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Chapter 6

Effects of Child Care, Family, and Individual Characteristics on Children's Language Development: The Victoria Day Care Research Project

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IN THIS CHAPTER we report data drawn from a 2-year study of children, parents, and caregivers in licensed center care, licensed family day care, and unlicensed family day care. The chapter discusses the question of quality from several perspectives: characteristics of the child care provider, child care environment, and program; children's experiences in child care; and children's performance on standardized measures of language development and within the context of family background.

Our study was based on examination of structure and process variables in both child care and home environments. This perspective is supported by a number of studies that have documented the influence of family structure variables (i.e., maternal marital status, level of education, employment situation, income) and family process variables (mother-child interactions, parental stress factors, attitudes toward child care) on children's behavior and performance on developmental outcome measures (Bee et al., 1982; Hetherington, Cox, & Cox, 1979; Stuckey, McGhee, & Bell, 1982; Thompson, Lamb, & Estes, 1982).

In order to examine some of the relationships between family structure variables, child care setting, and children's performance on measures of expressive and receptive language development, Goelman and Pence (1987) compared children from high- and low-*resource* families. The data strongly suggested that children from low-resource families — that is, families headed by single mothers with low levels of education, occupation, and income — tended to be disproportionately enrolled in low quality family day care settings. Maternal marital status, occupation, and

education level contributed significantly to the children's scores on the Peabody Picture Vocabulary Test (PPVT) (Dunn, 1979) and the Expressive One-Word Picture Vocabulary Test (EOWPVT) (Gardner, 1979). The finding that children from low-resource families were overrepresented in lower quality family day care homes with less educated caregivers drew attention to the fact that the level of caregiver education was also a significant predictor of children's scores on these measures.

Family structure variables, therefore, appeared to be associated with both the children's performance on the measures of language development and the selection of child care settings. In this chapter we continue to examine these patterns by studying the relationship between indexes of child care quality, in terms of both the social structure of the child care environment and the children's daily experiences in this setting, and the children's performance on the two language measures used in this study.

Method

The Victoria Day Care Research Project was conducted from 1983 to 1985 with children, parents, and caregivers in licensed child care centers, licensed family day care homes, and unlicensed family day care homes. The study took place in Victoria, the capital of British Columbia, which has a metropolitan area population of approximately 250,000. (Please consult Goelman & Pence, 1985, 1987; or Pence, Charlesworth, & Goelman, 1986 for detailed information on the design, methodology, and subject pool in this study.) A total of 105 child-parent-caregiver triads participated in this study. The children were in care for approximately 30 hours per week while their mothers were working, looking for work, or studying. The study included approximately equal numbers of boys and girls who were either first born or only children and were drawn from approximately equal numbers of one- and two-parent families. (See Table 6-1 for a breakdown of the subject pool.) No significant differences existed between the groups on such characteristics as levels of parental education, occupation, and income; and ages at which the children entered child care (see Table 6-2). As in Clarke-Stewart's work (1981, 1986), the mean age of children in center care (50.5 months) was higher than the mean age of children in licensed family day care (38.8) and unlicensed family day care (39.8), largely due to the fact that most child care centers in Victoria did not enroll children younger than age 3.

There were three major components of the study: outcome measures, observations, and interviews (see Figure 6-1). The PPVT and EOWPVT

Table 6-1. **Numbers of Parent, Child, and Caregiver Participants in the Victoria Day Care Research Project**

	Parents and children					
	One-parent		Two-parent			
	Boys	Girls	Boys	Girls	Total	Caregivers
Center child care	14	13	15	11	53	25
Licensed family day care	4	7	7	9	27	24
Unlicensed family day care	7	7	6	5	25	25
Total	25	27	28	25	105	74

Table 6-2. **Background Information on Subject Pool in the Victoria Day Care Research Project**

	Licensed family day care		Unlicensed family day care		Center child care	
	Mean	SD	Mean	SD	Mean	SD
Age of child	38.81	10.16	39.78	11.41	50.56	4.37[a]
Age began care[b]	17.94	11.20	16.46	11.68	19.30	12.58
Total time in care[b]	20.86	12.25	23.81	11.98	31.26	14.24[a]
Time in current care[b]	12.28	11.35	13.81	11.80	13.18	4.95
Hours mother works/week	34.33	6.79	33.38	7.19	36.34	8.56
Mother's age (years)	28.52	5.57	28.51	3.52	30.32	4.20
Mother's educational level[c]	3.50	1.28	3.65	1.42	3.96	1.34
Mother's income level[d]	3.05	1.25	3.22	1.40	3.30	1.60
Mother's job level[e]	3.28	1.07	3.20	1.54	3.34	1.10
Partner's educational level[c]	3.55	1.39	3.38	1.32	4.75	1.45[a]
Partner's income level[d]	5.10	1.62	4.42	1.55	5.09	1.78
Partner's job level[e]	3.09	1.60	3.33	1.34	3.29	1.51

[a] CDC > LFDC, UFDC $p < .001$ (one way ANOVA)

[b] All child-related variables are in months.

[c] Education level scale: 1 = grade school, 2 = some high school, 3 = high school graduate, 4 = some junior college or technical school, 5 = junior college graduate, 6 = university graduate.

[d] Income level scale: 1 = less than $5,000, 2 = $5,000–$8,999, 3 = $9,000–$14,999, 4 = $15,000–$19,999, 5 = $20,000–$24,999, 6 = $25,000–$29,999, 7 = $30,000 and more.

[e] Based on modified Blishen scale.

were administered to the children on three different occasions at 6-month intervals. The parents and caregivers participated in structured 1-hour interviews covering a wide range of topics including family background, employment history, education, child care needs, and attitudes toward current child care arrangements. The results of the interviews are found in Pence and Goelman (1986, 1987, in press).

The observations were conducted using two types of instruments. To assess quality aspects of the structure of the child care setting, we used parallel rating forms designed for center and family day care environments: the Early Childhood Environment Rating Scale (ECERS) (Harms & Clifford, 1980) and the Day Care Home Environment Rating Scale (DCHERS) (Harms, Clifford, & Padan-Belkin, 1983). These scales consist

Figure 6-1. **Research Components in the Victoria Day Care Project**

Outcome measures
- Peabody Picture Vocabulary Test
- Expressive One-Word Picture Vocabulary Test
- Preschool Interpersonal Problem Solving Test (PIPS)
- Child questionnaire

Observation components
- The Early Childhood Environment Rating Scale
- Child Observation Form
- Caregiver Post-Impression Form
- Child Post-Impression Form

Parent questionnaire
- Child care history and research
- Present child care arrangement and focal child
- Parent's perception of the caregiver
- Opinions on working mothers
- Parent's satisfaction with arrangement
- Child management situations
- Personal job history

Caregiver questionnaire
- Caregiver's history
- Supply of and/or search for children
- Caregiver's perception of the parent and child
- Caregiver's perception of the child care environment and the child
- Caregiver's satisfaction with the child care arrangement
- Child management situations
- Caregiver's family background, work history, and health

of more than 30 discrete items clustered in a number of subscales and yield a total rating score as well. The items are rated on a 1 to 7 point scale and cover such areas as space and furnishings, learning materials, and social development.

The Child Observation Form (COF) (Goelman, 1983), a time and event sampling instrument, was used to observe child care centers (Ruopp, Travers, Glantz, & Coelen, 1979) and family day care homes (Stallings & Porter, 1980). The form allowed observers to record children's play partners and the types of activities in which they were engaged. Observers who had passed a training program and achieved an 85% level of interrater reliability observed children for 5-second windows. The focal children were observed on 2 different days within a 10-day period for a total of 6 hours of observation. The COF was used for 1 hour during morning free play periods on both observation days. These observations generated more than 240 windows of spontaneous play of children in their child care setting. The respective rating scales (ECERS and DCHERS) were completed at the conclusion of the 6 hours of observation.

Results

In this section data will be presented on the characteristics of the child care providers, the structure of the child care settings, and the children's family backgrounds; the nature of the children's experiences in child care; and the relationship of these variables to the children's performance on the standardized measures of language development.

From the information gathered during the caregiver interview (see Pence & Goelman, in press, for a detailed report on these data), a number of distinctive characteristics of the three groups of caregivers emerged. Differences cited regarding these data were all significant to the .05 level using z tests for independent proportions. While 100% of the center child care workers reported having formal training in early childhood education (a legal prerequisite), significantly fewer licensed (29.2%) and unlicensed (22.2%) family day care caregivers had formal training. Conversely, significantly more licensed (95.8%) and unlicensed (92.6%) family day care caregivers reported experience as a parent than the center workers (52%). Further, significantly more licensed (95.8%) and unlicensed (92.6%) family day care caregivers reported experience as "caregivers to other children" than the center workers (60%).

When asked questions regarding their work and future career plans, the groups of child care providers continued to show pronounced differences.

Both center and licensed family day care providers reported levels of job satisfaction significantly higher than their unlicensed family day care counterparts.

Both center and licensed family day care providers reported levels of job satisfaction significantly higher than their unlicensed family day care counterparts. A significantly higher proportion of unlicensed (51.9%) than licensed (16.6%) family day care providers reported that they would prefer other employment. In terms of their reasons for providing care, significantly more licensed (92.3%) than unlicensed (72.7%) family day care providers indicated that they enjoyed being with children. Conversely, significantly more unlicensed (36.4%) than licensed (10.3%) family day care providers said they were in child care because it provided a playmate for their own children. When the unlicensed family day care providers were asked about the type of work they would prefer to be doing, only 7.4% indicated child care; 14.8% cited "child-oriented" work; while 29.6% reported a preference for "non-child-oriented" work.

What was the quality of the 25 centers, 24 licensed family day care homes and 25 unlicensed family day cay care homes who participated in this study? A preliminary answer to this question is found in the subscale and total scores generated by the ECERS and DCHERS. These scores were seen as indexes of aspects of the structure of the child care settings by rating such characteristics as the quantity, quality, availability, and accessibility of various materials and furnishings.

Although the ECERS and the DCHERS were similar in construction, their differences in specific items and scoring criteria prohibited direct statistical comparisons between the center and family day care environments (see Table 6-3). Nonetheless, the mean scores do provide a general context for the consideration of the quality of these settings. The unlicensed family day care settings, for example, scored as high as 3 (i.e., minimal) on only one subscale and had consistently lower scores than the licensed family day care and center settings on every subscale as well as for the total. Similarly, the licensed family day care settings consistently scored lower than the center settings.

In order to address the question of quality in terms of the children's experiences in care, analyses of variance were performed on the children's activities as recorded on the Child Observation Forms (COF). As shown in Table 6-4, the children in unlicensed family day care engaged in solitary play significantly more than children in center programs. The children in both types of family day care engaged in parallel play significantly more than the children in centers. The children in centers were observed in cooperative play significantly more than children in family day care settings.

Table 6-3. **Subscale and Total Scores for ECERS and DCHERS in 3 Types of Child Care***

	Licensed family day care	Unlicensed family day care	Center child care
Space and furnishings	3.55	2.97	4.8
Basic care	3.24	2.78	4.8
Language	3.36	2.78	4.4
Learning	3.57	3.06	4.8
Social development	3.02	2.40	4.31
Adult needs	4.03	2.42	4.0
Total	3.35	2.82	4.62

* 1 = Poor, 3 = Minimal, 5 = Good, 7 = Excellent.

Table 6-4. **Number of Episodes of Types of Play in Child Observations in Licensed Family Day Care, Unlicensed Family Day Care, and Center Child Care**

	Licensed family day care	Unlicensed family day care	Center child care	F	$p<$
Solitary	6.82	10.63	6.64	3.79	.025
Parallel	51.03	47.34	37.71	7.02	.001
Cooperative	42.14	42.02	55.63	8.83	.001
Pair	35.75	28.55	16.55	9.22	.001
Group	49.63	43.79	72.15	15.97	.001

There were great similarities across the three types of care in some of the children's play activities and striking differences in others. For example, no significant differences were found in the total number of play episodes observed on reading (avg. 8.2%), gross motor (avg. 10.1%), structured fine motor (avg. 10.3%), art and music (avg. 16.6%), conversation (avg. 19.9%), and dramatic play (avg. 21%).

The two major differences that emerged were in the use of television and the frequency of interactions coded as *information.* Children in unlicensed family day care were observed viewing educational television more frequently (7.6% of the time) than children in either licensed family day care (3.7%) or center programs (.01%) ($F = 11.65$, $p < .001$). Further, children in unlicensed family day care were observed watching noneducational television more frequently (2.7%) than children in licensed family

The unlicensed family day care settings were consistently lower than the licensed family day care and center settings on every subscale as well as the total score.

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day care (1.3%) and center programs (where it was never observed). These data confirm the caregivers' reports of the frequency of television watching. When asked whether the focal child ever watched television while in care, significantly fewer center workers (16.7%) answered affirmatively than did the licensed (76.9%) and unlicensed (79.9%) family day care providers.

Information activities are those interactions, not necessarily in the context of formal instruction, where specific informational content is conveyed from the caregiver to the children. This interaction was originally so labeled by Wells (1975) in a taxonomy of adult-child discourse functions. McCartney (1984) included the category in her analyses of adult-child interactions in child care centers and found this interaction to be a significant and positive predictor of children's scores on the PPVT. In this study, children in center programs were observed in *informational* exchanges significantly more frequently (9.4%) than children in either unlicensed (5.1%) or licensed (3.4%) family day care ($F = 7.89$, $p < .001$). These results, together with McCartney's, are examined in greater detail in the final section of this chapter.

We conducted correlational analyses on the ECERS and the DCHERS and the children's activities as recorded on the COF. The only activity segment that correlated with either rating scale was *information*. This activity correlated positively and significantly ($p < .05$) with the DCHERS subscales on learning (.36), social development (.41), language development (.46), and total score (.44) and with the ECERS subscales on language (.33), learning (.35), social development (.28), and total score (.27).

To this point the analyses focused primarily on examining the quality of the child care settings in terms of their structure and process characteristics and on considering the relationships between the characteristics. The next step was to examine the relationships between these indexes and the children's performances on developmental outcome measures.

The children's PPVT and EOWPVT scores correlated with aspects of the family day care settings but not with those in the center environments. The PPVT correlated significantly ($p < .05$) with the DCHERS subscale on social development (.51) and the total rating score (.33). The EOWPVT correlated with the total score (.32) and the subscales on learning materials (.33) and social development (.48). These findings were extended by subsequent regression analyses that demonstrated that, while the DCHERS total rating scores predicted approximately 14% of the variance on the PPVT ($p < .05$) and 13% of the variance on the EOWPVT ($p < .01$), the ECERS scores did not. No correlations were found between the

frequency of the children's play activities in either the center or family day care settings and the children's performance on the outcome measures.

A series of 3 (type of care) $\times$ 2 (one-parent/two-parent families) analyses on the EOWPVT revealed significant differences ($F = 3.11$, $p < .04$) between the scores of the children in unlicensed (98.6) and licensed (109.3) family day care and center programs (107.3). No significant differences were found in the mean scores of children from the two types of family structure. The results on the PPVT were consistent with those on the EOWPVT. The differences between the mean scores of the children in unlicensed family day care (93.4) and both licensed family day care (101.1) and center day care (101.2) resulted in a main effect approaching significance ($F = 2.29$, $p < .10$). The differences between the scores of children in two-parent families (102.1) and one-parent families (96.3) also approached significance ($F = 3.54$, $p < .06$).

Taken together, the data presented to this point suggest possible relationships between aspects of child care structure and process, child care structure and developmental outcomes, and family structure and developmental outcomes. Using the quantitative inferential, correlational, and regression analyses as reference points, we conducted subsequent data analyses to achieve a more qualitative examination of the relationships between child care structure, child care process, and children's performance on the two measures of language development.

Computer searches were conducted to identify those centers and family day care homes that, on the basis of their respective ECERS and DCHERS scores, were either one standard deviation above (high quality) or below (low quality) the mean scores for the settings in this study. After these had been identified, a wide range of data (including mean test scores and information on the daily activities of the children) was generated on the high and low quality center and family day care settings. Since assumptions of randomness could not be made due to the manner in which the high and low quality settings were selected, inferential tests and comparisons between the groups are not appropriate. The differences cited here, therefore, are treated as descriptive and illustrative only. As noted, however, this information both confirms the results yielded by the quantitative analyses previously cited and lends further depth and clarity to those findings.

As indicated in Table 6-5, there were few differences between the high and low quality center environments. While their mean ECERS scores did differ (206 vs. 143), the high ($n = 14$) and low ($n = 12$) quality center environments were quite similar on such items as mean scores on

Children in unlicensed family day care watched television more frequently than children in the other two types of programs.

Table 6-5. **Characteristics of High and Low Quality Family Day Care and Center Child Care Environments**

	High family day care	Low family day care	High center child care	Low center child care
Mean PPVT scores	98.42	83.30	99.21	104.21
Mean EOWPVT scores	109.03	86.63	107.00	107.25
Quality	134.93	69.63	206.00	143.25
Structured fine motor	10.34	6.60	7.27	14.03
Art, music	18.71	11.41	12.96	19.01
Dramatic play	14.53	28.70	19.14	26.74
Gross motor	16.84	6.43	13.65	9.03
Information	6.30	1.48	10.69	5.97
Reading	7.68	4.82	6.06	13.06
Educational TV	3.03	12.39	.00	.07
Non educational TV	.99	5.37	.00	.00

language development tests and style and type of play activity. This pattern suggests that, despite rating differences, the center environments were quite homogeneous and shared a rather narrow range of quality and variation. This would certainly be consistent with the absence of correlation and predictive power in the ECERS reported above.

In sharp contrast, the high and low quality family day care settings revealed distinct and largely predictable differences. (Of the 15 high quality homes, 13 were licensed; of the 11 low quality homes, only two were licensed.) Mean test scores on both the PPVT and EOWPVT were 15 to 23 points higher in the high quality home settings. Children in the high quality family day care programs engaged in more structured fine motor, art and music, gross motor, information, and reading activities than children in the low quality family day care programs. The categories for which higher frequencies were observed in the low quality family day care settings were participating in dramatic play and watching educational and noneducational television.

These results suggest that both type and quality of care interact with children's performance on standardized measures of language development. The following discussion considers these findings in the context of the previously reported results on the impact of family background variables on the children and in light of related studies that have examined these questions from similar theoretical and methodological perspectives.

Level of caregiver education was a significant predictor of the children's test performance.

Discussion

The results reported here replicate, complement, and extend those reported in other multimethodological studies of the impact of child care and family background variables on young children. No one single variable (i.e., type of care, structure, daily experiences, family background) sufficiently explained children's performance on measures of receptive and expressive language development. Rather, the data strongly suggested a complex interaction of child care structure and process variables within the contexts of family resources and the factors involved in the selection of child care settings by individual families.

Differences emerged among the three types of care in both structure and process variables. Centers were generally rated higher than both types of family day care homes for the total score and subscale scores on the rating scales of child care quality. Play and activity patterns differed: Higher frequencies of developmentally facilitative interactions were found in the two licensed forms of day care (informational) and higher frequencies of less facilitative experiences (solitary play, television watching) in the unlicensed family day care homes.

Quality of care in the family day care settings appeared to be much more variable, and a much more potent predictor of children's language development, than quality in the centers. Structural indexes of family day care quality were associated with the children's performances on measures of receptive and expressive language development. Level of caregiver education (higher in the licensed group) was also found to be a significant predictor of the children's performance on the tests used. Striking differences were found between the highest and lowest quality family day care homes along a number of dimensions, including mean test scores and children's involvement in developmentally facilitative activities.

These findings are largely consistent with those revealed in the Bermuda Study. Similar to results reported in McCartney's analyses of home and child care center influences on children's language development (McCartney, 1984; McCartney, Scarr, Phillips, Grajek, & Schwarz, 1982; Phillips, Scarr, & McCartney, this volume), our study found that

- maternal education level was a significant predictor of children's performance on the PPVT,
- the frequency of informational utterances by the child care teachers positively correlated with the overall quality of the settings, and

Children in unlicensed family day care were observed in solitary play significantly more frequently than children in licensed family day care and center settings.

- significant correlations existed between most of the subscale and total quality ratings on the ECERS.

While McCartney reported a direct relationship between the ECERS and PPVT scores, we did not find this for the centers in the Victoria Day Care Research Project. However, we did find this relationship between the rating scale scores and both the PPVT and EOWPVT scores for the family day care homes.

Like the Chicago Study (Clarke-Stewart, 1986; this volume), our study also found differences between the quality of child care structure in centers and in family day care homes. Similarly, both studies reported higher frequencies of informational teaching or verbal exchanges in the centers than in the family day care homes. Higher frequencies of TV watching were reported in the family day care homes than in the centers in both studies. While Clarke-Stewart found no differences on levels of cognitive development between the children in center and family day care, we found those differences in this study. This is more than likely due to the inclusion of children from a wider range of family backgrounds in a wider range of family day care settings in the Victoria study than in the Clarke-Stewart sample, which was drawn from a largely middle- to upper-class population consisting of all two-parent families.

Despite these differences in subject pool, other similarities between the results of the two studies stand out. For example, both studies report high correlations between quality of child care structure, level of caregiver education, and children's performance on measures of cognitive development. Clarke-Stewart's finding of positive correlations between test performance and caregiver-child reading episodes and negative correlations between test performance and frequencies of solitary play are also paralleled in the Victoria data. Children in higher quality family day care settings, with higher mean test scores, participated in more reading episodes than children in lower quality family day care settings. Further, the children who received the lowest mean test scores were those in unlicensed family day care settings, which received uniformly low quality ratings. Additionally, these children were observed in solitary play significantly more frequently than children in licensed family day care and center settings.

The inclusion of both center and family day care settings; a range of both good and poor environments within both types of care; and the use of observation, tests, and interviews have enhanced the generalizability of studies that have identified important structure and process variables within child care settings. Including children from a range of family

More developmentally facilitative play was found in licensed family day care and center programs.

backgrounds has yielded valuable information on some of the broader contextual factors within which the child care experiences are embedded.

It is of note and concern that a significant number of children in these studies appeared to have a "worst of both worlds" situation: They come from low-resource families and attend low quality family day care. This pattern suggests a kind of mirror image of the data reported by Carew's (1980) study of home and child care influences on children's development. Carew found that developmentally facilitative experiences in home and child care settings for middle-class children contribute to the children's successful performance on developmental outcome measures. In our study, it appears that the flip side of the coin may also be true in a more ominous sense. Children from homes characterized by lower levels of economic and educational resources attend family day care homes run by women with lower levels of training, interest, and commitment. These

Children who come from low resource families generally attend low quality family day care.

settings are generally rated as being of minimal quality in terms of the physical environment and the kinds of materials available to the children. The interactions, experiences, and activities the children had while in care were not considered to provide the optimal conditions for child development.

The data reported here strongly suggest that aspects of family structure, child care structure, and child care process have a strong effect upon the development of the young child. To further flesh out the ecological complexity of the family day care interface, this tripod of information needs to be bolstered by information regarding the nature of developmentally facilitative processes, interactions, and experiences within the child's home setting. Specifically, information on adult-child language interactions in a range of family backgrounds (i.e., Cross, Parmenter, Juchnowski, & Johnson, 1984; Tizard & Hughes, 1984) would greatly enhance the clarity of the findings revealed in this study. This information, from one of the major microsystems within which the child participates, is necessary but not sufficient to gain an understanding of the complex interaction of factors within and across the systemic levels of the ecology of child care.

The results of this study strongly suggest that further inquiry into the definition and effects of various levels of child care quality must consider not just the relationships between measurable characteristics of environments, activities, and outcomes, but also at least some of the broader socioeconomic factors that affect the delivery and availability of alternatives from which parents select their child care arrangements. Toward this end, research on the effects of child care must continue to focus on both the discrete pieces of the puzzle and the complex ways in which those pieces fit together.

References

Bee, H.L., Barnard, K.E., Eyres, S.J., Gray, L.A., Hammond, M.A., Apietz, A.L., Snyder, C., & Clark, B. (1982). Prediction of IQ and language skill from perinatal status, child performance, family characteristics, and mother-infant interaction. *Child Development, 53,* 1134–1156.

Carew, J.V. (1980). Experience and development of intelligence in young children at home and in day care. *Monographs of the Society for Research in Child Development, 45*(6–7, Serial No. 187).

Clarke-Stewart, K.A. (1981). Observation and experiment: Complementary strategies for studying day care and social development. In S. Kilmer (Ed.), *Advances in Early Education and Day Care* (Vol. 2) (pp. 227–250). Greenwich, CT: JAI Press.

Clarke-Stewart, K.A. (1986). Family day care: A home away from home? *Children's Environment Quarterly, 3*(1).

Cross, T., Parmenter, G., Juchnowski, M., & Johnson, G. (1984). Effects of day care experience on the formal and pragmatic development of young children. In C.L. Thew & C.E. Johnson (Eds.), *Proceedings of the Second International Congress for the Study of Child Language, Volume II.* New York: University Press of America.

Dunn, L.M. (1979). *Peabody Picture Vocabulary Test—Revised.* American Guidance Service, Publishers' Bldg., Circle Pines, MN 55014.

Gardner M.F. (1979). *Expressive One-Word Picture Vocabulary Test.* Novato, CA: Academic Therapy Publications.

Goelman, H. (1983). Manual for observing in day care centers and homes. Unpublished manuscript, University of British Columbia, Vancouver.

Goelman, H., & Pence, A.R. (1985). The ecology of day care in Canada: A research agenda for the 1980's. *Canadian Journal of Education, 10*(4), 323–344.

Goelman, H., & Pence, A.R. (1987). Some aspects of the relationships between family structure and child language development in three types of day care. In D.L. Peters & S. Kontos (Eds.), *Annual Advances in Applied Developmental Psychology, Volume II: Continuity and Discontinuity of Experience in Child Care* (pp. 129–146). Norwood, NJ: Ablex.

Harms, T., & Clifford, R. (1980). *The Early Childhood Environment Rating Scale.* New York: Teachers College Press, Columbia University.

Harms, T., Clifford, R., & Padan-Belkin, E. (1983). *The Day Care Home Environment Rating Scale.* Homebased Day Care Training Project, Frank Porter Graham Child Development Center, 500 NCNB Plaza, Chapel Hill, NC 27514.

Hetherington, E.M., Cox, M., & Cox, R. (1979). Play and social interaction in children following divorce. *Journal of Social Issues, 35*(4), 26–49.

McCartney, K. (1984). Effects of quality of day care environment on children's language development. *Developmental Psychology, 20*(2), 244–260.

McCartney, K., Scarr, S., Phillips, D., Grajek, S., & Schwarz, J.C. (1982). Environmental differences among day care centers and their effects on children's development. In E. Zigler & E. Gordon (Eds.), *Day care: Science and social policy issues.* Boston: Auburn House.

Pence, A.R., Charlesworth, M., & Goelman, H. (1986). Applying Bronfenbrenner's ecological model to a study of daycare in a Canadian city. *The Canadian Journal of Child Care, 10*(1 & 2), 107–114.

Pence, A.R., & Goelman, H. (1986). The Victoria Day Care Research Project: Initial descriptive data on parents. *Canadian Children, 10*(1 & 2), 115–124.

Pence, A.R., & Goelman, H. (1987). Silent partners: Parents of children in three types of day care. *Early Childhood Research Quarterly, 2*(2), 103–118.

Pence, A.R., & Goelman, H. (in press). Who cares for the child in day care? An examination of caregivers from three types of care. *Early Childhood Research Quarterly.*

Ruopp, R.R., Travers, J., Glantz, F., & Coelen, C. (1979). *Children at the center: Final report of the National Day Care Study.* Cambridge, MA: Abt Associates.

Stallings, J., & Porter, A. (1980). *Observation component of the National Day Care Home Study: Volume 3.* Washington, DC: U.S. Department of Health and Human Services.

Stuckey, M.F., McGhee, P.E., & Bell, N.J. (1982). Parent-child interaction: The influence of maternal employment. *Developmental Psychology, 18*(4), 635–644.

Thompson, R.A., Lamb, M.E., & Estes, D. (1982). Stability of infant-mother attachment and its relationship to changing life circumstances in an unselected middle-class sample. *Child Development, 53,* 144–148.

Tizard, B., & Hughes, M. (1984). *Young children learning: Talking and thinking at home and at school.* London: Fontana.

Wells, G. (1975). The context of children's language experiences. *Educational Review, 27,* 114–125.

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