

Response

Questionnaires were sent to 65 IVF-couples, 67 formerly infertile couples without IVF and 100 fertile couples. The response was: IVF group: 45 women (69%) and 40 men (62%), otherwise infertile: 35 women (52%) and 33 men (49%), and fertile couples: 35 women (35%) and 28 men (28%).

Considerable differences were found among the response-rates of the three groups. The

survey consisted of an extensive questionnaire which contained a great deal of personal questions. Only, a sole reminder was sent to those who had not reacted to the first mailing. The response percentage (40%) was normal for this research method (Heberlein & Baumgartner, 1978; de Leeuw & Hox, 1985). The response obtained from the IVF group was obviously higher than the rest (almost 70% of the couples), which might be regarded as a 'courtesy effect': a feeling of obligation inducing these couples to do something in return (for the medical assistance they had received). The response obtained from the initially infertile group (no IVF) was approximately 50%. Presumably we cannot talk about a 'courtesy effect' as far as the normal fertile couples are concerned as they just received the standard assistance. Therefore, their response was the lowest: (35% of the couples), which is acceptable for this kind of surveys.

Description of the research group

The mean age of the IVF mothers at the birth of their child was 33.3 (fathers: 34.5 years). For the initially infertile mothers (without IVF) the mean age was 31.6 (fathers: 34.6). For the normal fertile parents the mean age at the birth of their child was significantly lower: mothers 27.6 years ($p<.001$), fathers 30.9 years ($p<.001$). The age of the child at the time of our survey did not differ significantly: 33 months for the IVF group, 36 months for the initially infertile group, and 35 months for the normal fertile group. The proportion between boys and girls also did not differ significantly: 54% girls in the IVF group, 50% girls in the initially infertile group and 54% girls in the normal fertile group.

To judge their representativeness, the three groups were compared to each other on three sociocultural aspects. No significant differences were found regarding the participation in employment, religious convictions and educational level (chi^2-test).

Analysis

Both the IVF-group and the other formerly infertile parents are obviously, at the moment of the birth of their child much older than fertile parents. However, parental age may influence certain aspects of the parent-child relation (Ragozin, Bashan, Crnik, Greenberg & Robinson, 1982; Daniels & Weingarten, 1982; Robinson, Olmstedt, Garner & Gare, 1982; Morris, 1988). Therefore, in the analysis is controled for age differences. Furthermore, the gender of the child may influence various aspects of the parent-child relation. The proportion of girls and boys in the three groups was not exactly identical. Therefore, in the analysis is also controled for child gender. First bivariate analysis was done. Thereafter an analysis of variance with parental age and child gender as covariates was carried out.

INSTRUMENTS

Hox (1988) developed an instrument to measure parental educational objectives. This instrument consists of 26 statements. Each statement must be assessed within a range from one to ten. In this study the statements were grouped into subscales by using factoranalysis. Four clusters of educational objectives were discerned: these are called: (1) love and happiness (2) tolerance (3) material success and (4) individual development. Examples of the statements are: 'to give and receive love' (love and happiness), 'to be tolerant of others' (tolerance), 'to know how to deal with money' (material success), and 'to develop oneself' (individual development). Reliability of these subscales was as follows: love and

happiness (eight items): α .84; material success (seven items): α .84; individual development (eight items): α .66 and tolerance (three items): α .67. None of the subscales consisted of an item with item-scale correlation <.30.

Parental evaluation about the development of their child was measured by one question about the physical development and one question about the cognitive development. Each question had a 3-point answering range with the following values (3) faster than normal, (2) normal, (1) slower than normal.

Concerning the parental beliefs about the determinants of child development the following procedure was used. Parents were asked to indicate what part of the development of their child is determined by the genetic makeup of their child, what part by the parents themselves, what part by schooling (kindergarten, primary school, etcetera) and what part by peers. The total of these four categories had to be 100%.

To measure child rearing the Child Rearing Practices Report (CRPR), Dutch version, (Block, 1965; Dekovic, 1991a) was used. The items have an answering width ranging from one (completely disagree) to six (completely agree). The validity of the CRPR was judged as good. However, the instrument contains too many subscales with a moderate and low reliability (Dekovic et al., 1991). Different researchers classified the subscales based on factor analysis (Dekovic, 1991b). Our factor analysis of the CRPR resulted in the scale 'emotional involvement' consisting of the subscales 'enjoyment of parental role' and 'open expression of affect', and the scale 'parental concern' consisting of the subscales 'protectiveness of child', 'over-investment in child' and 'parental worry about child'. Examples of statements are "I joke and play with my child" (emotional involvement) "I try to keep my child from playing rough games or doing things where he might get hurt" (concern). The reliability of these subscales was acceptable: emotional involvement (nine items): α .65 and parental concern (eleven items) α .64.

RESULTS

Educational objectives

There are no significant differences among the three groups regarding the educational objectives: love and happiness, tolerance and material success. Concerning individual development there seems to be a significant difference between both groups of formerly infertile women and fertile women. The formerly infertile women judge individual development of their child as a more important issue than the fertile women (t: 2.13; p <. 036). However, further analysis showed, that age is also an important significant (r .23; p <. 05) variable in this respect. 'Older' mothers in the sample judge the individual development of their child as more important than 'younger' mothers. The formerly infertile mothers are older than the fertile mothers. Therefore, they also score high, because of their older age. If we control age, no significant difference was found between the groups concerning individual development. Also, if age is controlled concerning infertility-history there remained no significant difference. Both factors (age and infertility) were only significant when their effects combined. For the males there were no significant differences among the three groups concerning the four clusters of educational objectives (see table 1).

Table 1 Educational goals

	IVF-group	Other Inf.	Fertile	sign.
women				
love and happiness	8.9	9.0	9.0	ns
material succes	7.6	7.8	7.6	ns
indiv. development	8.3	8.3	7.9	.036*
tolerance	7.9	8.0	7.9	ns
men				
love and happiness	8.8	8.6	8.6	ns
material succes	7.6	7.7	7.4	ns
inidv. development	8.2	8.1	7.9	ns
tolerance	7.6	7.7	7.7	ns

* IVF-group and other initially infertile group compared with fertile group. In analysis of variance with age and gender of child as covariates no significant difference remained.

Level of physical and cognitive development

There were no significant differences among the groups. In all three groups, children were rated a little over normal regarding cognitive and physical development (see table 2).

Table 2 Evaluation advancement child development

	IVF-group	Other Inf.	Fertile	sign.
women				
physical	2.16	2.17	2.26	ns
cognitive	2.35	2.34	2.37	ns
men				
physical	2.18	2.18	2.25	ns
cognitive	2.26	2.30	2.50	ns

Beliefs about determinants of child development

Concerning the beliefs about the determinants of child development, the answers of the men and the women were about the same. All three groups (the IVF-group, the formerly infertile group and the fertile group) attributed about 40% of the development of their child to its biological background. The part of the development parents attributed to their own influence is for all groups a little under 40%. The influence attributed to the school system and the peers was both about 10%. (see table 3). There were no significant differences among the groups concerning the perceived importance of any of these determinants of child-development.

Table 3 Beliefs about the determinants of child development

	IVF-group	Other Inf.	Fertile	sign.
women				
genetics	43%	40%	40%	ns
parents	35%	37%	38%	ns
school	12%	14%	13%	ns
peers	10%	10%	10%	ns
men				
genetics	40%	44%	40%	ns
parents	34%	31%	36%	ns
school	13%	16%	13%	ns
peers	11%	9%	11%	ns

Child rearing

Two dimensions of child rearing were analysed: parental emotional involvement and parental concern. On the 'emotional involvement' dimension a significant difference appeared between IVF mothers and initially infertile mothers on the one hand, and normal fertile mothers, on the other hand ($p < .011$). The first two groups appeared to experience more pleasure in their child and reported that they expressed their feelings towards the child more strongly compared to the third one. Further analysis including the age of the mother and the gender of the child as covariates continued to indicate this relation as a significant one ($p < .001$). No significant differences were found on parental concern (see table 4). No significant differences appeared in the fathers' groups, on the two dimensions.

Table 4 Child rearing

	IVF-group	Other inf.	Fertile	sign.
women				
involvement	5.4	5.5	5.2	.011*
concern	2.8	2.9	2.9	ns
men				
involvement	5.2	5.2	5.1	ns
concern	2.9	2.8	2.8	ns

* Significant difference between the IVF group and the initially infertile group on the one hand, and the normal fertile group on the other hand.

DISCUSSION

Concerning the negative aspects of child rearing after IVF, no confirmation was found in this study. There appeared to be no difference regarding the beliefs about the determinants of child-development. Furthermore the children were rated as cognitive and physical equal to other children. Also, there were no differences regarding the educational objectives love

and happiness, material success and tolerance. At first sight it appeared that IVF and other formerly infertile mothers evaluated the individual development of their child as a more important objective, than fertile mothers. However, this relation was also a result of the generally older age of initially infertile mothers compared with fertile mothers. It appeared that older mothers regard individual development as a more important educational goal, than younger mothers. Both factors (age and infertility) together contributed to a higher parental importance concerning the individual development of the child.

In this study there appeared no higher degree of parental concern (subscales: protectiveness, over-investment and worry) about the child. This is in contradiction to the study of Weaver et al. (1993). A reason for this difference might be that IVF-couples already anticipate to the label of being overprotective by showing less protectiveness and concern. However, the results showed an interesting difference regarding the mothers. This difference, however, can be interpreted as positive rather than negative. IVF mothers and other initially infertile mothers report more emotional involvement in their relation with their child. They indicate more enjoyment in the parental role and a more open expression of feelings towards the child than the rest of the mothers. This finding confirms the results of the studies of Golombok et al. (1993) and Weaver et al. (1993).

It is interesting that there were no significant differences among the fathers. This may be related to the fact that "the world of the child" is more the domain of the mother than of the father. Also, it has been found that women are more negatively affected by the experience of infertility than their husbands (Van Balen en Trimbos-Kemper, 1993).

All the similarities and differences described in this article are based on the self-reports provided by the parents. Although the scales are considered reliable and valid, there is always a possibility that an objective observer might come to different conclusions. However, we can conclude that, on certain points, parents experience their educational situation differently. It is probable that this also influences their educational behaviour.

Another point of attention is the strong variation in the response percentage. As mentioned before this may have to do with a courtesy-effect. It is not excluded that this may lead to different answering-patterns. However, there appeared to be no significant sociocultural differences in the composition of the three investigated groups.

For the moment, the results did not prove to be so bad for IVF parents and other initially infertile parents. A difference has, indeed, been found but it cannot be described as negative; it rather appears that the parent-child relation is more emotional involved in case of IVF.

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COUNSELLING RECIPIENTS FOR OOCYTE DONATION

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Oocyte donation (i.e. donation of female reproductive cells) is a technique which has been made possible as a result of In Vitro Fertilisation (IVF). In fact, oocyte donation is an IVF-treatment that involves two women: the donor and the woman who wishes to be pregnant. The treatment provides an answer for infertile women with ovarian problems, such as premature ovarian failure, or for women who wish to avoid transmitting an inherited disease.

In a way, oocyte or ovum donation is similar to sperm donation insofar as both techniques involve the donation of gametes (reproductive cells). However, donating oocytes, in contrast to sperm donation, involves very serious medical treatment for the donor, covering ovarian stimulation and the transvaginal pick-up of the mature oocytes under local anaesthesia. Understandably, not many women are willing to donate anonymously. Most fertility centres, therefore, are confronted with a shortage of donor oocytes. In the literature, different groups of possible ovum donors are suggested. Infertile women, for example, might be asked to donate some oocytes while undergoing their own IVF-treatment. For obvious reasons however, such women wish to maximise their chances of pregnancy by using a significant number of their own oocytes. Furthermore, this attitude is reinforced by the possibility of successful cryopreservation (freezing) of human embryos because now embryos can be stored for the patient's own future use.

Another group of potential donors is women requesting sterilisation. In the Epworth Hospital in Australia (Leeton et al, 1986), approximately 100 fertile women asking for sterilisation were counselled about the possibility of donating 'eggs' during the laparoscopic procedure (during which a fiber optic instrument is inserted through a small abdominal incision). Only ten women agreed to donate and seven oocytes were retrieved in this procedure without hormonal stimulation. Hormonal stimulation is considered a burden by most women. In most fertility centres, therefore, this group of women is a very limited source of donor oocytes.

Consequently, it is unrealistic to expect that voluntary donation by women undergoing tubal ligation (surgical repair of tubal blockage) or IVF-treatment will provide a sufficient number of donor oocytes. In order to avoid a long waiting period, the Fertility Centre of the Free University of Brussels, suggests that couples in need of donor oocytes search for a donor among relatives and friends. In this procedure, recipient couples can choose between two alternative types of donation.

First, there is a procedure which Raoul-Duval et al. have called "Personalised anonymity" (1992). Each recipient couple comes with a donor but the oocytes from the donor are assigned to another recipient couple who in return will provide the oocytes from their donor to the first couple. This exchange is arranged by the fertility centre in such a manner that the recipient couples have no contact with the donor couples and anonymity is guaranteed.

Secondly there is 'known donation', where recipient couples can opt for treatment with the oocytes of their own donor. Whereas in the first procedure the origin of the oocytes is anonymous, in the second procedure the recipient couple will of course know the origin of the genetic material.

All couples requesting oocyte donation in our fertility centre are counselled by a psychologist. The aim of the counselling is not to enforce certain decisions but to guide the decision-making process as regards the kind of donation to be used. Attention is also paid to possible psychological consequences related to this decision.

Although this counselling is proposed in order to help recipient couples, it provides an interesting amount of information on the choices that the recipient couples make and their motivations to do so. It gives us an answer to such questions as : How many recipient couples chose to be treated with anonymous oocytes and, consequently, how many opted to use known oocytes? How were these choices motivated? Whom did recipient couples ask to be the donor? Why did they ask a particular woman to donate? Furthermore, we looked for an answer to the question of whether or not the treatment is kept secret from the social environment and why it is kept secret. Additionally, we wanted to know if recipient couples intend to inform the child about the treatment. Since recipient couples are seen together with their donors, this also provides useful information, such as the way donors relate to the recipient couples and their motivation in donating.

MATERIALS AND METHOD

From 1992 to August 1994, fifty couples asked to be considered for oocyte donation. The aim of the counselling is to support recipient couples in making the right decisions. It is therefore, limited to the use of a semi-structured interview in order to gather data. This open-ended questionnaire consists of two parts. The first part concerns the recipient couple and involves such points as:

- general information: birth date, marital status, nationality, duration of the relationship, number of children, profession, family of origin,
- the history of infertility: medical reasons for oocyte donation, the duration of the fertility problem, have the recipient couples had other fertility treatments,
- the way in which the recipient couples decided to apply for this treatment: how were they informed about the treatment, to whom did they talk about it, to whom did they look for emotional support, did they take other alternatives to resolve their childlessness into consideration,
- attitudes towards the donation: did they inform their social environment about the fertility problem in general, about this treatment in particular, do they intend to inform their child,
- attitudes towards the donor: the relationship with the donor, how and when did they ask, how did they decide on the way the donation should take place, why did they make this choice, are there other women whom they could ask to donate,

The second part involves questions for the donor:

- general information: birth date, marital status, nationality, duration of the relationship, number of children, profession, family of origin,...
- did they take any part in the decision as to how the donation should take place, why do they want to donate, would they consider donating for other couples too, did they confer with their partners, the recipient couples, did they inform anyone about the donation,

All answers are noted and coded in order to perform a statistical analysis. Some of the results of this research are presented here.

RESULTS

Demographic Data

The average age of the women wishing to become pregnant was 32.66 years (sd. 6.05) while the average age of their partners was 33.80 (sd. 7.23). The mean duration of the relationship of the recipient couples was 6,5 years (sd. 4.48). Eighty-six percent of the recipient couples were married and the others were cohabiting. Seventy-six percent of the couples had no children. In 14 % of the cases, one of the partners had children from a previous relationship. Ten percent of the couples had had children in the same relationship, meaning that the fertility problem had appeared after the birth of one or more children.

Although 68 % of the recipient couples had Belgian nationality, 76% of the couples lived in Belgium: 8 % of the recipient couples were immigrants from southern European countries. Twenty-four percent of the couples were foreigners living in their own country. The countries involved were The Netherlands (14%), Germany (8%) and Sweden (2%).

On average, the 44 donors were 2 years younger than the recipient women (mean age 30.20, sd. 5.06). Almost half the donors were younger than 30. Eighty-two percent of the donors had a partner relationship and in 75 % of the cases the donor had children of her own: 21% had 1 child, 27% had 2 children and 27% had three children or more. Sixty-four percent of the donors had no wish to have (more) children.

Medical reasons for oocyte donation

The main medical reason for requesting oocyte donation was premature ovarian failure (42%). A hereditary condition was the second most important reason (20%). Other medical reasons were Turner syndrome (6%), surgical removal of the ovaries (14%) and recurrent failure of IVF-treatment (14%).

For 48% of the couples, this was the first treatment, while 14 % had previously had donor oocytes or a donor embryo transferred. The others had previously had other fertility treatments (IVF, IVF with donor sperm, hormonal treatment, Artificial Insemination,...)

Status of the donor

Six couples requesting oocyte donation (12%) did not look for a donor themselves. Five of them did not know a woman whom they could ask to be the donor. One couple was too afraid that the treatment would then not be kept secret. These couples preferred an anonymous donor even where they had to wait longer before the treatment could start.

Forty-four recipient couples (88%) found a donor themselves. In 5 cases there was no personal bond between the donor and recipient couple. Here the donor was contacted through the intermediary of a sibling or friend or found through advertising (10%). However, the majority of the donors were friends (28%) or sisters of the wife (22%). Other donors were sisters-in-law (12%), sisters of the husband (10%) or cousins (4%).

In 58 % of the cases there was frequent contact between the donor and the recipient couple before treatment, which would probably also last after the treatment. Twenty percent of the recipient couples had little contact with the donor couples and neither sides had any intention of keeping up more contact after the child was born.

In general, we can state that most donors were informed about the recipient's fertility problems before oocyte donation was mentioned and that they had a very close relationship with the recipient couple.

Six donors had themselves been treated for infertility problems (AID and IVF). Two were currently undergoing IVF-treatment.

Motivation of the donor

Fifty-nine percent of the donors were motivated by the personal relationship that they had with the recipients. They wanted to help the couple personally.

In all other cases (41%), donors had a more generally altruistic motivation. For instance, they wished to help the recipient couple but, if asked, they would consider undergoing treatment for other couples too. Other donors considered infertility a very traumatic experience for anyone who has to deal with it. In these cases the personal bond with the recipient couple, if any, was important, but not the main reason for helping them.

There was a significant relationship between the status of the donor and the motivation of the donor ($c2=7,72$, $df=2$, $p<0,05$). Where donors were sisters of the infertile couple the motivation of the donor was based upon this personal relationship. If donors were friends, they were motivated by more generally altruistic considerations

Fifty-six percent of the donors mentioned spontaneously that they made a distinction between the oocyte donated and the child born afterwards. They almost always compared this to the regular monthly loss of oocytes. In their view, the woman who carries the child is the mother. There is no wish to interfere with the education of the child or to take any responsibility towards the child at all.

In 28 % of the cases there was no clear-cut distinction between the oocyte and the child. For this reason 14 % of the donors wished at all costs to avoid contact with the child. For these donors, the "personalised anonymity" procedure was a condition of going on with the treatment, in order to protect themselves. The others had ambivalent feelings towards the child born after oocyte donation. They wished to be sure that the child was well taken care of by the parents. Eight percent of them even felt a sense of responsibility towards the child born from their genetic material to such an extent that they wished to know the parents of the child.

"Known donation" versus the "personalised anonymity" procedure

Twenty-two out of the 44 couples who themselves looked for a donor opted for known donation. Fifty-nine percent of these couples motivated this choice from fear of the unknown origin of genetic material. In almost 41% of the cases, the second reason was also related to this fear of anonymity in such a way that these couples mentioned the trust they had in the personality of the donor.

In 5 cases the physical resemblance between the donor and the recipient was another reason for choosing known donation. Four of these donors were genetically related to the recipient woman.

The other half of the recipient couples who looked for a donor themselves opted for the "personalised anonymity" procedure. Three recipient couples had no choice since the donor was a sister of the husband. In 77% of the cases this choice was motivated by a wish to mark explicit boundaries between the two families. Moreover 41 % of the recipients wished to ensure their independence as much as possible. Six couples wished to avoid fantasies and future questions from the child about the donor.

This choice for anonymous or known oocytes was made by the recipient couple without pressure from the donor. For instance, there was no significant relationship between the status of the donor and the decision made by the recipient couple on the use of either

anonymous or known oocytes (c2=2,33, df=2, p<0,05). Recipient couples who asked a sibling to donate did not opt significantly more often for known donation. Neither was there a significant relation between the motivation of the donor and the decision of the recipient couple to use known donation or not (c2=1,50, df=1, p<0,05). Whether or not the donor helped from a personal or a more generally altruistic reason did not influence the recipient couple's option on the way the donation should take place.

Secrecy

What will recipient couples tell their social environment and, consequently, what will they tell the child born after oocyte donation?

Forty-two percent of the recipient couples informed no-one but the donor about the treatment. Thirty-two percent of the couples requesting oocyte donation wanted to keep the treatment secret but informed at least one relative or close friend. The most important reason for secrecy was fear of lack of understanding from the social environment (59%). Secondly, couples wished to avoid confusion in the social environment as to the identity of the mother of the child (35%).

Twenty-six percent of the recipient couples did not keep their infertility problem secret. Only 15% of these couples assumed there was nothing to be ashamed of and, consequently, no reason to keep the treatment secret. In the majority of the cases however, the reason for being overt about the treatment was that the social environment already knew about the fertility problem or about the fact that there was a possible hereditary condition. When a healthy baby was born into these families, questions from the social environment were inevitable.

The choice to keep the treatment secret from the social environment was not significantly influenced by motivation of the donor (c2=0,13 df=2, p<0,05) or the status of the donor (c2=6,35 df=4, p<0,05).

However, the decision on whether to inform the social environment or to keep the oocyte donation secret was significantly related to the way in which the donation was to be organised (c2=6,91 df=4, p<0,05). Known donation tended to be kept secret from the social environment, significantly more than the "personalised anonymity" procedure.

Before treatment, 56% of the recipient couples decided not to inform the child while 36 % were willing to inform the child born after treatment. Half of the couples choosing to withhold this information from the child were afraid that it might disturb the mother-child relationship. However, the most important reason was fear of disturbing the normal development of the child, for instance because the child might be perceived as "special" (71%). In only three cases was rivalry with the donor mentioned as one of the reasons for keeping the treatment secret.

Most of the couples intending to inform their child (36%) are more or less forced to tell the truth. Their three main reasons were:
(1) they wish to assure their child that there is no hereditary risk (in 5 cases), (2) too many people know about the fertility problem and the risk that the child might learn about the treatment from someone else is considered important (in 3 cases) and (3) because they will have to explain a racial difference (in 2 cases).

Only 5 couples saw no reason for keeping the treatment secret from the child. These future parents did not wish to have secrets from their child. They thought that having the child in this way only confirmed to the child how much it was wanted although conception would of necessity take place with genetic material from a donor.

The other couples (8%) preferred not to withhold this information from their child but were still not very sure. Often this reflected uncertainty about when and how to tell the child.

There was no significant relationship between the decision of the parents as to whether or not to keep the treatment secret and the status of the donor ($c2=2,06$ $df=4$, $p<0,05$), the donor's motivation ($c2=3,07$, $df=2$, $p<0,05$) and the way in which the donation was to be organised ($c2=3,03$, $df=2$, $p<0,05$). This decision is considered to be the responsibility of the recipient couple.

DISCUSSION

Fifty couples requesting oocyte donation were counselled between 1992 and 1994 in the Fertility Centre of the Free University of Brussels. In spite of a longer waiting period, six couples still preferred an anonymous donor. Eighty-eight percent of the couples looked for a donor themselves in order to start treatment sooner. Half of them opted for known donation (44%), the others decided on the "personalised anonymity" procedure (44%). In his research Kirkland et al. (1992) also found 44% of the recipient couples willing to accept an oocyte from a known donor, although in his research only 3 out of 60 donations were known.

Research on attitudes regarding the use of siblings for gamete donation (Sauer et al., 1988) showed a significant difference between couples requesting oocyte donation and couples in need for Artificial Insemination with Donor Sperm (AID). The acceptability of using a sister for oocyte donation is much higher than the acceptability of a brother as a sperm donor. Moreover, most couples in need of oocyte donation had already approached a sister to obtain her permission and 61% had secured such an agreement.

In our research, 22% of the donors were sisters of the wife. An additional 10% of the donors were sisters of the husband. The largest group (28%) of the donors were friends of the recipients.

Fifty-nine percent of the donors wished to help the recipient couple from a personal involvement, whereas the motivation of 41 % of the donors was more generally altruistic. As might be expected, there was a significant relationship between the status of the donor and the motivation of the donor. Where donors were siblings of the infertile couple, the motivation of the donor was based on that personal relationship. If donors were friends they were motivated by more generally altruistic reasons.

Previous research (Leeton & Harman, 1987) showed that there were no differences in social characteristics and attitudes towards donating oocytes between donors who donated anonymously and donors who donated to known recipients, except that the known donor group felt significantly greater connection to the potential child.

Fifty-six percent of the donors in our research felt that they should not interfere in any way with the child born from their genetic material. However, the others had more ambivalent feelings. For this reason 14% of the donors wished to avoid all contact with the child in order to protect themselves. On the other hand, this ambivalence made others wish to be reassured about the parents of the potential child and 8 % even wished to know the parents personally.

Since there was no significant relationship between the status of the donor, the motivation of the donor and the decision made by the recipient couple on the use of either

anonymous or known oocytes, we assume that these choices are made by the recipient couple independently and without pressure from the donor. Almost all donors also made a statements tending to support this assumption. We have the impression that the decision to use known or anonymous oocytes is rather an intuitive choice based on two different and more or less opposite motivations. Known donation is motivated mainly by reasons related to fear of anonymity. Marking explicit boundaries between the two families involved in the treatment and fear of interference from the donor motivates couples to choose a "personalised anonymity" procedure.

Nevertheless couples who themselves search for a donor could be related in a very dependent way to their donor, especially where they opt for known donation. For this reason Raoul-Duval et al. (1992) stated that the anonymity alleviates the debt of the recipient couple to the donor and enables them to construct their own parental status. Furthermore, anonymity protects the child from a potentially harmful multiple-parent situation. It is in order to avoid such negative consequences that she favours the personalised anonymity procedure, although in her research all recipient couples perceived their offspring as undoubtedly theirs. According to Raoul-Duval et al. (1992) pregnancy, childbirth and early mother-infant bonding make children born after oocyte donation the true offspring of the women bearing them. This is confirmed in research done by Kirkland et al. (1992), where both donors and recipients considered gestational parentage more important than genetic parentage. Still, 90% of the recipient couples were against the child contacting the donor later in life. Forty-six percent of the donors objected to contact with the child. Kirkland et al. (1992) consider this discrepancy between donor's and recipient's attitudes as to whether or not the child should be allowed to contact the donor to be a problem. Since approximately 50% of the recipients in his research would inform their children of the treatment, this could lead to a potential conflict if the child should wish to know the donor.

Concerning the information to be given to the child born after oocyte donation, 56 % of the recipient couples in our research intend to keep the treatment secret, while 36% of the couples decided before the treatment started that they intend to tell their child. This latest percentage is lower than the above percentage found by Kirkland et al. (1992).

Moreover, in our research there was no significant relation between the decision of parents as to whether or not to keep the treatment secret from the child and the status of the donor, the donor's motivation and the way in which the donation was to be organised. Most couples opted for secrecy from a fear of disturbing normal development in their child. The decision to withhold the information from the child or not is considered to be the responsibility of the recipient couple. A similar result was found by Leeton & Harman (1987). Although the majority of the known donors in this investigation were undecided whether or not the child should be told about their identity, all of them considered that this decision should be left to the child's parents.

The majority of the couples counselled in our centre are more or less keeping the treatment secret from their social environment. This decision was considered to be the responsibility of the couple requesting oocyte donation. This choice was not significantly influenced by motivation of the donor or the status of the donor.

The decision on whether to inform the social environment or to keep the oocyte donation secret, was significantly related to the way in which the donation was to be organised. Known donation tended to be kept secret from the social environment signifi-

cantly more than the "personalised anonymity" procedure. In cases where known donation was chosen, most recipient women feared confusion about who would be considered the "real" mother by the social environment. In all cases where the treatment was kept secret, the anticipated negative reaction from the social environment was the main reason for doing so.

The results of this investigation are based on the original choices made by couples requesting oocyte donation. In our research, the decision of the recipient couples to use known or anonymous oocytes seems not to be influenced by the status or motivation of the donor. Moreover, the decisions made by the recipient as regards attitudes towards the treatment and the question of secrecy are hardly affected by the donor, the donor's motivation and/or the donor's relation to the recipient couple, whether a known donation or not. Almost all donors agreed that all decisions concerning such points should be made by the parents of the child.

Nevertheless, as regards "the best interests of the child", many questions still remain unanswered. All couples in this research are very well aware of the potential risks involved in their decisions. Trying to evaluate these risks and choosing the right solutions to any problems they might have to face in childrearing practice is not easy. Counselling of each request is therefore considered indispensable.

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TWO MOTHER FAMILIES: A FOLLOW UP STUDY OF LESBIAN WOMEN WHO CONCEIVED AFTER DONOR INSEMINATION

Anne Brewaeys

Artificial insemination with donorsperm is since many years a widespread practice for heterosexual couples in which the male partner appears to be subfertile.

The number of lesbian couples visiting Fertility Centers in order to fulfil their childwish is increasing during the last decade. These initially unexpected Fertility Clinic attenders solicited a whole range of controversial reactions in the medical staff, in the ethical commitees and in the public opinion of several countries.

These newly created families have a number of specific characteristics who will influence the family relations and the psychological development of the child: an anonymous donor was used in order to conceive, the family unit consists of two mothers with no father available, both mothers have a homosexual orientation. This paper will present the results of our study investigating the most important features of this family structure:

The use of anonymous donors has recently been subject of public discussions in several countries. In literature,three major views are apparent. The first view, mostly subscribed to by medical practitioners, pleads for complete anonymity (Kremer, 1991; British Andrology Society, 1993; Bierkens, 1992). The donor' s role must be minimal and complete distance between donors and recipients must be guaranteed. Nevertheless, several authors warn against the negative influence of deceiving children from their origins (Clamar, 1989; Glover, 1989; McWhinnie, 1986). A second view is cited in the report of the Warnock Commitee of Enquiry into Human Fertilisation and Embryology (Warnock, 1986): the recommendation is made 'that the child should be able to obtain non identifying information on the ethnic origins and genetic health of the donor'. A third view claims that a child has the right to know who it is descended from and pleads for registration of the donor's identity . Witholding such important information would create identity problems in the young adult(McWhinnie, 1986; Van Kampen et al., 1990; Meerum Terwocht, 1991; Back & Snowdon, 1988). None of these conclusions however, is based on the findings of empirical follow-up studies of donor children and their families.

The controversy about donor anonymity cannot be solved as long as most of the recipient couples choose to keep the use of a donor secret. Studies in several countries have similar results: 80-95% of the interviewed parents wish to keep their child's origin secret in an attempt to protect both husband and child (Edelman, 1989; Bolton et al., 1991). There have been recent moves to reduce secrecy. Nowadays most medical practitionners discuss with their patients the issue of whether or not to tell the child's method of conception. This tendency has been inspired by the experience of workers in the field of adoption, who concluded after long term research that it is better to tell a child about its adoption at a early developmental stage. As there are generally accepted stories to explain adoption while none exist for donor-children, one could expect more uncertainties in the latter group.

In the group of homosexual parents, where there is no father-figure available, parents intend to be open about the use of a donor (Brewaeys et al., 1993). This gives us the opportunity to analyze parent's cognitive and emotional representations of a donor: What

do they intend to tell their children and when? At the time of their application at the Fertility Clinic, all semen donors were anonymous and applicants had no choice. We wanted to know their view on donor anonymity and therefore asked them which alternative they would have chosen if the following possibilities would have been available: the donor remains anonymous, non identifying information is available, the donor's identity is registered.

Several psychological theories have stressed the negative influence of **father absence.** The most common argument is that the developing child needs a male identification model.

Empirical research concerning the issue of father-absence is mostly carried out in single-mother-families, not in two-mother family units. Moreover most of the studies treated fatherless families as a homogeneous category: variables such as the lenght of time the father had been absent, the economic circumstances in which the mother had to raise a family, the existence of a substitute father, are missing in the data (Stevenson & Black, 1988). There is also an important difference between the studies mentioned above and our study-group: In the former all children were born in a heterosexual household, they all have or had a father and went through the divorce of their parents. Our study-group consists of children who were born in a lesbian household with no biological father available. In these lesbian households, there is a second mother-figure right from the start. This parental role is new and has no social or legal status.

In this study, the position of the biological mother's partner, the 'social mother', was analysed and attitudes towards father absence were registered.

Literature on **homosexual parenthood** has been primarly concerned with the possible negative influence of homosexuality on the psychosexual development of children. Lesbian mothers would present disturbed gender models (Falk, 1989). Results of comparative studies between lesbian mothers and heterosexual single mothers are remarkably unanimous concerning the psychosexual development of these children. No differences have been found in gender identity development (Green et al., 1986; Golombok et al., 1983; Kirkpatrick et al., 1981), sexe role development (Gottman, 1990) and sexual orientation (Huggins, 1989). However, most of these studies were conducted on children and young adolescents.

Another assumption concerning homosexual parenthood is that the negative social labeling of homosexuality would disturb the emotional and social development of children (Falk, 1989). Research conducted in this field could not affirm this statement: Golombok found that the incidence of emotional problems in children from lesbian mothers was not higher than in the control groups (Golombok et al., 1983). In the study of Green no differences were found in the social development of these children (Green et al., 1986). Huggins studied self concept among adolescent offspring of lesbian and heterosexual mothers and found no significant differences (Huggins, 1989). A particular shortcoming of these studies is that most of them compare lesbian mothers with heterosexual single mothers. It will be important for further research to use control groups of two headed heterosexual families.

The sparse research who studied differences between lesbian families found some interesting conclusions: The psychological well being of the mother is higher when she is open about her lesbian identity with family, friends and colleagues (Rand et al., 1982). Self-esteem of these children seems to be higher when significant others have positive attitudes towards their mother's life-style (Huggins, 1989). Children seem to deal better with

issues raised by having a lesbian mother when they learn about her homosexual orientation in early childhood rather than in adolescence (Huggins, 1989).

As a consequence of these findings we investigated how these women presented their lesbian couple towards their family of origin, friends and collegues. We also asked when and how they intended to inform their children about their homosexuality?

MATERIALS AND METHODS

Materials

All lesbian couples who entered the Donor Insemination Program at the Centre of Reproductive Medicine (Vrije Universiteit Brussel) between 1986 and 1990 were asked to take part in a longitudinal study of lesbian families. Data were collected at three different moments: 1)at the start of the inseminations, 2)between the child's first and second year of age, 3)between the child's fourth an sixth year of age.

In this paper,the data collected between the child's first and second birthday will be presented. Results of the first data-collection were published elsewhere (Brewaeys et al., 1989, 1991). Information from children older then four will not be reported yet since this group of children remains too small (n=16).

The number of couples participating to this interview was 50 (100 women). The respons rate was 100%.

Methods

Parents were interviewed at home. The used questionnaire was constructed after several open ended interviews. The questionnaire solicited information on the following issues:

1. The social background of the mothers
2. The allocation of parental roles between the biological mother and her partner:
   - their concept about the two mothe family unit
   - the division of educational and caring tasks such as: feeding, playing, bathing, changing nappies, waking at night..
   - the division of professional activities
3. Their attitudes towards father absence
4. Their attitudes towards donor anonymity:
   Subjects were aksed to choose between three possibilities, "If they would have had the choice, would they have opted for a) the donor remains anonymous- b) non identifying information of the donor is available- c) the identity of the donor is registered".
5. What did they intend to tell about their lesbian identity to their children and others?

RESULTS

Demographic features

The mean age of the women at the birth of their first child was 32 years. Of them 52% had finished higher education, 32% secundary education. All except three were professionally active. Partnerships had a mean duration of 8 years when their first child was born.

The use of an anonymous donor

Donor anonymity

Parent's views on donor anonymity were questionned: If parents would have had the oportunity to choose, 56% would have opted for the registration of the identity of the donor by the sperm bank, 28% would still choose for complete anonymity and 16% would have wanted non identifying information. In the first group, 36% reported that their attitudes had changed over the years: At first they chose an anonymous donor simply to avoid interference by a third person within their partnerrelationship. Later, the child's point of view became more apparent.

To the question wether they expected their children to ask questions about the donor in later life, all said yes. The group chosing for identity registration believed that knowing who the donor was, could help their children. The group chosing for donor anonymity did not think that this knowledge would solve any problem.

information revealed to children and others:

Lesbian Parents were also asked what they intended to tell their **children** and when. As there was no social father within the family, all would reveal the use of an anonymous donor in an early stage of development. Uncertainty existed about the concept of the donor: all agreed that he was no father for their children. They had tried to reduce the donor to an anonymous sperm cell on the one hand but on the other hand they could simply not deny that the sperm cell was donated by a person: All parents had wondered wether certain characteristics of their children could be heridited from the donor's side. All parents who applied for a following child (n=26), had wanted to use the same donor.

Uncertainty also existed about when to give the children which kind of information. In a first stage they would tell a story along the lines of 'we both wanted children but as we are two ladies we went to a doctor to ask him for some seeds'. Providing information in a later developmental stage appeared to be more difficult: How would the children react when they were able to realize that "the seeds belonged to an unknown man"?

Where the lesbian parent's **social network** was concerned, all family and close friends were informed about the use of a donor, 64% had told **collegues**.

Two mothers

The family concept:

The two mother family unit was conceived as follows: 39% made no difference at all between the biological and the social mother, parental roles were identical. 61% thought that a child could only have one biological mother, the mother's partner had a different role but educational responsibilities were equal and shared.

The division of tasks:

The daily practice showed that educational and caring activities were equally shared in 54% of the families. The biological mother took the load in 40% of the couples, the social mother did in 6% of the cases. The time spent on professional activitities was equal in 46% of the cases, the social mother took the load in 46% of the families, the biological mother in 6% of the couples.

Information revealed to child and others:
In all cases it should be clear for *the children* that the family unit consisted of two parents. In 60% of the families the child gave names to both women reflecting equal mothering positions (mammy -mummy). In 40% of the couples, the biological mother received a name with the meaning of 'mother', the social mother used her first name or a nickname. *Family and friends* had accepted the two mother family unit in 96% of the cases. For two couples it was easier to present them as a single headed family because of the negative attitudes towards lesbian relations. In their *professional* lives 86% of the couples were open about their shared parenthood. All couples reported that reactions from the ouside world to the birth of their children were more positive then they had previously expected.

Father absence
All mothers wanted their children to know that they had no father but two mothers.
For 20% of the couples, the absence ot a father had been their major concern at the time of their choice for donor insemination. These women had searched for a known donor before entering the Donor Insemination Program. They expected that the absence of such a relationship could create problems in their children's life. The remaining 80% believed that the parenting qualities of the women was of greater importance then their gender, they did not expect difficulties as a result of the absence of a father. For all couples the presence of male-models in the environment of their children was indispensible. Most of them had found men between their family-members or friends who were prepared to build up a relationship with their child. Only 17% of these women had mainly lesbian friends.

Homosexual identity
All couples wanted their **children** to know that there was a loving relationship between them and that they had both wanted children. Of them, 86% would reveal their lesbian identity. In 14% of the couples reluctancy existed to use the word 'lesbians' because of its pejorative connotation, they would not define their relationship as such.

How open were these women about their lesbian identity with significant others? 82% could be open about their lesbian relationship with **family and friends**. In 18% of the cases, the partner was identified as an intimate friend without labeling the relationship as lesbian. In all cases the partner could participate in family reunions.
In their **professional** lives, 30% of the women disclosed their lesbian identity, the remaining 70% decided not to because of their awareness of intollerant atitudes towards homosexuality.

DISCUSSION

More than half of the lesbian mothers would have liked the identity of the donor to be registered. Of them, 36% reported that their attitudes had changed over the years: At first they chose an anonymous donor simply to avoid interference by a third person within their partnerrelationship. Later, the child's point of view became more apparent. This seems to suggest that if parents intended to tell that their children were conceived by means of donor insemination, the need for identifying information about the donor became more apparent.

However, being open about the use of a donor created uncertainties about his positition in the family. The mother's concept of the donor revealed some ambivalencies: On the one hand they excluded him from the family life by reducing him to an anonymous sperm cell. On the other hand they visualized him by attributing him features they had observed in their children and by using the same donor for a following pregnancy.

Children's reactions to the knowledge that they were conceived by means of donor insemination are still unknown. The child's cognitive and emotional representation of the donor will be influenced by the way in which their parents handle the subject. It is therefore indispensable to follow these children up to an adult age. Within a public context, where the plead for openness and identity registration of the donor becomes stronger and stronger, results of empirical studies are badly needed.

Our data confirmed that these families were 'two headed': both women had an important intimate relationship with the child. The social mother's educational and caring activities did not differ from those of the biological mother in more then half of the cases. The concept concerning this new parental role differed: biological and social mother were not identical for 61% of the couples, the remaining 39% made no difference at all between the two roles. However,the position of the social mother remains vulnerable: while her emotional investment in her family is strong, her ties with the children and the biological mother are juridically unexisting. In case of separation from, or dead of the biological mother, she has no legal rights to continue her relationship with the children.

For the majority of couples (80%), father absence was not their major concern. Children would be told that they had no father but two mothers. Nobody wanted to allocate this role to the donor. The presence of male models was important for all mothers. When children are over 4 years of age, this investigation is still ongoing: at that time the family concept of the children is analyzed: how do the children fill in the new parental role, how do they deal with father absence. This knowledge will have to contribute to future understanding of these new family structures.

The mother's homosexuality was the most difficult subject to introduce to the children: 14% would not define their relation as lesbian while nobody hesitated to reveal the use of a donor and to present a two mother family unit. The same trend was perceived in the presentation of their family to the social environment). Striking was that only 30% revealed their lesbianism towards collegues while most of them talked openly about the birth of their children and the way in which they were conceived. The main reason for this secrecy was the taboe on homosexuality. Coping with this homophobia will be one of the future challenges of these mothers and their children.

The majority of couples lived in an environment of family and friends who accepted the main features of their family structure. All had regular contacts with their families of origin. Their children will grow up in an immediate social network with positive attitudes towards their family. Characteristic for the group under study is also the high educational level of the mothers and the stability of their relationships. A combination of these factors may have enhanced their explicit desire for children.

Within the actual social context where homosexual parenthood is still a controversial issue, these families have a pioneering role. The specific features of this new form of parenthood are challenging and will certainly require skilful parenting qualities. Long term follow-up studies of these families and their children are indispensable.

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