

Concepts, Definitions and Operational Aspects

Part I
Design of Phase 1 of ÉLDEQ
Instruments and Procedures



1. Background to the Longitudinal Study of Child Development in Québec (ÉLDEQ 1998-2002)

1.1 Brief History of the Study

Québec, like the majority of industrialized nations, has seen a steep rise over the past two decades in the human and social costs related to the maladjustment of individuals to their environment. Among other consequences of this alarming state of affairs are child negligence, family violence and school dropouts, as well as suicide and drug use among adolescents. Over the past several years, costly short-term measures have been implemented to tackle these problems, but their success has been limited.

An initial solution to these problems, which pose a real threat to future generations, must involve not merely *REACTING TO* them and attempting to allay their consequences, but rather preventing their onset in young children. To do this we must provide support to activities and programs aimed at improving our understanding of social adjustment. To this end, a group of researchers in Québec – like their Canadian, American, New Zealander and English counterparts, to name only those few – launched a longitudinal study aimed at identifying the conditions that favour the development of children, that is, factors that will enable children to enjoy physical and mental health as well as personal well-being throughout their lives. The researchers adopted a biopsychosocial approach in order to define as thoroughly as possible the principal factors that enable children to adapt well to their environment.

1.2 ÉLDEQ and Other Longitudinal Studies Worldwide

ÉLDEQ, which was almost seven years in development, was created through the joint efforts of distinguished

Québec researchers and *Santé Québec*⁷. In 1988, several of these researchers were involved in the formation of cohorts in the United States and Europe⁸, and they realized that the time was ripe for the setting up of a first cohort in Québec. The researchers would be able to draw on the expertise available in other countries as well as on the growing expertise among researchers in Québec, and ÉLDEQ could profit from the surveys in Great Britain (Power, 1992; Wadsworth, 1987), New Zealand (McGee et al, 1991) and the United States (Werner & Smith, 1977) to avoid costly problems that could erupt at any point during a lengthy survey of this kind. In addition, the launch in the spring of 1994 of the Harvard cohorts (Harvard School of Public Health, Human Development and Criminal Behavior) and the National Longitudinal Study of Children and Youth (NLSCY, first Canadian cohort) meant that the data in the Québec study could be compared to those on children from Canada or other countries. Because of the richness of this international environment, the Québec researchers decided that the ÉLDEQ cohort had to be comparable and complementary to its predecessors.

1.3 Design of ÉLDEQ

In addition to providing a wealth of documentation on the determining factors of the problems identified above, ÉLDEQ gathers in-depth data on birth and early childhood, thus furthering scientific knowledge in this field. The majority of longitudinal studies on birth to adulthood do not provide continual observation of biopsychosocial development from the first to the fifth year of life (Power et al, 1991; Wadsworth, 1991; Werner

7 *Direction Santé Québec* was named *Santé Québec* before its integration on 1 April 1999 to the *Institut de la statistique du Québec*.

8 The National Longitudinal Study of Children and Youth (NLSCY Canada) had not yet been confirmed.

& Smith, 1977). The Québec study, however, focuses on the link between development in early childhood and adjustment at school entry, a key factor in a child's adaptation to the school system and, by extension, to adolescence (Ensminger et al, 1993; Tremblay et al, 1992; White et al, 1990).

The scientific value of a longitudinal study that collects anthropometric and biological data at birth and surveys on an annual basis thereafter the biopsychosocial well-being of the child is widely recognized. Studies in the United States and New Zealand that draw on longitudinal surveys and favour a multidisciplinary approach have shown that it is possible to identify strong indicators of the physical, mental and social health of individuals beginning in childhood. Barratt (1991), Caldwell and Bradley (1984), and Howes (1988) showed that parental characteristics, family environment, child care conditions and children's characteristics in preschool, to name only a few, are predictors of children's adaptation at school entry. In addition, studies such as Barker's (1992) have shown that prenatal and neonatal biological measures are strong predictors of health problems in the adults of tomorrow. However, the vast majority of these studies were limited as to the number of subjects or variables. ÉLDEQ 1998–2002, with its over 2,000 subjects, has among other goals to verify the link between biological characteristics at birth, temperament and later social adaptation as well as the links between the parents' conjugal history and the child's cognitive and socioaffective development. In other words, this study of individual adaptation to the environment has adopted an ontogenetic approach; it examines not only characteristics unique to childhood (biological, cognitive, emotional and social) but also characteristics of the child's physical and social environment (family, child care arrangements and friends). In terms of its contribution to basic research, ÉLDEQ aims to increase our knowledge of the precursors to adaptation to the school environment, the stages in this adaptation and the short- and long-term consequences of a child's failure to adapt.

2. ÉLDEQ, a Study in Partnership

The setting up of a study of this magnitude within the borders of Québec required the development of a new model of collaboration among a broad range of partners. First, sixteen researchers associated with seven different research groups – which were themselves linked to five Québec universities – drew up an ambitious research protocol with the support of provincial and federal agencies. Second, in association with *Santé Québec*, a protocol for a longitudinal survey was developed from that research. Note that, in this early stage of the project, *Santé Québec* was called the *Centre d'enquêtes du ministère de la Santé et des Services sociaux (MSSS)* (Surveys Centre, Ministry of Health and Social Services). A paragovernmental agency, its mandate was to conduct epidemiological, social and health surveys in Québec. *Santé Québec*, which from early on formed partnerships with the Québec universities involved in the ÉLDEQ survey, then found itself mandated to transform the research protocol to a survey protocol that would fulfill the objectives of the first cohort of infants in Québec.

The survey protocol having been rigorously pretested in 1996 (see next section) it was finalized and submitted to the *ministère de la Santé et des Services sociaux du Québec (MSSS)*. After this important milestone was passed, the scientific director of ÉLDEQ and *Santé Québec* received from the MSSS an 8-year grant providing exclusive financial support for all aspects of the annual data collection – whether related to data collection for the pretest or the ÉLDEQ survey, or to publication of the biannual reports. The MSSS's decision to provide ÉLDEQ with significant financial backing corresponded to its identification in the early 1990s of several needs in the population, as outlined in the 1992 *Politique de santé et du bien-être du Québec*, the recommendations of the *Rapport Bouchard* of 1991 and *Priorités nationales de santé publique* published in 1997–2002. They identified a longitudinal study on a cohort of children in Québec as an important research priority and an essential step in creating effective preventive activities and programs for them.

At the same time, the partners in ÉLDEQ launched discussions with the Special Surveys Division of Statistics Canada about the opening up to them – several already served as consultants to the NLSCY – of the data collection instruments assembled for that national Canadian study. These discussions lead to a bilateral collaboration between *Santé Québec* and Statistics Canada. Reflecting the Canadian experience, the ÉLDEQ study in Québec would use the research instruments of Statistics Canada (NLSCY) and, in return, the original instruments developed for ÉLDEQ would be made available to the NLSCY. This partnership resulted in the NLSCY study being nicknamed the "Mother Study."

2.1 From ÉLDEQ 1998–2002 to "In 2002... I'll Be 5 Years Old!"

In collaboration with the researchers, *Santé Québec* and the *Bureau de la statistique du Québec*⁹ drew up a preliminary protocol for the study and devised data collection tools that would meet a large majority of the research objectives. A pretest or pilot study based on the various elements was undertaken in the fall of 1996, and a detailed preliminary report was written and published the following year (*Santé Québec, Jetté et al, 1997*). The pretest, comprising 572 families from the greater Montréal region and Quebec City, was used by *Santé Québec* as the basis for its modifications to the initial protocol and the test instruments. The modifications were integral to the fine-tuning of the design for the survey and to ensuring that the budgets set for it could be met.

The modified protocol and instruments were then submitted to the ÉLDEQ Advisory Committee and Planning Committee as well as to the *Santé Québec* Ethics Committee. These three committees verified that

9. The *Bureau de la statistique du Québec* was the name of *Direction de la méthodologie et des enquêtes spéciales* (Methodology and Special Surveys Division) prior to its integration on 1 April 1999 to the *Institut de la statistique du Québec* (Québec Institute of Statistics).

the original objectives of the study would be achieved and that the new collection instruments were valid, from administrative as well as data collection perspectives. The committees also submitted the proposal to an ethics review. A final proposal and grant request were then submitted to the MSSS. The proposal outlined four rounds of data collection for the pretest and five for the study itself. These would take place between 1997 and 2002. In addition, it called for the publishing of three biannual reports on the study – one cross-sectional and two longitudinal reports – from 2000 to 2004¹⁰.

Santé Québec had never before conducted a longitudinal study, although it had initiated several important surveys between 1988 and 1997. For ÉLDEQ, *Santé Québec* decided to create several promotional tools to foster a positive "initial" contact with the families that would be interviewed annually for at least five years. Although it was anticipated that the acronym ÉLDEQ would become important to researchers and health and social service professionals in Québec, its appeal to Québec families might be limited. Another way had to be found to encourage their participation in the study. Thus, for 2,223 families in Québec, ÉLDEQ became "*En 2002... J'aurai 5 ans!*" (In 2002... I'll Be 5 Years Old!). A brochure explaining the study and a folder for storing documents about it were created as presentation items for the parents.

To encourage families to take part annually over the 5-year term of the study it was decided to: 1) plan an annual follow-up with the families; 2) compensate families with an annual \$20 payment for the time they devoted to the study; and 3) give all participating families a personalized souvenir album at the end of the first 5-year study period.

With respect to the annual follow-up, families are contacted three times throughout the year using various communication strategies. They receive: an annual letter

announcing an upcoming call from the survey firm to set up an appointment for the interview; spring and fall issues of the newsletter *Communiqués*, addressed to parents and providing them with information on studies of this type as well as the preliminary results of ÉLDEQ; and each year on the birthday of the child, he or she receives a birthday card from *Santé Québec*.

With each contact, the families also receive a change-of-address card. Thus, at least five times a year (including during the interview), the families are advised of the importance of informing *Santé Québec* of any upcoming move.

To date, the incentive of \$20 has generally been perceived as adequate compensation for the annual 2-hour interview. Some low-income families have even come to rely on it. However, we believe that the souvenir album, which will include personalized annual results for the child, has been the greatest incentive for retaining families in the study, especially because each year the parents are reminded that the folders are getting bigger!

2.2 The Terms of Reference and Collection Parameters of the Pretest and Survey

Once the essential components of ÉLDEQ were determined, the Terms of Reference were written. Subsequent to a public invitation to tender, the *Bureau d'interviewers professionnels (BIP)* was awarded the contract for data collection in the pretests and surveys. The Terms of Reference also served as the basis for the contract between this private-sector survey firm and *Direction Santé Québec* of the *Institut de la statistique du Québec (ISQ)*. The former outlines, among other things, all the rights and obligations of the two signatories of the contract as well as the rules for each step in the data collection process: preparation of the collection, recruitment and training of the interviewers, data collection, reception/verification and coding/processing of the instruments, as well as initial validation of the data files. Because ÉLDEQ includes a

10. For detailed information on ÉLDEQ 1998-2002 and the instruments used in the 1998 data collection wave, see Vol. 1, No. 1, of this collection.

computerized questionnaire, the Terms of Reference called for *BIP* to transmit by modem encrypted data on a weekly basis to *Santé Québec*. Finally, the Terms of Reference outlined in detail *Santé Québec*'s implication in and close supervision of the data collection process and related activities.

The collaboration between *BIP* and *Santé Québec* began, as in all surveys, with the recruiting of interviewers. The partners decided after the first pretest that only women (mothers) would be selected as interviewers in the annual survey of the infants' development. This was because some respondents in the pretest had expressed reticence about being interviewed by a man while alone with a 5-month-old baby. After the recruitment of about 30 interviewers in 14 regions of Québec, the partners worked on the data collection and follow-up instruments. These would, in effect, constitute a second annual collaboration between them. *Santé Québec* agreed to provide training related to all data collection and follow-up, given that it had conceived the instruments in collaboration with the researchers and it was charged with the production, publishing and translation, etc. of all related reports. *BIP*, on the other hand, assumed responsibility for several administrative instruments; for example, it is solely responsible for managing its staff.

In general, training took place only a few days before the start of data collection. This ensured that the newly acquired knowledge of the interviewers was rapidly put to use. *Santé Québec* implemented various quality control measures related to data collection; these included listening in ("fly-on-the wall") to calls placed to set up interviews or as quality control; on-site, unannounced validation of the coding of some of the paper-based instruments; examination of the results for bias due to interviewer input; follow-up on the computerized questionnaires and verification of the collection files, to name a few.

2.3 Data Management

During the collection phase of the survey, *BIP* regularly sends data to *Santé Québec*. Data collected from the questionnaires are transmitted weekly, thus ensuring stringent verification of the contents of this phase of the interview and continual coding by staff. In addition, every 2 weeks, the paper-based instruments coordinated by *Santé Québec* (consent form, computerized follow-up forms, authorization forms for medical records) or coded by its partners (result sheets of the psychometric tests), are gathered together and verified, as needed, before being redirected to the researchers. Halfway through the process, that is, after the first 3 months of the annual data collection, *BIP* transmits to *Santé Québec* the database comprising the results from approximately half the coded, verified and entered data from the paper questionnaires; a preliminary validation is also done on these data. After a second validation by the *Santé Québec* team, this partial data is made available to the researchers, who then begin their initial analyses for the biannual report¹¹. About 3 months after the end of each annual data collection, the final database is sent to *Santé Québec*. The complete database is once again validated. It is organized into files and derivative variables which are created so that all the different research teams may use the data.

It is important to note that for ÉLDEQ the data are never available simultaneously. The data taken from the medical reports and the psychometric tests require specialized analysis, which takes longer. Because of this, the 12 or 13 reports in Volume 1 of the ÉLDEQ collection were not issued together, but will be published over a 2-year period. Nonetheless, the first cross-sectional database includes 1,350 variables, of which 90 are derivative variables.

11. The mid-term databases are sent to the analysts only every 2 years because *Santé Québec* must prepare the biannual reports.

This ends our brief look at the background to ÉLDEQ. For more detailed information on this topic please consult Volume 1, Number 1, of the collection. The next section examines the themes (sources and justifications) and the questions and scales for the first data collection year of the longitudinal survey. The second part examines various factors related to measures, from data validation to the creation of derivative variables.

3. Sources and Justifications of Questions, Scales, Forms and Tests

This section describes the sources and justifications of the questions, scales in the questionnaires, and forms and tests used in the 1998 ÉLDEQ survey.

The instruments are discussed in the following order:

- 3.1 Computerized Questionnaire Completed by the Interviewer (CQCI), filled out by the person who best knows the child or the PMK (Person Most Knowledgeable);
- 3.2 Paper Questionnaire Completed by the Interviewer (PQCI), filled out by the PMK;
- 3.3 Questionnaire on the Ice Storm of January 1998, completed by the PMK;
- 3.4 Self-Administered Questionnaire for the Mother (SAQM), which is filled out by the biological mother or the spouse/partner of the biological father and by the absent biological mother if she can be contacted;
- 3.5 Self-Administered Questionnaire for the Father (SAQF), which is filled out by the biological father or spouse/partner of the mother. Biological fathers who are absent from the household but have contact with the child at least once a month are also asked to fill out the questionnaire;
- 3.6 Observations of Family Life (OFL), which is filled out by the interviewer;
- 3.7 Imitation Sorting Task (IST) or 1, 2, 3 Hands Game: this test is conducted with the target child by the interviewer;
- 3.8 Baby Diary (BD), which may be completed by the mother, father or anyone else who looks after the child, for example, the babysitter;

- 3.9 Authorization Form to Access Mother's and Infant's Medical Records: this form is used to obtain access to the medical records of the biological mother and her baby. The biological mother must sign this document.

These instruments are used to gather information on infants approximately 5 months of age, the household, the family and the couple (the biological mother and father or her/his spouse/partner), or the biological parent not living in the household.

3.1 Computerized Questionnaire Completed by the Interviewer (CQCI)

The CQCI is drawn in large part from the questionnaire developed for Cycle 2 of the National Longitudinal Study of Children and Youth (NLSCY), conducted by Statistics Canada and Human Resources Development Canada in 1996. We used the justifications in the document titled *Overview of Survey Instruments for 1994–95 Data Collection, Cycle 1* (Statistics Canada and Human Resources Development Canada, 1995). Following the publication of that document, the NLSCY or ÉLDEQ researchers added questions or adapted others. These changes were taken into account when the justifications for the 1998 ÉLDEQ survey were finalized.

The questionnaire comprises 4 sections:

- 3.1.1 Sociodemographic Questionnaire
- 3.1.2 Parents' Questionnaire
- 3.1.3 Child's Questionnaire
- 3.1.4 Absent Biological Parent's Questionnaire

3.1.1 Sociodemographic Questionnaire

This section of the questionnaire examines the household, that is, the relationships among its members as well as their housing conditions.

3.1.1.1 Household – CONT et DEM¹² (completed for all members of the household)

Objective

To obtain information on the members of the household and their age, sex and civil status.

Measure (CONT-Q8, 13 to 16, 19 and 20 and DEM-Q1)

These questions are identical to those of NLSCY (Cycle 2). The questions on the members of the household (CONT-Q13 to 16) and those on the date of birth and sex of the individual members (DEM-Q1) are drawn from the Enquête sur la population active (Labour Force Survey), which is conducted by Statistics Canada. The question on current marital status (DEM-Q1) is drawn from the National Population Health Survey. The response items were, however, modified for the present survey.

Questions CONT-Q19 and 20 are original; they were developed by *Santé Québec* to obtain a more precise description of the survey families (number of children living in and apart from the household).

3.1.1.2 Relationships – REL (completed for all members of the household)

Objective

To gather information on the relationships between all members of the household. This information makes it possible to obtain, as in the case of the NLSCY, a precise picture of the household for purposes of analysis or future activities related to the survey.

Measure (REL-Q1)

The question on relationships is identical to the one used in Cycle 2 of the NLSCY. It was drawn from the Survey of Labour and Income Dynamics conducted by Statistics

Canada. The question provides a means to establish a grid of the relationships of all members of the household, in contrast to understanding only the relationship of each of these members to one person in the household such as the mother or father. Given the rapidity of change in young families, this information is essential both for the NLSCY and ÉLDEQ.

3.1.1.3 Housing Conditions - HHL (completed by the PMK or the respondent for the household)

Objective

To determine the housing conditions of the household. These data provide information on whether the dwelling is owned by the occupants or, if not, it is subsidized housing, as well as on its state of repair and the number of bedrooms it contains. With this information, the researchers can describe the home environment of the infant.

Measure (HLD-Q1 to 8)

Questions HHL-Q1, 2, 2b, 3 and 6 to 8 are identical to those in Cycle 2 of the NLSCY. Questions 4, 5 and 5a are drawn from the Cycle 1 survey and were not included in the Cycle 2 survey.

Question HHL-Q1, on the ownership of the dwelling, is a modified version of a question in the 1991 Census (Statistics Canada).

Question HHL-Q2, on subsidized housing, is drawn from the Ontario Child Health Study (OCHS).

The question on the state of repair of the dwelling (HHL-Q2b) is drawn from the 1991 Census (Statistics Canada).

Question HHL-Q3 covers the number of bedrooms; it was formulated by Canada Mortgage and Housing. Information acquired from this question may serve, among other things, to determine a scale of overcrowding.

12. These abbreviations indicate sections of the CQCI.

Questions HHL-D-Q4, 5 and 5a are used to indicate whether there is a family pet and thus to complete the description of the child's home environment. They are drawn from the National Population Health Survey (NPHS), the purpose of which is to produce reliable estimates of the physical and mental health of Canadian residents and to identify their determining factors.

For question HHL-D-Q6, the interviewer must describe the type of dwelling visited (e.g., single detached house, duplex, etc.).

This section ends with questions HHL-D-Q7 and 8, which identify the respondent and the language of the interview. Let us now examine the section of the questionnaire addressed to parents.

3.1.2 Parents' Questionnaire

The theme of this part of the questionnaire is the parents of the target child, that is, the mother and father or the spouse/partner of this parent residing in the household. For the 1998 survey, in almost every case, these were the child's biological parents. The questions in this section cover education, employment, income, health status, family functioning, neighbourhood and sociodemographic characteristics.

3.1.2.1 Education Level – EDA (completed for the PMK and his/her spouse/partner)

Objective

To determine the number of years of schooling, the educational level attained and whether the respondent or the spouse/partner is currently enrolled in an educational institution.

Some studies – for example, OCHS and the National Longitudinal Survey of Youth (NLSY) in the United States – have shown that there is a relationship between the mother's level of education, family environment and the development of the child. The question on full- and part-time schooling is an indicator of the respondent's and his/her partner's main activities.

Measure (EDA-Q1 to EDUC-Q6)

The questions on level of education (EDA-Q1 to 4) are drawn from the General Social Survey on work and education (GSS) conducted by Statistics Canada in 1994, and questions EDA-Q5 and 6 on current school enrollment were formulated by the NLSCY project team.

All the questions in this section are identical to those in Cycle 2 of the NLSCY.

3.1.2.2 Employment Activity – LFS (completed for the PMK and her/his spouse/partner)

Objective

Describe the employment activity of the parents during the preceding 12 months and at the time of the survey.

The parents' employment status affects the living conditions of the family in terms of family income and other factors such as stress. Research from OCHS has shown that unemployment of the parents may have a detrimental effect on the mental health of children. Data on work schedules and type of work provide additional information on the parents and may be compared with data on child care.

Measure (LFS-Q1 to LFS-Q12d)

The questions cover main activity (Q1), paid work (Q2, 8 and 9a), number of weeks worked in the year (Q3), hours worked each week (Q4), work schedule – for example, working a regular shift (Q5) and weekends (Q6) – type of work (Q10a, 11a, 12a) and number of jobs worked during the 12 months preceding the survey.

All the questions are identical to those in Cycle 2 of the NLSCY, except question 9a, which comprises two parts (9a et 9b), and questions 12c and 12d. The latter, which are original, were added by the ÉLDEQ researchers to ascertain how many jobs the parents held during the 12 months preceding the survey, given that young parents are often precariously employed.

As with Cycle 2 of the NLSCY, the most detailed information covers the principal employment of the parents in the year prior to the survey. These questions are drawn from the Labour Force Survey (LFS) and Survey of Labour and Income Dynamics (SLID) conducted by Statistics Canada.

3.1.2.3 Income – INC (completed for the household)

Objective

To determine the sources and level of income during the 12 months preceding the survey.

This information provides an overview of the economic status of the household, a significant factor in the child's standard of living.

Measure (INC-Q1, 2, 3, 3a to 3g)

The questions on the household's sources and level of income before taxes and deductions are similar to those in other surveys and in the 1991 Census of Canada. Two approaches to gathering the information were used. If the respondent refused or was reluctant to provide precise figures, he/she was asked a cascade question, that is, questions on the range of income. These are similar to the questions in Cycle 2 of the NLSCY. The response items for questions 1 and 2 were, however, modified to take into consideration the context in Québec. For the 1999 ÉLDEQ survey, a question was added on the PMK's income (before taxes) in the 12 months preceding the survey. This question is also drawn from the NLSCY.

3.1.2.4 Parents' Health – HLA (completed for the PMK and her/his spouse/partner)

Objective

To gather information on the parents' health status, long-term health conditions, smoking and the consumption of alcohol and drugs. The questions on smoking are included because research has shown that second-hand smoke may be detrimental to the health of

children. The questions on alcohol and drug consumption are included because these activities may affect the parents' physical and mental health as well as the economic status of the household and family relationships.

Measure (HLA-Q1 to Q7c)

Questions HLA-Q1 to 7 are drawn from Cycle 2 of the NLSCY. The questions on general health, smoking and the consumption of alcohol are drawn from the National Population Health Survey (NPHS).

Questions HLA-Q7a, b and c were proposed by ÉLDEQ researcher Mark Zoccolillo. Modified from the Diagnostic Interview Schedule (DIS), version III-A, these questions reveal whether the PMK and the spouse/partner consumed certain drugs during the 12 months preceding the survey. These questions are not in the NLSCY.

Depression (completed only for the PMK)

Objective

To gather information on the mental health of the PMK, especially regarding symptoms of depression.

Several members of the Expert Advisory Group of the NLSCY have proposed that, for a longitudinal survey, the best procedure is to measure one aspect of the respondent's mental health and not to try to measure that individual's overall mental health. We proposed that depression be the subject of the section for the following reasons: it is a prevalent condition; it has been shown that depression in a parent affects the children; most current research on the topic is based on small groups rather than on representative population samples; and we believe that the adoption by government of programs and policies related to depression could have a significant impact.

Measure (HLA-Q12a to 12l and 12m)

Questions 12a to 12l comprise an abridged version of the Depression Scale (CES-D) developed by L.S. Radloff of the Center for Epidemiological Studies of

the National Institute of Mental Health (NIMH) in the United States. They measure the frequency of symptoms of depression in the general population as well as the presence and severity of symptoms associated with depression in the week prior to the survey. M. Boyle of Chedoke-McMaster Hospital at McMaster University proposed an abridged version of this scale.

Question HLA-12m, taken from the Edinburgh Postnatal Depression Scale (EPDS), was proposed by Richard E. Tremblay as a means of obtaining an additional measure of postnatal depression in the PMK when the infant is approximately 5 months old. Louise Seguin adapted the EPDS into French and it was validated by Jean-François Saucier of Ste-Justine Hospital with a sample of 369 mothers in Québec, 6 months after the birth of their babies. Thus it appears in neither Cycle 1 nor Cycle 2 of the NLSCY.

All the questions were also addressed to the biological father or the spouse/partner of the mother living in the same household as well as to absent biological fathers eligible to be included in the survey. They are part of the Self-Administered Questionnaire for the Father (SAQF, Q40 to 51a).

3.1.2.5 Family Functioning – FNC (completed by the PMK for the family)

Objective

To obtain a global assessment of family functioning and an indication of the quality of the relationship between the parents/spouses.

Studies have shown that the relationships among family members have a significant impact on the children. For example, the OCHS revealed a significant association between dysfunctional families and some mental health problems in children.

Measure (FNC-Q1a to FNC-Q1m)

This set of questions on family functioning, which was developed by researchers at Chedoke-McMaster Hospital at McMaster University, has been widely used not only in Canada but also around the world. The purpose of the scale is to measure problem solving, communication, parenting roles, emotional receptivity, emotional participation and behavioural control.

Question FNC-Q1m, drawn from the OCHS, was added to the initial scale to determine if alcohol consumption has an impact on family dynamics.

All the questions are identical to those in Cycle 2 of the NLSCY.

3.1.2.6 Neighbourhood – SAF (completed only for the PMK)

Objective

To gather information on the PMK's level of satisfaction with the neighbourhood as a place to bring up children; this includes an assessment of the degree of dangers and problems as well as social cohesion or "community spirit." Recent research by Jacqueline Barnes of the Judge Baker Children's Center at Harvard University has shown that parents' experience of danger and perception of social problems in the neighbourhood affect their sense of belonging to it and their disciplinary approaches with their children.

Information on parents' perceptions of the neighbourhood in which they live (HHLQ-Q6) is coupled with the interviewer's observations on the type of dwelling the respondent lives in. This information may eventually be compared with ecological data from other sources – for example, percentage of single-parent families or crime rates in the neighbourhoods or public housing complexes where the respondents live.

Measure (SAF-Q1, SAF-Q2, SAF-Q5a to SAF-Q7f and SAF-Q3)

These questions cover how long the family has lived in the neighbourhood, satisfaction with the neighbourhood as a place to bring up children and neighbourhood safety, social cohesion and social problems. They were adapted from the sections of the Simcha-Fagan Neighbourhood Questionnaire used by Jacqueline Barnes in her studies of neighbourhoods in Boston and Chicago. With the agreement of Jacqueline Barnes, we modified the questions to facilitate, among other things, factorial analysis.

The question on volunteer involvement (SAF-Q3) is drawn from the NPHS.

All the questions are identical to those in the NLSCY (Cycle 2).

3.1.2.7 Sociodemographic Characteristics – SOC (completed for the PMK and his/her spouse/ partner)

Immigration and Ethnic Origin

Objective

To gather information on the immigration and ethnic origin of the parents. These data provide a means to describe the parents' ethnocultural affiliation.

Measure (SOC-Q1 to Q4a)

The questions on the place of birth, citizenship, immigration status, year of immigration and ethnic origin are drawn from the 1991 Census (Statistics Canada). For the questions on ethnic origin, some response items were added to take into account the context in Québec.

Language

Objective

To determine the first language of the respondent and his/her spouse/partner as well as the other languages they know. First language may be used along with other information (birthplace and ethnic origin) to identify members of visible minorities.

Measure (SOC-Q5, 6 and 6a)

Question SOC-Q5 on the language(s) of conversation is drawn from the NPHS while the one on the first language (mother tongue) (SOC-Q6) is drawn from the 1991 Census (Statistics Canada). To these questions has been added one (SOC-Q6a) on the language(s) spoken most often at home; it is drawn from the Survey of Labour and Income Dynamics and the 1991 Census (Statistics Canada).

Religion

Objective

To determine the respondent's religious affiliation and participation rate in religious activities. It is well known that religion and especially the frequency with which one engages in religious activities may influence health and individual well-being.

Measure (SOC-Q8 and Q9)

The question on religious affiliation (SOC-Q8) is drawn from the General Social Survey (GSS) conducted by Statistics Canada in 1994. The one on how often the respondent participates in religious activities (SOC-Q9) is taken from the NPHS.

This ends the section of the questionnaire on parents. Other questions concerning parents are found in the paper-based instruments. They will be examined after a brief review of the sections of the CQCI entitled "Child's Questionnaire" and "Absent Biological Parent's Questionnaire."

3.1.3 Child's Questionnaire

This section provides data on a target population of infants of approximately 5 months of age. The information is given to the interviewer by the person with the most knowledge of the infant, that is, the PMK.

3.1.3.1 Health – HLT

Objective

To gather information on the physical health of the infant (general health, injuries, disabilities, chronic health problems) and on the use of health services.

Health is both a dependent and an independent variable. It is an intrinsic characteristic that may influence different aspects of an infant's life; it is also an element of the infant's life that is easily influenced by other factors. Health is thus fundamental to the development and well-being of children, and information on this aspect of children's lives must be gathered if we are to plan policies and programs of benefit to them.

Measure (HLT-Q1, HLT-Q3, HLT-Q4 and HLT-Q37 to HLT-Q42, HLT-Q45 and HLT-Q2, HLTQ48a to HLT-Q48i, HLT-Q49 and 50)

The questions on general health (HLT-Q1), height (HLT-Q3), weight (HLT-Q4) and injuries (Q37 to 42) are drawn from the NPHS. The questions on injuries were somewhat modified to better adapt them to very young children and to ensure they conformed with other data sources such as the Canadian Hospitals Injuries Reporting and Prevention Program.

The questions on chronic health problems and on consultations with health professionals (HLT-Q45 and HLT-Q48a to i) were developed by the project team at the NLSCY. They are drawn from the questions addressed to adults in the NPHS.

The question covering recent health status (HLT-Q2) was provided to the NLSCY project team by J.-F. Saucier from the Ste-Justine Hospital in Montréal.

Question Q49, on whether the infant has spent at least one night in hospital, was developed by the NLSCY project team from a question in the OCHS. Question Q50, about the reasons for this hospitalization, was proposed by the project team in consultation with Denise Avard of Canadian Institute of Child Health.

All these questions are identical to those in Cycle 2 of the NLSCY.

3.1.3.2 Medical and Biological (Perinatal) Information – MED (the questions are asked only if the respondent is the infant's biological mother [MED-Q3 to 31] or biological father [MED-Q13a to 31])

Objective

To gather information on factors such as weight at the time of delivery and smoking and drug usage during the pregnancy. Studies have shown that these factors have a direct influence on the growth and development of infants. For example, babies with low birth weight are at higher risk of experiencing ill health and developmental problems.

Measure (MED-Q3 to MED-Q10b, MED-Q13a, MED-Q23a to MED-Q24b and MED-Q29, 30a to 31)

The questions on the mother's drug and alcohol consumption and smoking during pregnancy are the same as those added to the supplementary survey of the NPHS (MED-Q3 to MED-Q10b).

The questions on the infant's birth weight (MED-Q13a) and the mother's health at delivery (MED-Q23a to MED-Q24b) were formulated by the NLSCY project team from questions provided by J.-F. Saucier of Ste-Justine Hospital in Montréal.

All these questions are identical to those in Cycle 2 of the NLSCY.

The three questions covering the mother's employment after her baby's birth (MED-Q29, 30a and 31) were added to Cycle 2 of the NLSCY and adopted without any changes for the 1998 ÉLDEQ survey.

3.1.3.3 Temperament – TMP

Objective

To measure the temperament of the target child by asking the parents to assess how difficult they find the child to be. This measure is based on the fact that a child's temperament is associated not only with biological factors but also with the perceived difficulty of that child by its parents.

Measure (TMP-Q1, 3, 5 to 8, 17, 19, 20 and 33)

The temperament scale known as the Infant Characteristics Questionnaire (ICQ), which was developed by John Bates of the University of Indiana, is a well-known scale that has been used in several large studies. It is considered by experts as the best instrument for population studies.

Because of the age of the target children in ÉLDEQ, only 10 questions are addressed to the PMK. They are identical to those in the NLSCY (Cycle 2), except for question 3, which was removed from the Cycle 2 survey. Some of these questions (TMP-Q5, 6, 7, 8, 19, 20 and 33) are also answered by the father in the Self-Administered Questionnaire for the Father (SAQF-Q2 to 12).

3.1.3.4 Literacy – LIT

Objective

To measure the exposure of the children to reading. This section enables the researchers to acquire, over the course of the survey, indices of how well prepared the children are to enter school and the effect this preparation may have on their success in school.

Measure (LIT-Q1 to LIT-Q3)

These questions were developed by B. DeBaryshe of the University of Hawaii, based on the US National Assessment of Educational Progress. The questions

vary according to the age of the child. Three questions from this source were adopted for ÉLDEQ 1998. They are identical to those in Cycle 1 and Cycle 2 of NLSCY.

3.1.3.5 Activities – ACT

Objective

To measure the children's participation in educational activities. This section provides information on how children use their time. In particular, we wish to know if they are involved in, for example, Mom and Tot program and Infant stimulation programs.

Measure (ACT-Q1 to ACT-Q2b)

The questions on pre-school activities were formulated by the NLSCY team from sources such as the Canadian National Child Care Study (NCCS) and the Better Beginnings, Better Futures Project sponsored by the government of Ontario. These questions are identical to those in Cycle 2 of the NLSCY.

3.1.3.6 Motor and Social Development – MSD

Objective

To measure motor, social and cognitive development in young children.

Measure (MSD-Q8 to MSD-Q22 and MSD-Q22a to MSD-Q22k)

The scale of motor and social development was fine-tuned by Gail Poe of the National Center for Health Statistics in the United States. This scale comprises 15 questions (MSD-Q8 to MSD-Q22) that measure aspects of motor, social and cognitive development in young children, from birth to age 3. The questions vary according to the age of the child. This scale was used to collect data for the National Longitudinal Survey of Youth (NLSY) in the United States and for recent versions of the National Child Development Survey (NCDS) in England.

MSD-Q22A to MSD-Q22k

Eleven questions from the Vineland Adaptive Behaviour Scales (Sparrow et al, 1984) were used in ÉLDEQ, on the recommendation of Richard E. Tremblay. Since there were relatively few questions aimed at measuring the social adaptation of infants, these questions (MSD-Q22a to MSD-Q22k) helped complete the social dimension of the survey. The questions are similar to those in the source scale, but they were reformulated for use in face-to-face interviews. They were translated into French by *Santé Québec* and verified by the researcher.

3.1.3.7 Parental Roles – PAR

Objective

To measure parenting practices and aspects of the basic care of the children. This section of the survey covers topics such as the parents' positive interaction with and hostility towards the infant.

The way in which children are raised has a significant influence on their behaviour and development. This is an area in which support policies and programs for families are needed.

Measure (PAR-Q1 to PAR-Q6 and PAR-Q7a)

The questions on parenting practices were provided to the NLSCY by M. Boyle of Chedoke-McMaster Hospital from work done by Ken Dodge at Vanderbilt University and adapted from the Parent Practices Scale by Strayhorn and Weidman.

The seven questions used in the 1998 collection wave of ÉLDEQ measure the frequency of certain parental behaviours towards the child and comprise two scales of parenting practice. The first measures positive interactions (PAR-Q1, 2, 3, 6 and 7) and the second assesses hostile interactions (PAR-Q4 and 5).

The questions in the first year of ÉLDEQ are identical to those in Cycle 2 of the NLSCY, except for questions

PAR-Q4 and 5; after the pretest, the French versions of the questions were modified to take into account the context in Québec.

3.1.3.8 Family and Custody History – CUS

Objective

To gather information on the family of the target child, including on transitions in the family before and after the birth, by examining the conjugal history of the biological parents.

Numerous clinical studies have shown a link between family instability, that is, parental conflict, separation, divorce and family reconstitutions, and the emergence of problems such as low self-esteem, adjustment problems and mediocre success at school. In documenting, from a representative sample, changes in the families of children, the data from the NLSCY and ÉLDEQ 1998-2002 provide a means to understand the impact of marital dissolution on the development of children.

Measure (CUS-Q1 to CUS-Q23)

This section of the survey brings together innovative data on family transitions experienced by children and on changes in child-care arrangements after parental separation or divorce. The questions were developed for the NLSCY by Nicole Marcil-Gratton of the Department of Demography at the University of Montréal and used without adaptation for the first data collection wave of ÉLDEQ. In the NLSCY, as in ÉLDEQ, the respondent (PMK) must be one of the child's biological parents.

Beginning with the ÉLDEQ 1999 survey, some new questions, proposed by *Santé Québec*, were added to those addressed to the biological parents (SAQM or SAQF). They provide a means to understand the circumstances surrounding the break-up, if indeed that is the case, and the relationship between the non-custodial parent and the target child. Questions are also addressed to the absent biological parent, if it is possible to get in contact with that person (see the discussion below).

3.1.3.9 Child Care – CAR

Objective

To gather basic information on child care for parents who work or study, as well as retrospective information on child care. These questions provide a means to ascertain how much time the child spends in a child-care environment and the nature of that child-care service. In addition, information is gathered on how often in the preceding 12 months the child-care arrangement changed and on the nature and reason for those changes. The questions also provide a means to determine if the daycare services used are non-profit or profit-based and whether or not the home daycare centres are licensed.

Measure (CAR-Q1a to CAR-Q5)

The questions on daycare centres were formulated by the NLSCY project team from the Canadian National Child Care Study, conducted in 1988 and improved after discussions with experts in the field. Some were adapted for specific age groups (0–11 months, 1–3 years, 4–5 years, 6–11 years and 12–13 years). For the first data collection period of ÉLDEQ, 21 questions pertaining to the age group of the target children (approximately 5 months) were retained. They are identical to the questions in Cycle 2 of NLSCY.

3.1.3.10 Sociodemographic Information – SOC – Child

Questions SOC-Q4, 4a 8 and 9 on the ethnic origin, race and religion of the child are the same as those addressed to parents in both Cycle 2 of the NLSCY and the 1998 ÉLDEQ survey (see the section entitled "Parents' Questionnaire").

This ends our examination of the section of the questionnaire entitled "Child's Questionnaire". Let us now examine the final section, "Absent Biological Parent's Questionnaire."

3.1.4 Absent Biological Parent's Questionnaire

This section of the questionnaire was designed for ÉLDEQ 1998–2002. It must be completed by the PMK if the other biological parent is not living in the household.

The questions cover the name and date of birth of the absent biological parent as well as his/her level of education (EDA-Q2, 3 and 4) and employment (LFS-Q1: main activity; Q2, 8, 9a: paid work; Q10a and 11a: type of work). The questions are identical to those in the section on the CQCI entitled "Parents' Questionnaire."

This ends the examination of the Computerized Questionnaire Completed by the Interviewer. The next section will examine the two paper questionnaires, the Paper Questionnaire Completed by the Interviewer (PQCI) and Questionnaire on the Ice Storm of January 1998, which are completed by the interviewer during a face-to-face interview with the PMK. This will be followed by an examination of the Self-Administered Questionnaire for the Mother (SAQM) and the Self-Administered Questionnaire for the Father (SAQF) as well as the Observations of Family Life (OFL) questionnaire that is filled out by the interviewer after meeting with the parents.

3.2 Paper Questionnaire Completed by the Interviewer (PQCI)

Like the CQCI, the respondent for the Paper Questionnaire Completed by the Interviewer (PQCI) is the person who best knows the child, the PMK. This questionnaire complements the CQCI and is divided into three sections: the grandparents, the perception of the socioeconomic situation and the infant's diet and oral hygiene.

Section 1 – The Grandparents

Objective

To acquire information on the reproductive behaviour of the grandparents of the target child from the point of view of intergenerational reproduction.

Measure

Questions 1 to 6 cover the current age of the target child's maternal and paternal grandparents or, if they are deceased, the date of death as well as the age of the eldest child in that family (the aunt or uncle of the target child). These questions are drawn from the *Étude longitudinale et expérimentale de Montréal* (Longitudinal and Experimental Study of Low SES Boys in Montréal) and the *Étude longitudinale des enfants de maternelle au Québec* (Longitudinal Study of Québec Kindergarten Children), two studies conducted in Québec by the *Groupe de recherche sur l'inadaptation psychosociale* (Research Unit on Children's Psychosocial Maladjustment) at the University of Montréal (GRIP), in 1984 covering 1,037 boys and 1986, 3,018 boys and girls.

Section 2 – Perception of the Socioeconomic Situation

Objective

To measure the respondents' perception of the financial situation of the household at the time of the interview.

Measure

Questions 7, 8, 9 and 10 measure the respondents' perception of the financial situation of the household. Question 9 examines how long the perceived financial situation has lasted. These questions are drawn from the *Enquête sociale et de santé 1992–1993* (Health and Social Survey) conducted by *Santé Québec* and covering more than 16,000 households in Québec. The questions were included in this study upon the recommendation of Christine Colin, former Assistant Deputy Minister for Public Health in the *ministère de la Santé et des Services sociaux du Québec – MSSS*.

Question 11 is original. It covers the total annual income of the household in the year preceding the mother's maternity leave. It aims at discerning the economic mobility of the household during the period before the arrival of the infant.

Section 3 – Diet

Objective

To gather information on the dietary patterns of infants. An expert advisory group on nutrition (see Annex Part I for a list of members) was formed to gather information on the diet of babies. The subject of breast feeding, in particular, was incorporated in ÉLDEQ 1998-2000 upon the request of the *ministère de la Santé et des Services sociaux du Québec (MSSS)*, one of the principal sources of funding for this survey.

This section comprises questions on the mother's choice of mode for feeding the infant, its duration, social support related to breast feeding, the introduction of solid foods, nutritional supplements, etc.

Studies have shown that there is an association between dietary patterns, infant development and behavioural problems (Beaudry et al, 1995; D'Amours, 1990). Iron deficiency and the quality of the mother-infant relationship have also been linked.

The main risk factors associated with iron deficiency are poverty, low birth weight and rapid growth in the infant, use of non-iron-enriched formulas, breast feeding for longer than 6 months by the mother if she does not take iron supplements, use of cow's milk and dietary allergies. It is these factors that were surveyed in ÉLDEQ.

With respect to the mother-child relationship, it has been shown, for example, that breast feeding the infant from birth is important in creating a bond between the mother and child.

Measure

Questions 12 and 13 provide a means to ascertain the breast feeding pattern during the first 5 months of the child's life. They were recommended by:

- Lise Dubois of *Université Laval*, who based them on questions in the Avon Longitudinal Study of Pregnancy and Childhood (ALSPAC, 1990). This longitudinal study was initiated in 1990 and continued for at least 7 years in the county of Avon, which includes the city of Bristol, in Great Britain. The sample, comprising 13,995 mothers and 14,138 children, is representative of children born in the country between 1991 and 1992.
- Marie-Claire Lepage, from the team working with *Adaptation familiale et sociale* of the *Direction de la santé publique (Public Health Department)* for the Quebec region, who was associated with the *Étude provinciale sur l'alimentation du nourrisson (ÉPAN)* conducted in the fall of 1994 among primiparous women in Québec by means of post-partum interviews in hospitals as well as telephone interviews.
- Louise Séguin and Louise Desjardins of the University of Montréal following a pretest on the *déterminants du début et de la durée de l'allaitement maternel (PDDAM)* (determinants of initiation and duration of breast feeding) that they conducted in 1994-1995 among 22 Québec women living in low-income households in the course of a preliminary study on nutrition.

Questions 14, 16a and 16b cover the consumption of infant formula or cow's milk. They were recommended by Michèle Houde-Nadeau of the Nutrition Department of the University of Montréal and by Lise Dubois, who also found inspiration in the ALSPAC study.

Questions 16a, 16b, 21a and 21b, on the infant's age when the mother introduced or ceased to use one type of milk, are drawn from The Third National Health and Nutrition Examination Survey (NHANES III-USA, 1988-1991, 1991-1994). The data for this cross-sectional study with longitudinal follow-up were collected in two waves, that is, from 1988 to 1991 and from 1991 to 1994 for a non-institutionalized civilian population aged 2 months and older (34,000 persons).

As in the case of questions 12 and 13, questions 16 and 21 aim to discern dietary patterns in bottle feeding during the infant's first 5 months as well as the impact on his/her health of the various types of milk used.

Questions 17 and 19 provide a means to assess when the mother decided to use the feeding method. Then, during the analysis of the data and cross-tabulation, we can ascertain if there is a link between the time of the decision and the preferred choice at the time of birth. Questions 15, 18 and 20 cover the main reason why the mother chose to breast or bottle feed the infant. These questions are drawn from the ÉPAN and PDDAM.

Question 22 comes from the NHANES III (1988-1991) and was adapted to account for the context in Québec. The question provides information on the proportion of mothers receiving an allowance from the government to breast feed their infants or to purchase commercial formulas. It was recommended by Lise Bertrand, nutritionist with the *Direction de la santé publique* for the Montréal-Centre region.

Questions 23 and 24, which aim at providing information on how long the infant took nutritional supplements, come from the *Évaluation de l'état nutritionnel en fer d'un groupe d'enfants (ÉÉNFE) (Iron Nutritional Status)*, a study conducted in a sample of infants aged 12 to 20 months and living in the Charlevoix region of Québec. The study, under the direction of Huguette Turgeon-O'Brien, was conducted in 1992-1993 by the *Groupe de recherche en nutrition humaine* (Human Nutrition Research Group) from *Université Laval* among 22 boys and 25 girls. The questions had been pretested. This information is needed, according to Michèle Houde-Nadeau of the University of Montréal, because it is very important to supplement the diet with iron as well as other nutrients such as Vitamin D, in particular for babies born in fall or winter.

The responses to question 24, on the consumption of vitamin or mineral supplements, are also analyzed by the team of consulting dentists of the *Direction de la santé publique, Montréal-Centre*, headed by Ginette Veilleux (see the following section on dental health).

Question 25, on the sequence of introduction of solid foods, provides a glimpse of the extent to which the recommendations of the Canadian Paediatric Society¹³ are followed by parents. This question was drawn from the following studies and modified to some extent: NHANES III-USA (1988–1991), ÉÉNFE and ÉPAN.

Question 28 is asked to learn if the attitude to breast feeding of the mother's family, friends and professional contacts influenced her choice of feeding method. The question is drawn from the ÉPAN and PDDAM.

Section 4 – Oral and Dental Health

Objective

To increase knowledge of the evolution of habits in infancy relating to fluoride intake, dietary practices, dental hygiene, non-nutritive sucking and use of dental services. The associations between some of the above named habits related to oral and dental health and socioeconomic and psychosocial aspects of the development of very young children must be better documented if we are to design appropriate prevention programs.

The period from age 0 to 5 years is when the process of infection that leads to dental caries first sets in. A particular manifestation of morbidity, called baby bottle or early childhood caries, has been observed in very young children. It is characterized by very rapid destruction of tooth structure. Although multiple factors are known to cause the condition, many observers suggest it results from ignorance of the negative effects of constantly letting a child fall asleep with a bottle containing milk or juice. Caries in young children may affect speech, including pronunciation, and facial aesthetics, which in turn have a psychological impact on the child and lead to difficulties with speaking or smiling and mastication, possibly resulting in poor diet and stunted growth. With regard to non-nutritive sucking habits (of a finger, a pacifier or other object), the effect most often observed in primary dentition is the

13. These recommendations are found in the booklet *From Tiny Tot to Toddler* (Doré & Le Hénaff, 1997) given free of charge to all mothers who give birth in a hospital or birthing centre in Québec.

displacement of dento-alveolar structures in the anterior segment of the maxilla. For this reason, it may affect appearance, swallowing and speech in some children.

The ÉLDEQ survey has, for the first time in Québec, provided data on habits related to dental health in very young children.

Measure

To gather information on infants approximately 5 months of age, questions 26a, b, c and 27a, b, c, which cover what bottle-fed infants are imbibing and over what period, were included in the section on diet. These questions were provided by a 6-member team of consulting dentists associated with the *Direction de la santé publique* for *Montréal-Centre* (see Annex Part I for a list of members). They were adapted from two sources.

The first is the questionnaire for the *Étude des besoins en santé dentaire (ÉBSD)*, developed by Martin Généreux and Ginette Veilleux of the *Direction de la santé publique* for *Montréal-Centre*. The questionnaire was administered by telephone in February and March 1990 to a sample of 106 parents of 12- to 18-month old infants who had attended an immunization clinic at a CLSC (Community Health Centre) in Montréal East.

The second source is the *Projets de surveillance de la carie du biberon (PSCB)*, which is associated with the *Directions de la santé publique* for *Montréal-Centre* and the Laurentians. Michel Lévy and Paul Massicotte developed a questionnaire for this project based on the training manual from the Center for Disease Control and Prevention and entitled *How to organize a baby bottle tooth decay program*. Data collection took place from 1997 to 1998 in a sample of 200 children associated with seven CLSCs in the Laurentians¹⁴.

Questions 24a and 24b cover the type of vitamin and/or mineral supplement(s) taken by the infant. The purpose of these questions is to estimate the intake among

14. The report was not available when the present volume was published.

infants of supplements containing fluoride, a factor known to provide protection against caries. These questions are also analysed by the expert advisory team on diet that is working under the direction of Lise Dubois of the *Département de médecine sociale et préventive de l'Université Laval* (Department of Social and Preventive Medicine of *Université Laval*).

Question 14 of the SAQM (Self-Administered Questionnaire for the Mother), which is found in Section 2, "Sleep," deals with whether the infant has a particular object in the bed before going to sleep. It provides a means to study non-nutritive sucking, that is, whether the infant uses a pacifier to go to sleep. The responses to this question are also analysed by Jacques Montplaisir of the Centre d'étude du sommeil (Center for the Study of Sleep) of Sacré-Coeur Hospital, University of Montréal.

Note that the separate section on oral and dental health was introduced in the PQCI with the 1999 ÉLDEQ survey.

3.3 Questionnaire on the Ice Storm of January 1998

The short questionnaire entitled Questionnaire on the Ice Storm of January 1998 is filled out by the interviewer with the PMK. Its completion brings to an end the face-to-face interview.

Objective

To determine the impact of the ice storm that hit Montréal and the surrounding regions in January 1998 on diverse variables related to the development of the infants in view of their age during the event (babies in the 2nd or 3rd trimester of pregnancy or up to 3 months of age).

Measure

Questions 1 and 2 cover the period during which family members lived without electricity or telephone service. They provide a means of ascertaining the proportion of families who were affected by the storm and the number

of hours or days they lived with neither electricity nor telephone service during the coldest months of a Québec winter.

Questions 3, 4 and 7 deal with the type and location of shelter, if any, used by the families.

Questions 5 and 6 aim to provide information on losses in revenue and stored food experienced by the families as well as on damage to their homes.

Question 8 covers the respondent's perception of the consequences of the storm for the family.

All the questions come from the 1998 *Enquête sociale et de santé (ESS-SQ)* coordinated by *Santé Québec* of the ISQ. They were designed by a committee set up by *Santé Québec*. The results of the preliminary analysis of the data for ÉLDEQ are presented in Volume 1, Number 1, of this collection.

3.4 Self-Administered Questionnaire for the Mother (SAQM)

The Self-Administered Questionnaire for the Mother (SAQM) must be completed by the biological mother of the target child or the spouse/partner of the father (if the biological mother is absent from the household) and by the absent biological mother if it is possible to contact her. It comprises seven sections on the following themes: experiences during pregnancy, sleeping habits of the infant, the mother-child relationship, financial support provided to the mother by the father or the current spouse/partner, prior antisocial behaviours in the mother and biological father, if the latter is absent from the household, and leisure activities.

Section 1 – Experiences During Pregnancy

Objective

To obtain a profile of the mother's reproductive history from the perspective of intergenerational reproduction. In the long term, the responses to these

questions could be examined in relation to the child's onset of puberty and her/his sexual compartment and reproductive profile.

Measure

Questions 2 to 6 cover the biological mother's age at onset of menstruation, her first pregnancy, first child, first abortion and the number of pregnancies and abortions she has had. These questions are new; they were developed by Richard E. Tremblay of GRIP at the University of Montréal.

Section 2 – Sleep

Objective

To assess the role of genetic and environmental factors on the circadian sleep-wake rhythm of infants. Identifying the environmental factors (temperature, light levels) or parental behaviours that enhance or impede the consolidation of the sleep-wake rhythm in infants is one step in formulating for parents recommendations on how they can foster normal sleep rhythms early in their children's lives. In the short term, this section of the survey provides a means to examine the links between infants' sleep patterns and various aspects of their development.

Measure

The questionnaire on sleep was specially designed for the *Étude des jumeaux nouveau-nés du Québec (ÉJNQ)* (Québec Study of Newborn Twins) and the sample of singleton babies of ÉLDEQ 1998–2002 by Jacques Montplaisir of the *Centre d'étude du sommeil* of Sacré-Coeur Hospital at the University of Montréal. The questions are thus original and were not drawn from existing questionnaires. They were translated into English and counter-verified by the researcher.

Questions 7 and 7a provide a means to verify the consolidation of the sleep-wake rhythm and to identify the age at which the infant started sleeping through the night.

Questions 8, on how long it takes the infant to fall asleep, and 9, on difficulties in falling asleep, aim to measure the mother's perception of the ease or difficulty with which the infant falls asleep.

Questions 10 and 11, on sleep consolidation during the night and day, provide a means to determine the onset of the sleep-wake cycle in the baby and whether it is reversed.

Question 12 deals with the circumstances surrounding going to bed; specifically, the behaviours adopted by parents to get their infants to go to sleep.

Question 13, on where the infant sleeps, provides information on the sleep environment and factors that might contribute to sleep problems.

Question 14 covers the infant's sleep habits, in particular, whether a transitional object (e.g., pacifier, bottle, stuffed animal) is present when the infant is falling asleep. As mentioned, responses to this question are also analyzed from the point of view of non-nutritional sucking (use of a pacifier) by the team of consulting dentists at the *Direction de la santé publique, Montréal-Centre*, lead by Ginette Veilleux (see the sections "Diet" and "Oral and Dental Health" of the CQCI).

Question 15 addresses the parents' behaviour at night awakenings. It provides information on parental reaction when babies do not sleep through the night. Question 16, dealing with the number of sleep interruptions experienced by the mother, aims to assess the degree of sleep fragmentation.

Question 17 deals with the temperature of the room in which the baby sleeps, and question 18 deals with the light level. They aim to determine the influence of the

physical environment on the quality of the infant's sleep consolidation.

Question 19, on the infant's breathing, aims to discern breathing patterns that could influence the infant's sleep, while question 20, on the smoking habits of the parents or others in the household, provides information on the influence of second-hand smoke on the infant's sleep.

Section 3 – The Mother-Child Relationship (*ÉCOPAN- Échelle des cognitions et des conduites parentales*) Parental Perceptions and Behaviours Regarding the Infant Scale (PPBS)

Objective

To obtain an assessment of the mother's attitudes and behaviours regarding her child.

Numerous studies reveal an association between maternal attitudes and behaviours and various indices of child adjustment. For example, several studies suggest that infants whose parents show them little affection or are overprotective are more likely to develop internalizing problems during their development. The literature also seems to show that maternal behaviours are associated with the mother's perception of her efficacy as a mother and the impact of her behaviours on her child's development.

This scale, entitled the *ÉCOPAN (Échelle des cognitions et des conduites parentales)*, Parental Perceptions and Behaviours Regarding the Infant Scale (PPBS) is also administered to the biological father (living in the household or absent from it) or the current spouse/partner in the Self-Administered Questionnaire for the Father.

Measure

Six dimensions are measured using the following questions:

Feeling of self-efficacy: questions 23, 25, 27, 29, 32, 47

Perception of impact: questions 22, 31, 37, 42, 45

Tendency to coercion: questions 26, 28, 30, 33, 36, 40, 43

Affection: questions 22a, 22b, 46a, 46b, 46c

Overprotection: questions 34, 38, 39, 41, 44

Perception of the child's qualities: questions 21, 24, 35, 46

For each question, the mother indicates the degree to which the statement accurately describes her actions, thoughts or feelings towards the child. To reply, the mother selects a response on a Likert-type scale ranging from "Not at all" to "Exactly."

The questions related to the dimension "feeling of self-efficacy" are drawn from a scale developed in 1991 by Teti and Gelfand and adapted by Michel Boivin and Christiane Piché of the *Laboratoire de recherche de l'École de psychologie de l'Université Laval* (Research Laboratory at the School of Psychology of *Université Laval*) to take into consideration the age of the infants. Question 47, recommended by Michael Lamb, comes from the questionnaire Being a Parent developed by Joe Pleck of the University of Illinois. All the other questions are original and were developed by Michel Boivin and Christiane Piché. A list of initial items was drawn up and the validity of their contents was verified by 15 specialists in the field of mother-child interactions. The list was finalized after the items were pretested in a sample of francophone and anglophone mothers in the ÉJNQ-1995 and the pilot study of ÉLDEQ, which took place in 1996 (Santé Québec, Jetté et al, 1997).

Section 4 – Support Provided by the Current Spouse/Partner

Objective

To assess the emotional and instrumental support provided to mothers by the spouse/partner. The questions provide a means to explore various situations, including overall conjugal support, support in infant caregiving, in household chores, during periods of feeling overwhelmed and during periods of sadness.

Numerous studies have shown an association between a mother's behaviours and the instrumental and emotional support provided to her by her spouse/partner. For example, certain studies have demonstrated that mothers are better adjusted when fathers participate in household chores and in caring for the baby (Levitt et al, 1986), while others reveal that maternal behaviours such as anger, rejection and punishment are less frequent in mothers who are satisfied with their spouse/partner's emotional support (Crockenberg, 1987).

Measure

The first question (48) is directed to the mother and serves to verify what relation the spouse/partner is to the target child (infant approximately 5 months old).

Questions 49 to 53 of the scale for instrumental and emotional support are original and were developed by Valérie Saisset, Michel Boivin and Christiane Piché of the *Laboratoire de recherche de l'École de psychologie de l'Université Laval*.

This scale comprises five questions that provide an assessment of the spouse/partner's instrumental and emotional support in a variety of situations. Questions 49 and 50 address in particular the father's instrumental support, while questions 51 and 52 assess his emotional support and question 53 assesses his overall support.

To reply, the mother selects a response on a Likert-type scale ranging from "Not at all" to "Totally."

Section 5 – Overview of the Childhood, Adolescence and Adult Life of the Mother

Objective

To assess the psychopathology (particularly problems related to antisocial behaviour) of mothers of infants approximately 5 months old.

Canadian, American and British studies have shown that children with behaviour problems are more likely to have been born to parents with a history of conduct problems or of antisocial personality. Questions similar to those addressed to biological fathers, living in the household or absent from it, are addressed to mothers of the infants to assess the prevalence of antisocial behaviours that can be manifested in childhood or adulthood.

Measure

The questions in this section were modified from the most commonly used structured psychiatric interview in the world: the National Institute of Mental Health-Diagnostic Interview Schedule (NIMH-DIS), developed by Helzer and Robins (1988), and are based on the DSM-III (American Psychiatric Association, 1980) criteria. They also reflect DSM-IV criteria for the diagnosis of Conduct Disorder and Antisocial Personality Disorder (American Psychiatric Association, 1994). They were adapted and translated into French by Arthur BIYesn and pretested in ÉLEMQ, a longitudinal study directed by Richard E. Tremblay and Frank Vitaro of GRIP at the University of Montréal.

For the 1998 ÉLDEQ survey, the questions were adapted for use in a self-administered questionnaire. The response items "refuses, doesn't know" were removed and "before the end of secondary 5" was modified to "before the end of high school" as a way to define what we mean by "childhood."

To avoid making the interview too long, some questions were regrouped. Readers should take note that certain problems of specificity exist for all the ÉLEMQ questions that combine questions from DIS and that measure more than one symptom from DSM-III or DSM-IV (Diagnostic and Statistical Manual of Mental Disorders).

Questions 55 and 56 (adapted from questions R12 and R6 of the ÉLEMQ) on stealing and fighting represent one part of the scale of antisocial behaviours (criteria B11, B12 and B3) of DSM-III-R. These questions are found in the SAQF (questions 53 and 54), although in a somewhat different form, to take into account the antisocial behaviours of men.

Questions 54, 58, 60 and 65, on participation in clubs or organized sports teams, are new and were added to the questionnaire to give it a positive tone and to prevent respondents from adopting a certain resistance to it. They are similar to questions 52, 57, 58 and 63 of the SAQF.

Question 57 is drawn from the ÉLEMQ (question R18), with two modifications: 1) "when he was a minor" is replaced by "before the end of high school" in order to make it consistent with the questions on the mother's childhood; 2) "appeared in youth court" was changed to "in trouble with Youth Protection because of misbehaviour" to take into account the context in Québec. In addition, this rewording makes the criterion a bit less formidable than the case of a court appearance. The question is similar to question 55 of the SAQF.

Question 59 is adapted from question R5 of the ÉLEMQ. This question, on trouble at school, that is, on "skipping school" is used for mothers only because such behaviour seems more pertinent to them. It differs from question 56 of the SAQF, which refers to having been "expelled or suspended from school."

The next question (Q59a) deals with running away from school. It comes from question R10 of the ÉLEMQ and is addressed only to mothers because it attempts to evaluate a symptom associated more frequently with antisocial behaviour in women.

Question 61 is drawn from question R50 of the ÉLEMQ. It also appears in the SAQF (question 59). We changed the term "let go" to "fired" (excluding layoffs resulting from lack of work). The theme "problems at work" corresponds to the DSM-III-R criterion C1, which is used to diagnosis Antisocial Personality Disorder.

Question 62 comes from question R19 of the ÉLEMQ. This question, about arrests, relates to criterion C2 of the DSM-III-R and is almost identical to question 60 of the SAQF.

Question 63, on physical aggression exhibited in adulthood ("hit or threw objects"), is from the ÉLEMQ (R43). It corresponds to criterion C3 of the DSM-III-R and is addressed only to mothers, the formulation being more appropriate to the behaviour of women. For men, the survey seeks information on physical aggression towards others (e.g., fights, assault), whether or not the violence is directed against the spouse/partner (Q61 of the SAQF and Q74 of the SAQM – "About your baby's biological father...").

Question 64 deals with problems related to drugs and alcohol. It combines three questions – M-14, P-18 and M-17 – of the ÉLEMQ. The part "been in trouble at work, with the police or with your family..." comes from question M-14. Combining aspects of questions P-18 and M-17, we listed "alcohol" with "drugs" as causes of the symptom and included the part of question M17 on car accidents to identify another potential problem related to drugs or alcohol. This question is similar to question 62 of the SAQF.

As mentioned, we encountered a problem of specificity for all the questions in which we combined more than one of the DIS questions measuring more than one symptom of DSM-III. The strategy was nevertheless retained to make filling out the questionnaire less onerous.

Section 6 – Overview of Childhood, Adolescence and Adult Life of the Absent Biological Father

Objective

To assess the psychopathology (particularly problems related to antisocial behaviour) of absent fathers of infants approximately 5 months old.

Certain studies suggest that infants are more likely to exhibit conduct problems or antisocial personality if the

father, more specifically than the mother, exhibited such problems himself. This association is valid even if the child has few or no contact with the father during childhood. The data on absent fathers are provided by proxy by the infant's mother (SAQM). Absent fathers who are eligible and whose address is provided by the mother receive the Self-Administered Questionnaire for the Absent Father (SAQFABS) so that they may answer the questions as do the biological fathers or spouse/partners living in the household (see SAQF, above).

Measure

As with Section 5 of the SAQM on the mother's prior life, all the questions in this section come from the NIMH-DIS (Helzer & Robins, 1988). They were adapted and translated into French then pretested in the ÉLEMQ. On the basis of this French version, the questions were set in the third person singular for inclusion in the proxy questionnaire.

For all the questions on adolescence, "before finishing Secondary 5" was changed to "before the end of high school." We also added "Do not know" to the response items, given that the mother/ spouse might not know the answer to some of the questions.

Questions 66 and 67 provide a means to assess the involvement of the absent biological father in the life of his infant of approximately 5 months old. Question 66 has been modified. We ask how much contact the biological father has had with his baby rather than inquiring about his presence in the household (as was done earlier in the survey). This question comes from the antisocial behaviour scale (criterion C4 of the DSM-IIIIR) for diagnosing Antisocial Personality Disorder. It is adapted from question A5 of the ÉLEMQ.

To discern if the absent father provides financial support (question 67), we adapted question R60 of the ÉLEMQ. This question is another component of the antisocial behaviour scale (criterion C4 of the DSM-IIIIR).

Questions 68 and 69, adapted from questions R12 and R6 of the ÉLEMQ and covering stealing and fighting, correspond to criteria B11, B12 and B3 of the DSM-IIIIR. These questions are also found in the questionnaire on antisocial behaviours given to the mother (questions 55 and 56).

Question 70, on involvement with the Department of Youth Protection, is identical to question 57 of the SAQM (see preceding section).

Question 71, which is adapted from question R4 of the ÉLEMQ, is about "problems at school"; it also is part of the scale of antisocial behaviour (DSM-III). This question appears in the SAQP (question 56), but is not in the mother's self-administered questionnaire.

Question 72, on problems at work, and question 73, on arrests, are similar to questions 61 and 62 addressed to the mother. The justifications for the latter were presented in the preceding section. With respect to the father, however, question 72 asks if he has been fired from "more than one job."

Question 74 deals with physical aggression manifested in adulthood; it combines two questions from the ÉLEMQ (R42 and R44) to reduce the number of questions in this somewhat lengthy survey. We therefore had to eliminate or adapt the parts of the original questions that were redundant or contradictory or would have made the question too long or not appropriate for a proxy questionnaire. For example, we replaced "it came to blows" to "assaulted or physically hurt anyone" and "hit his partner" to "including yourself"; as well, we removed "except for disputes with his partner or those related to his work" and "thrown objects."

This question on the antisocial behaviour scale corresponds to criterion C3 of the DSM-IIIIR for diagnosing Antisocial Personality Disorder. It is similar in part to question 61 of the SAQF (see below).

Note that this question on general physical aggression is not found in the questionnaire on antisocial behaviours addressed to the mother (Section 5).

Section 6 of the questionnaire ends with question 75, which deals with problems related to drugs and alcohol and is identical to question 64 in the mother's questionnaire.

Section 7 – Leisure Time

Objective

To gather data on the time the mother devotes to leisure. Certain analyses may be undertaken associating the health and well-being of the mother and the questions on the rhythm of daily life that will be added to subsequent data collections of this longitudinal study.

Measure

Question 76 is adapted from the study *Ados, familles et milieu de vie* (1994) conducted by a research team led by Richard Cloutier of the *Centre de recherche sur les services communautaires* at *Université Laval* and from the preliminary questionnaire of the *Enquête sociale et de santé auprès des enfants et adolescents* undertaken by *Santé Québec* in 1997. The question was added to the current survey to end it on a positive note. And, for the same reason, a page inviting the mother to write her comments was also placed at the end.

3.5 Self-Administered Questionnaire for the Father (SAQF)

The above-named questionnaire is completed by the biological father living in the household or by the mother's spouse/partner if the biological father is absent. It may also be completed by the absent biological father if he is eligible to do so and if he can be contacted. It comprises five sections on the following themes: temperament of the infant, the father-child relationship (PPBS), the well-being of the father (depression scale),

prior antisocial behaviours and leisure time. Some sections are taken in whole or in part from the CQCI or the SAQM.

Section 1 – Temperament of the Infant

Objective

To measure the temperament of the infant by asking the father to assess his/her degree of difficulty.

This measure is based on the fact that an infant's temperament is not only biological in origin, but also influenced by the two parents' perception of the degree of difficulty of the infant's temperament. The data gathered from fathers provide a means to examine the link between the father's perception of it and the infant's temperament, as well as inter-observer reliability (i.e., mother in the CQCI and father in the SAQF).

Measure

Questions 2 to 12 inclusively are drawn from the Infant Characteristics Questionnaire (ICQ) created in 1979 by J. E. Bates of the University of Indiana and used in Cycle 1 of the NLSCY (1994-1995). The latter pan-Canadian study was conducted in a sample of 22,831 anglophone and francophone respondents. The questions, as well as the translation of them, were pretested in a sample of 2,721 francophones from across Canada.

This scale provides a means to measure the parent's perception of the degree of difficulty of the infant, that is, how irritable or fussy it is as well as how well it adapts. Some questions in the SAQF also appear in the CQCI, which is addressed to the PMK. In the SAQR, the items "Refusal" and "Does not know" were deleted.

Section 2 – Father-Child Relationship (*ÉCOPAN - Échelle des cognitions et des conduites parentales*) Parental Perceptions and Behaviours Regarding the Infant Scale (PPBS)

Objective

To assess the behaviours and attitudes manifested by the father in his relationship with his child.

There has been little research on the father's perceptions of his role and behaviours towards his infant, though such knowledge is essential if we are to better understand the influence fathers have on the development of their children. Recall that the PPBS is also administered to the mother in the SAQM.

Measure

Six dimensions are measured using the following questions:

Feeling of self-efficacy : questions 15, 17, 19, 21, 24, 39

Perception of impact: questions 14, 23, 29, 34, 37

Tendency to coercion: questions 18, 20, 22, 25, 28, 32, 35

Affection: questions 14a, 14b, 38a, 38b, 38c

Overprotection: questions 26, 30, 31, 33, 36

Perception of the child's qualities: questions 13, 16, 27, 38

For each question, the father indicates the extent to which the statement describes his feelings or actions towards his child. To reply, the father selects a response on a Likert-type scale ranging from "Not at all" to "Exactly."

The questions related to the dimension "feeling of self-efficacy" are from Teti and Gelfand's 1991 scale; they

were adapted to make them more appropriate for infants approximately 5 months old by Michel Boivin and Christiane Piché of the *Laboratoire de recherche de l'École de psychologie de l'Université Laval*. Question 39, recommended by Michael Lamb, comes from the questionnaire Being a Parent developed by Joe Pleck of the University of Illinois. All the other questions are original; they were developed by Michel Boivin and Christiane Piché. An initial list of items was produced and the content of the items was verified by 15 specialists in the field of parent-child interactions. The list was finalized after the items were pretested in a sample of francophone and anglophone mothers in the ÉJNQ-1995 and the pilot study ÉLDEQ-1996 (Santé Québec, Jetté et al, 1997).

Section 3 – Well-Being of the Father

Objective

To gather information on the mental health of the respondent, mainly with regard to symptoms of depression.

Depression is relatively widespread. It has been shown that maternal depression has repercussions on the psychosocial adjustment of the infant. There has, however, been little research on the relationship between paternal depression and problems related to behavioural or cognitive development in the infant.

Measure

Questions 40 to 51 are from the Depression Scale (CES-D) developed by L.S. Radloff of the Center for Epidemiological Studies of the National Institute of Mental Health in the United States to measure the frequency of symptoms of depression in the general public. The presence and severity of symptoms associated with depression are measured in the week preceding the survey. An abridged version of this scale was developed by M. Boyle of Chedoke-McMaster Hospital at McMaster University and used in the Parent Questionnaire of Cycle 1 of the NLSCY in 1994-1995

(questions HLA-Q12a to 12l). The survey was conducted in a sample of 22,831 francophone and anglophone respondents. The questions, as well as the translation of them, were pretested in a sample of 2,721 francophones from across Canada.

Question 51a, recommended by Richard E. Tremblay as a means of obtaining an additional measure of postnatal depression in parents when the infants are approximately 5 months old, is from the Edinburgh Postnatal Depression Scale (EPDS). The French adaptation of the EPDS by Louise Séguin was validated by Jean-François Saucier of Ste-Justine Hospital in a sample of 369 Québec mothers 6 months after the birth of their baby. Other studies (Areias et al, 1996; Ballard et al, 1994) used it for mothers and fathers. This question does not appear in Cycles 1 and 2 of the NLSCY.

All the questions are found in CQCI of ÉLDEQ (HLA-Q12a-12m), which is conducted with the person who best knows the child – in the majority of cases, the mother. Nonetheless, in the SAQF we removed the response items "Do not know" and "Refuses" and added the instruction "Circle only one answer" to adapt them for the type of questionnaire (self-administered).

Section 4 – Overview of the Childhood, Adolescence and Adult Life of the Father

Objective

To assess the psychopathology (particularly problems related to antisocial behaviour) of fathers of infants approximately 5 months old.

As was discussed above, numerous studies have shown that children with behaviour problems are more likely to have a parent who presents a history of behaviour problems or antisocial personality. Intergenerational transmission of the symptoms is more frequent when the father, in contrast to the mother, experienced such problems himself, even if he maintained little or no contact with the child. The data collected for ÉLDEQ in

the sample of fathers living in the household or absent from it will therefore be very useful to researchers.

Measure

The majority of questions are from the NIMH-DIS (Helzer & Robins, 1998). They were translated into French and pretested in the ÉLEMQ.

This section is similar to the one in the Self-Administered Questionnaire for the Mother (SAQM – Sections 5 and 6: questions on the mother's antisocial behaviour and questions answered by the mother on the antisocial behaviours of the absent biological father). Readers may thus refer to the justifications for these sections, which are presented above.

Questions 53 and 54, which deal with stealing and fighting, appear as well in the SAQM (questions 55 and 56 of Section 5 and questions 68 and 69 of Section 6). Like question 69 in the SAQM, question 54 in the SAQF on the behaviour of fathers was adapted to some extent: Instead of asking "Were you implicated on more than one occasion in a fight," the father is asked if he "often got into fights...."

Questions 52, 57, 58 and 63, on participation in clubs or organized sports teams, are similar to questions 54, 58, 60 and 65 of the SAQM, Section 5 only.

Question 55, on involvement with the Department of Youth Protection, is similar to questions 57 (Section 5) and 70 (Section 6) of the SAQM.

Question 56 is about problems at school. It is similar to question 71, about the absent biological father's school problems, in the SAQM, although the question does not appear in Section 5 (mother's behaviour) of that questionnaire.

Question 59 asks about having been fired more than once (not taking into account layoffs from lack of work). It is almost identical to question 61, which is addressed to the mother, and is similar to question 72, about the absent biological father, in the SAQM.

Question 60 on arrests is identical to question 62 of the SAQM and corresponds to question 73 in Section 6 of that questionnaire "About Your Baby's Biological Father...."

Question 61 covers physical aggression manifested during adulthood. It is different from SAQM question 63, which addresses the mother's experience, but similar in part to question 74 of the SAQM, which is about the absent biological father. In the SAQF, we omitted the specific reference to conjugal violence to mitigate resistance to the question by the respondents.

Finally, question 62, on problems related to drug and alcohol consumption, corresponds to questions 64 and 75 of the SAQM.

Section 5 – Leisure Time

Objective

To gather information on the time the father devotes to leisure. Certain analyses may be undertaken associating the health and well-being of the father and the questions on the rhythm of daily life that will be added to subsequent data collections of the longitudinal study. This section is the same as the one included in the SAQM (Section 7).

Measure

Question 64 is adapted from *Ados, familles et milieu de vie* (1994), a study developed by the research team led by Richard Cloutier of the *Centre de recherche sur les services communautaires* at *Université Laval*, and from the preliminary questionnaire of the *Enquête sociale et de santé auprès des enfants et adolescents* conducted by *Santé Québec* in 1997. The question was added to the current survey to end it on a positive note. And for the same reason, a page inviting the father to write his comments was also placed at the end of the SAQF.

3.6 Observations of Family Life (OFL)

Objective

To assess the quantity and quality of stimulation and support provided to the child in its home environment.

The sensitivity of the parents and quality of the home environment have a significant impact on the development of the child. Studies have shown that family environment is associated with the health, growth and temperament of the child as well as with its development of language, cognitive and social skills (Bradley, 1993).

Measure

The questions in this scale are taken from the Home Observation for Measurement of the Environment (revised edition), developed by Caldwell and Bradley in 1984. The scale was adapted and translated by the *Laboratoire d'écologie humaine et sociale* of the University du Québec à Montréal.

The scale measures the emotional and verbal skills of the mother, use of restrictions or punishment, organization of the physical and temporal environment of the child, number and quality of appropriate toys, mother's involvement with her child, and opportunities taken during the interviewers' visit to diversify the stimulation and behaviour of the child.

This instrument is the only one completed by the interviewer not in the presence of the parents. The interviewers were given special training on filling out this instrument.

This ends the discussion of the sources and justifications of the questionnaires. The following sections provide information on the 1, 2, 3 Hands Game and the Baby Diary as well as the Authorization Form to Access Mother's and Infant's Medical Records.

3.7 Imitation Sorting Task (IST), 1, 2, 3 Hands Game

Objective

To measure the child's attention capacity (Alp, 1994; Baillargeon & Pascual-Leone, 1998; Pascual-Leone & Baillargeon, 1994) as well as its behavioural inhibition capacity (Barkley, 1997; Pennington & Ozonoff, 1996; Quay, 1997; Schachar, Tannock & Logan, 1993). This task is a variation on the imitation Sorting Task developed by Uzgiris and Hunt (1989).

Measure

The 1, 2, 3 Hands Game comprises two situations. In the first, the infant must grasp an object placed in front of him/her at eye level. To do so, the infant must coordinate two elements: sight and prehension (hand-eye coordination). The number of elements that the infant can coordinate simultaneously in a single action towards one goal constitutes a measure of the infant's attention capacity. Hand-eye coordination represents a key step in the second stage of sensorimotor cognitive development described by Piaget (1973, 1975). In the second situation tested, the task remains one of grasping an object, but this time an object is placed beforehand in each of the infant's hands and he/she must grasp a third object presented to him/her by first letting go of one or both of the objects already in hand. Thus, an infant with hand-eye coordination (and who has therefore attained the second stage of sensorimotor development) will not necessarily be able to grasp the object being held up, unless he/she exhibits behavioural inhibition. The capacity to inhibit behaviour may also be associated with the inhibition of inappropriate emotional responses such as fits of anger.

3.8 Baby Diary

Objective

To measure the frequency and duration of certain behaviours of the child as well as the time devoted to basic child care by the adults responsible for him/her.

Measure

This agenda-style logbook for noting the behaviours of the infant and the parents was developed for a study done in 1986 by Ronald G. Barr and his colleagues at the Montréal Children's Hospital Research Institute, McGill University, in a sample of 300 francophone and anglophone respondents (Barr et al, 1988; Hunziker et al, 1986). The data are collected over a 48-hour period.

The following behaviours of the infant are measured:

1. Crying (including related behaviours such as fussiness and unsoothable crying)
2. Sleeping
3. Feeding (sucking/bottle)
4. Awake and content

The responsible adult (mother or father) or another caregiver (eg., babysitter) indicates on a ruler-like scale when during two 24-hour periods and for how long the infant exhibited each behaviour, with the smallest unit of measure being 5 minutes.

The responses are mutually exclusive and complete: only one code may be used for each period and at least one code must be assigned in every time slot. Thus, the response "Cannot remember or absent" was added so that the respondent could honestly fill in the form without inhibition for all time periods.

The behaviours are measured over 2 consecutive days. The respondent must indicate whether the days covered were typical, thus helping to ensure that the information gathered reflects the baby's normal behaviour.

The parent's behaviours, that is, two types of parental contact with the child, are also measured for the same 2 days. The contacts measured are:

1. Body contact (carrying, rocking)
2. Care (changing diapers, bathing, dressing).

As in the case of the target child, the parent or caregiver indicates on the ruler-like scale when during the time period and for how long she/he engages in each activity, with the smallest time unit being 5 minutes. These behaviours are also mutually exclusive, but incomplete: the respondent indicates by a blank space the times she/he was not engaged in either activity, with the code thus indicating "no contact."

Secondary variables may be identified by juxtaposing the data for the parental and the infant behaviours (e.g., the person who cares for the baby makes physical contact with him when he cries).

The variables **in bed**[↓] and **out of bed**[↑] were added to the Baby Diary on the recommendation of Jacques Montplaisir of the *Centre d'étude du sommeil* (Center for the Study on Sleep) at Sacré-Coeur Hospital in Montréal who heads the research activities related to sleep in ÉLDEQ 1998-2002. These variables provide a means to assess how the mother defines sleeping through the night as well as how much time the baby spends in bed. The variables provide complementary data on sleep to that gathered with the SAQM.

A description and example (Annex 1) of the Baby Diary may be found in Volume 1, Number 1, of the collection ÉLDEQ 1998-2002.

3.9 Authorization Form to Access Mother's and Infant's Medical Records

Objective

To gather information from the medical records for the mother and infant.

Medical information on the pregnancy and delivery provide an important means to discover the prenatal, natal and postnatal factors that may be associated with health and developmental problems in children.

The form used in this data collection has a legal duration of 90 days from the date it was signed by the biological mother of the target child. It is adapted from a form developed by the *ministère de la Santé et des Services sociaux* of Québec. The latter is similar to the form used by members of the public who wish to consult or acquire a copy of their own medical record. For the purposes of the present survey, the researchers obtain a copy of the following sections of the mother's record, covering only the period during which she was in hospital for the delivery:

Mother: Complete obstetrical file

Anatomy/pathology report on the placenta

Short-term hospital admission form

Infant: Summary of the complete medical file

Results of the blood test done on the umbilical cord

The variables below were selected by Louise Séguin of the Department of Social and Preventive Medicine at the University of Montréal as a means to assess the conditions at birth affecting the physical and mental health of the mother and infant based on a preliminary examination of 40 medical files.

Obstetrical file (mother):

Date of birth of infant; sex

Duration of the pregnancy (number of weeks of gestation)

Gravidity (total number of pregnancies)

Number of children born at term; born premature

Parity (number of children born before the current pregnancy)

Number of induced or spontaneous abortions

Number of children born live

Total duration of labour

Induction

Anaesthetic

Episiotomy

Tearing

Type of delivery

Instruments used to assist delivery

Type of presentation

Baby's weight at birth

Apgar (1, 5, 10 minutes)

Summary form (mother):

Duration of hospitalization

Diagnoses

Interventions

Summary form (newborn):

Duration of hospitalization

Diagnoses

Interventions

Transfer to another institution

Ventilation

Intensive or specialized care

Physical examination of the newborn:

Height, weight at birth

Circumference of the head

Anomaly(ies)

This terminates Part I, covering the sources and justifications of the survey questions, of Volume 12 of the ÉLDEQ collection. Part II examines the data, variables and scales of the 1998 ÉLDEQ survey.

Annex – Part I

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