23rd February 2009

Hon Alannah MacTiernan MLA
Chair
Community Development and Justice Committee
Parliament House
Perth

Dear Alannah

Inquiry into the Adequacy of Services to Meet the Developmental Needs of Western Australia's Children

Attached is my submission for the above inquiry. It is in the form of a powerpoint presentation which I hope your committee will find useful, extensive explanatory notes are included in the document itself.

Last week I attended the NIFTeY conference on early childhood in Melbourne. A number of very good models were presented at this conference that are different to that outlined in the above document. The papers are currently being uploaded to the website and should be available soon at: http://niftey.cyh.com/default.aspx?p=1

I understand the Government and the Children's Commissioner are taking these issues very seriously and I hope the work of your Committee can feed into that for the good of all West Australian children.

Kind regards,

Hon Barbara Scott MLC
Member for South Metropolitan Region

Early Childhood Development

Good Policy Is Based On Sound Research

By Barbara Scott MLC

February 12th, 2009

Presentation

Part 1: The Competence of Populations in the 21st Century

Part 2: Neuroscience Background

Part 3: Early Childhood Development and Health,
Behaviour, and
Learning Trajectories

Part 4: Effective ECD Programs

Part 5: Policy, Cost and Politics

The Economist

The Search for Talent

Why It’s Getting Harder to Find

The Economist, October 7, 2006

Globalization and Talent

- A world of poachers

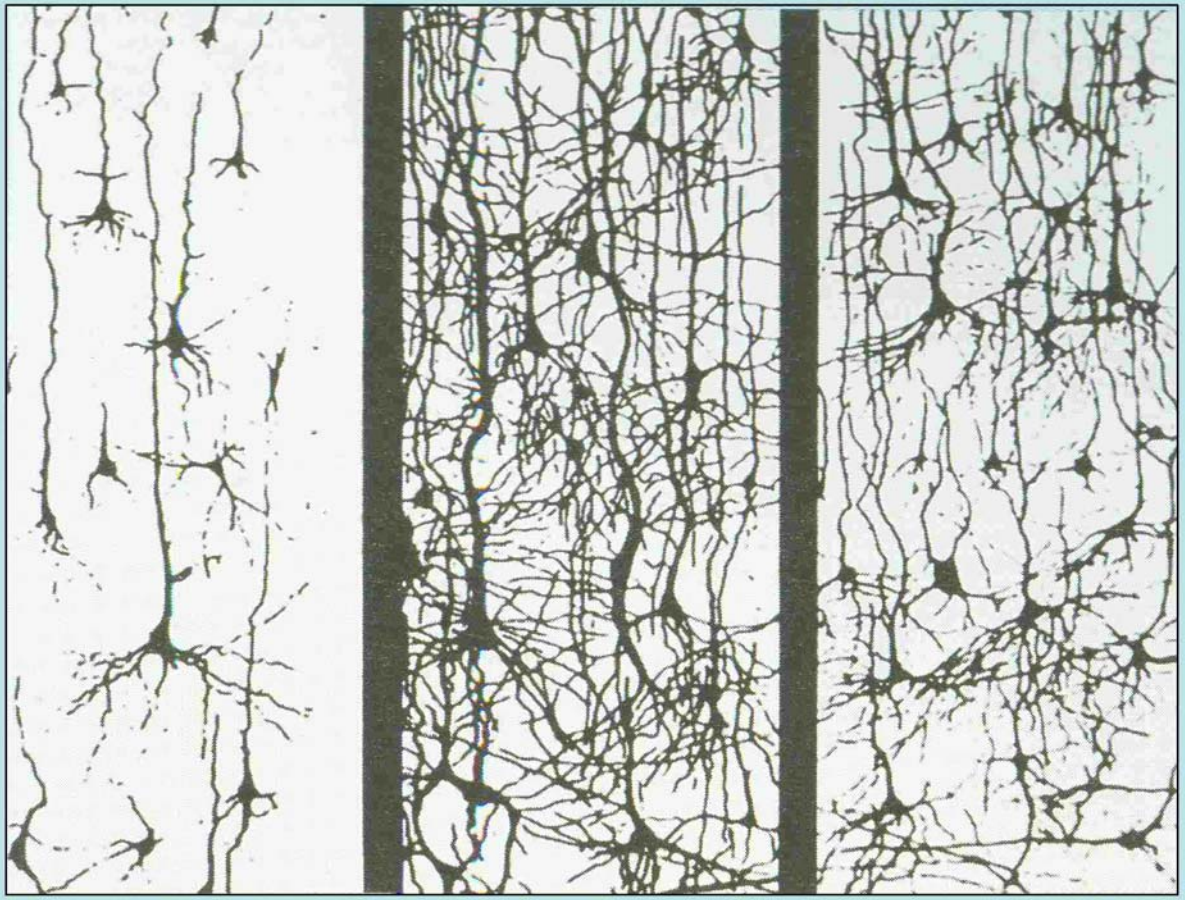
WHAT DO WE KNOW?

Experience-Based Brain Development in the early years of life sets neurological and biological pathways that affect throughout life:

- Health
- Learning
- Behaviour

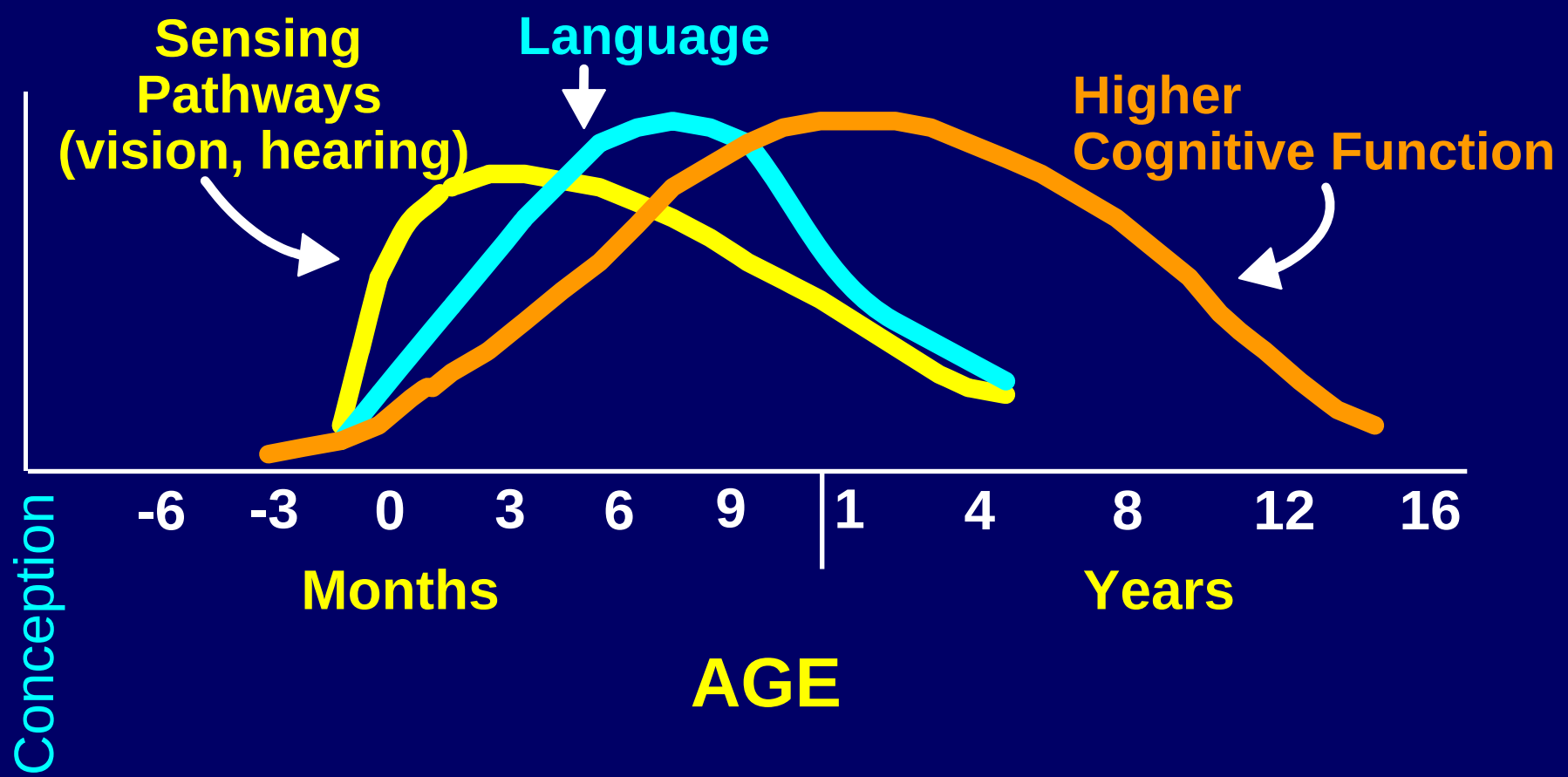
Synaptic Density

At Birth | 6 Years Old | 14 Years Old



Rethinking the Brain, Families and Work Institute, Rima Shore, 1997.

Human Brain Development – Language and Cognition



C. Nelson, in From Neurons to Neighborhoods, 2000.

Early Experience and Brain Architecture

- Affects gene expression and neural pathways
- Shapes emotion, regulates temperament and social development
- Shapes perceptual and cognitive ability
- Shapes physical and mental health and behaviour in adult life
- Shapes physical activity (e.g. skiing, swimming, etc.)
- Shapes language and literacy capability

HEALTH

Swedish Longitudinal Study – Early Child Development (ECD) and Adult Health

	Number of Adverse ECD Circumstances*				
	0	1	2	3	4
Adult Health	**Odds - Ratios**				
General Physical	1	1.39	1.54	2.08	2.66
Circulatory	1	1.56	1.53	2.91	7.76
Mental	1	1.78	2.05	3.76	10.27

* Economic, family size, broken family and family conflict

Lundberg, Soc. Sci. Med, Vol. 36, No. 8, 1993

Health Problems Related to Early Life

- Coronary Heart Disease
- Non-insulin Dependent Diabetes
- Obesity
- Blood Pressure
- Aging and Memory Loss
- Mental Health (depression)

"Follow up through life of successive samples from birth has pointed to the crucial influence of early life on subsequent mental and physical health and development."

Acheson, Donald - Independent Inquiry into Inequalities in Health, 1998

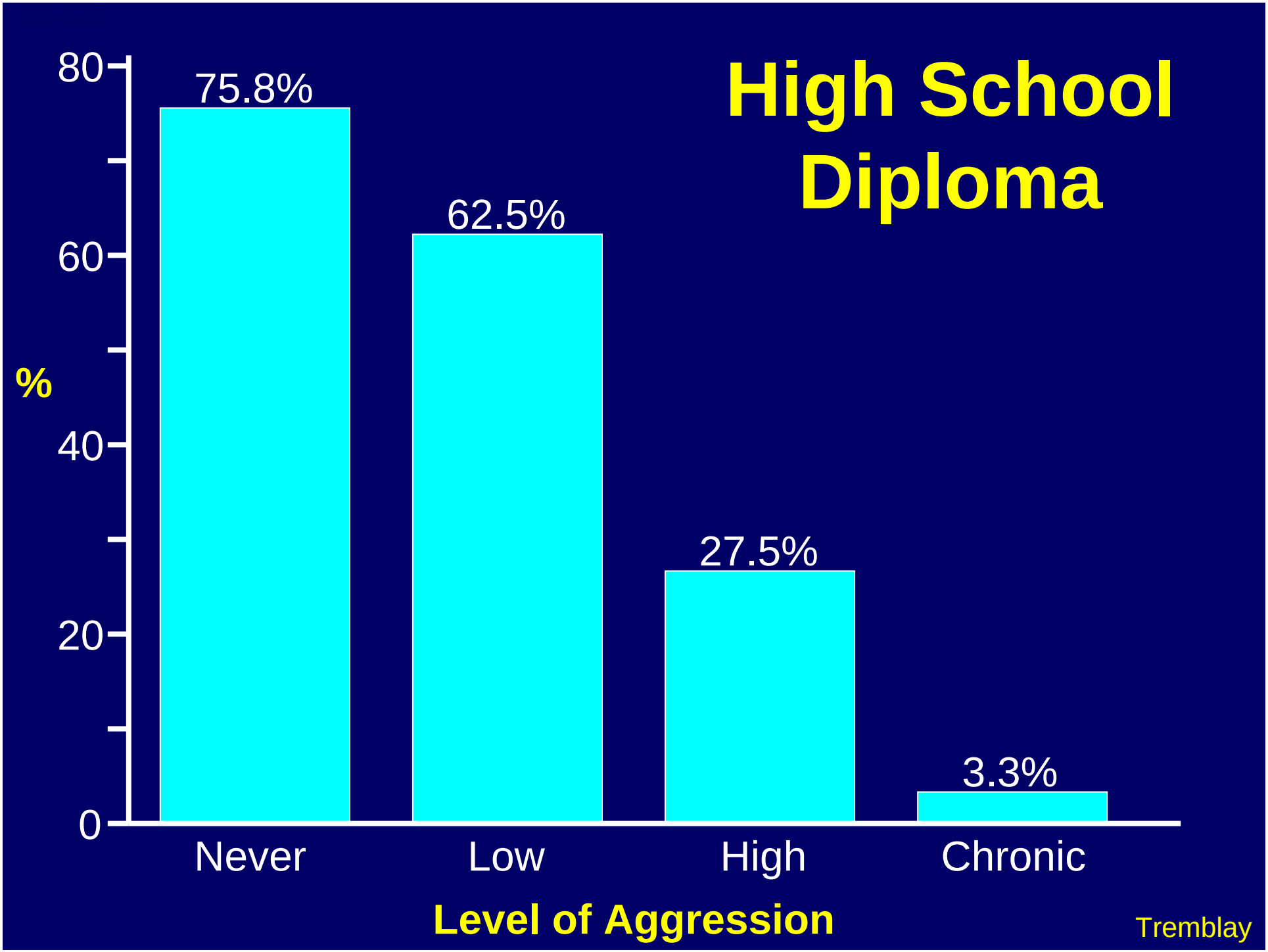
BEHAVIOUR

Early Development and Behaviour

- Antisocial
- Attention-Deficit Hyperactivity Disorder (ADHD)
- Autism
- Depression

If antisocial behaviour is manifest in children entering the school system, a number of these children will persist with antisocial behaviour in the school system, and as teenagers, some will fail in school and end up in the criminal justice system.

Tremblay, R. - Developmental Health and the Wealth of Nations, *1999*

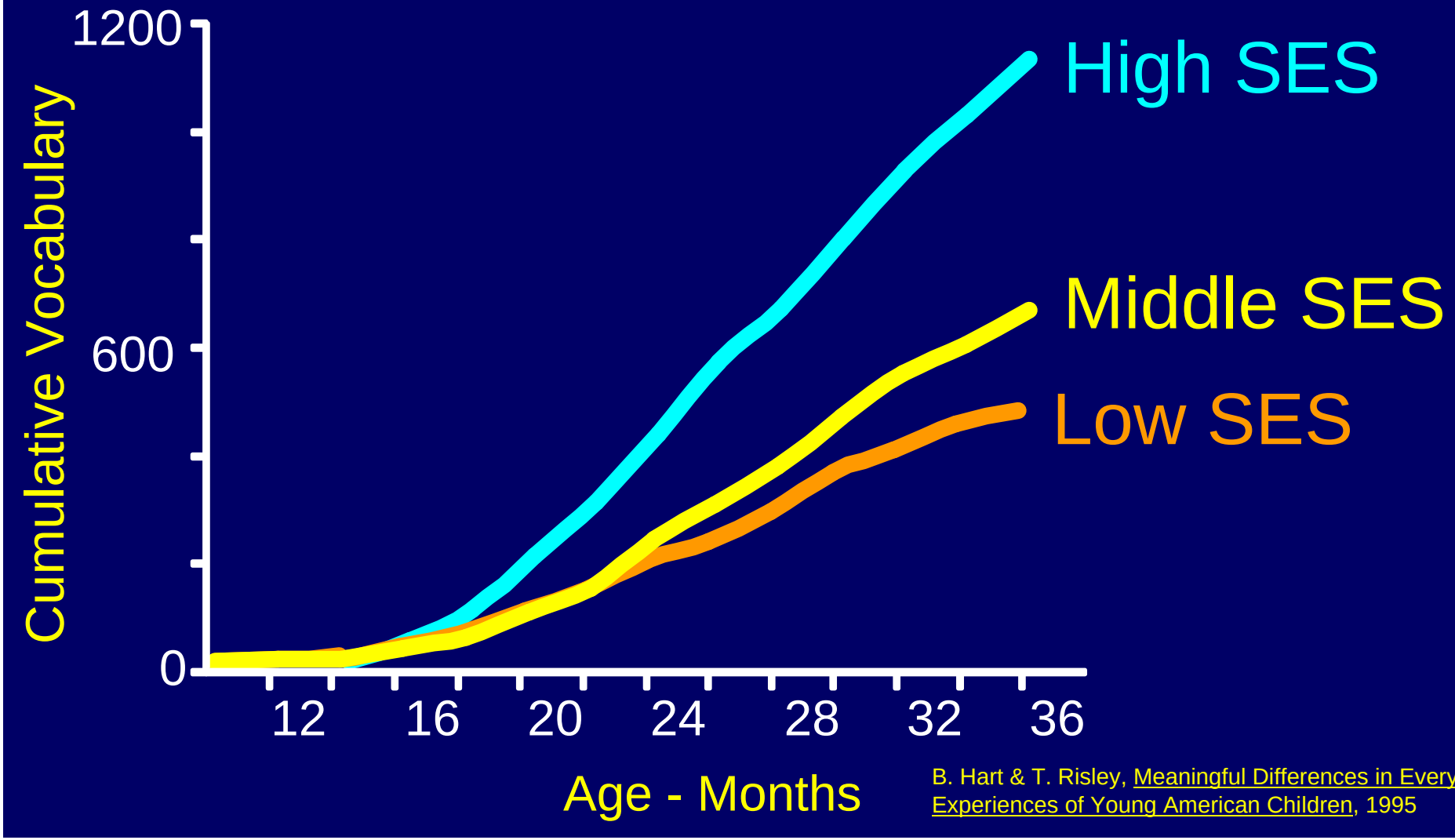

High School Diploma
80
60
40
20
0
%
75.8%
62.5%
27.5%
3.3%
Never
Low
High
Chronic
Level of Aggression
Tremblay

Language & Literacy

Early Child Development and Language

- Brain development starts early – first 8-12 months
- Sets capability for mastering multiple languages
- Sets literacy and language trajectory

Literacy – Early Vocabulary Growth



B. Hart & T. Risley, Meaningful Differences in Everyday Experiences of Young American Children, 1995

Document Literacy
1994 – 1998, Ages 16 to 65

	Level 1 and 2	Level 4 and 5
Sweden	23%	34.0%
Canada	42%	23.0%
Australia	43%	17.0%
United States	48%	18.0%
Chile	85%	3.0%
Mexico	84%	1.7%

OECD

Romanian Adoption Project – B.C.

Scores at 10.5 Years

	CB	EA	LA
IQ	108	99	85
Language Score	106	99	88
Behaviour	3%	9%	34%

CB - Canadian Born
EA - Early Adopted (within 4 months)
LA - Late Adopted (8 months or later)

L. Le Mare

U.S. Infant Health and Development Program (IHDP)

High quality centre based program in early child development showed excellent results in early child development.

Brooks-Gunn

Success by Ten
Early Child Development

- Intervene early
- Intervene often
- Intervene effectively

Ludwig and Sawhill,
Brookings Institution 2006

Early Childhood and Parenting Development Centres

Offer from conception to school entry

Quality early child development environments

Provide support for parents

Learn parenting by doing

Provide non-parental care

Link to and integrate with primary schools

Detect development problems early

OUTCOME MEASURES

NO DATA NO PROBLEM NO ACTION

A. Solari, 2006

Early Development Instrument (EDI)

- Physical health and well-being
- Social knowledge and competence
- Emotional health/maturity
- Language and cognitive development
- Communication skills and general knowledge

Vancouver EDI Reading

# of Vulnerabilities	% Failing Grade 4 Reading Test	% Not Passing Grade 4
0	13.6	17.8
1	26.7	33.9
2-3	29.5	43.1
4-5	48.4	68.3

Hertzman, HELP, 2006

Proportion of Vulnerable Children AEDI - Perth

Suburb	SES	Vulnerability 1	Vulnerability 2
Canningvale	5	17.6	7.8
Thornlie	4	17.8	10.9
Huntingdale	4	20.0	8.4
Gosnells	3	27.6	10.0
Langford	2	39.3	19.6
Maddington	1	46.9	29.7

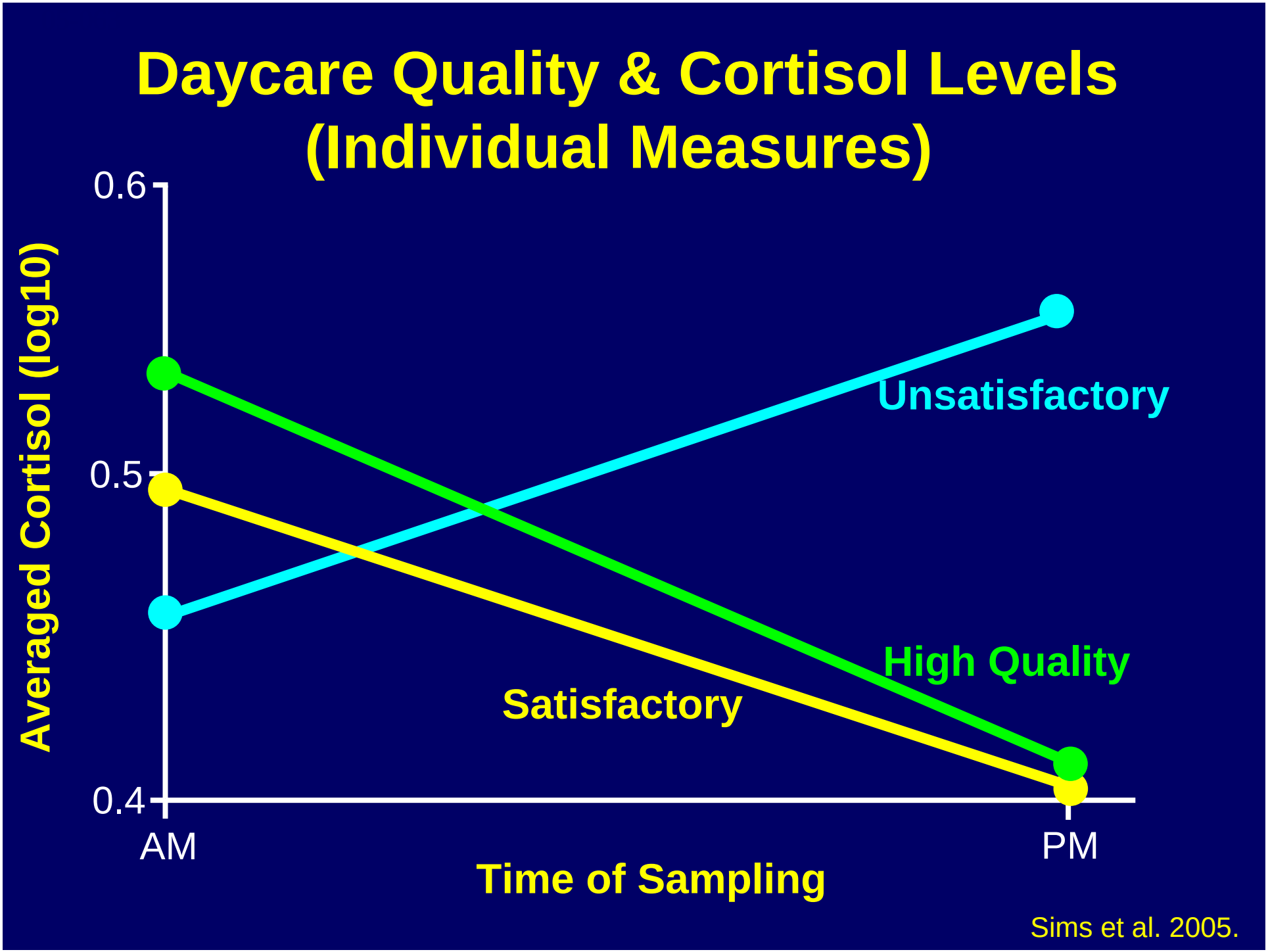
Adapted from Brinkman, 2006

The Stress Response and Quality ECD

- In high quality ECD centres, children's stress levels (cortisol) at the end of the day should be lower than in low quality centres.
- What aspects of quality ECD programs have the most impact on children's cortisol levels?
- Are some aspects of quality worth paying more attention to than others – in times of increasing economic pressure on centres, what are the most important things they need to be doing?

Sims, Parry, Guilfoyle, 2005

Daycare Quality & Cortisol Levels (Individual Measures)



Sims et al. 2005.

POLICY

Heckman - Education

- Schools contribute little to closing test score gaps among children.
- Later schooling has little effect in reducing the gaps that appear early.
- Criminal rehabilitation and adult literacy programs have limited effect.

Heckman - Education

- Skill begets skill and early skill makes later skill acquisition easier.
- Remedial programs in adolescents and young adults are economically inefficient.

Policies to Foster Quality Human Capital

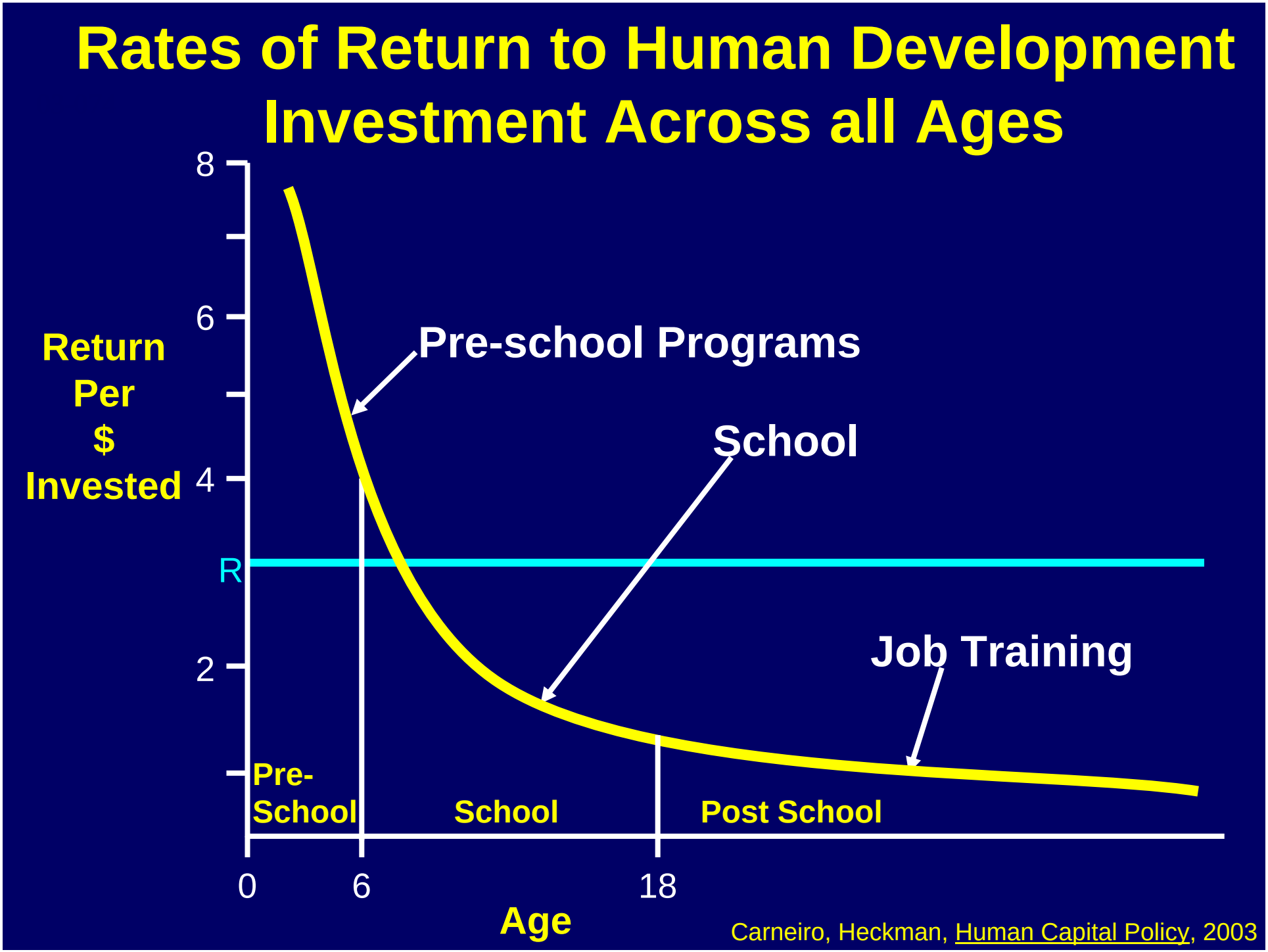
"We cannot afford to postpone investing in children until they become adults nor can we wait until they reach school - a time when it may be too late to intervene."

Heckman, J., 2001
(Nobel Prize Economics, 2000)

Perry Preschool

Costs per individual:	$15,000
Benefits at age 40:	
Less grade failure	$ 7,000
Higher earnings	$17,000
Less crime	$171,000
Total benefits (individual and society)	$195,000

Rates of Return to Human Development Investment Across all Ages



Carneiro, Heckman, Human Capital Policy, 2003

Cost Benefits and Politics

- Governments face elections every three or four years.
- Full benefits of ECD programs in adult life will take 25 years.
- Can we use intermediate measures annually like EDI that reflect future trajectories to show we are making progress?
- How do we get the electorate to understand?

The principle of free education for school-age children is already entrenched throughout the rich world; there would be nothing incongruous about extending it further down the age range.

The Economist, pg 16, July 18, 1998

South Australia

First Steps

- First Steps brings all education and health programs together
- Provides the first “connected” service for families for the first eight years of their children’s lives.

Children's Development Centres

- SA Government committed to establish 20 during their current term.
- SA being promoted as the family friendly state.

Decision

- Core of Children's Policy
- Twenty year commitment

Three Key Curriculum Components from the Abecedarian Research Studies that Can Support Child Learning in Parent and Child Centres

Joseph Sparling, Georgetown University,
The University of North Carolina at Chapel Hill, and
Teaching Strategies, Inc.

The **Abecedarian Studies** are a set of three research investigations in the USA that employ (1) randomized assignment of subjects to an experimental or a control group, (2) blinded assessments, and (3) longitudinal measurement of results. The findings of these scientifically rigorous studies have appeared in peer reviewed journals in the fields of health, psychology, and education. Briefly, these are the studies:

The Abecedarian Project. The educational intervention consisted of a comprehensive program delivered in a child care center with *LearningGames* (a set of 200 individualized, game-like activities) as the centerpiece of the curriculum. Intervention occurred for 5 years, from birth to kindergarten entry. The sample consisted of 111 poor and at-risk infants in Orange County, NC. 98% of the families in the Abecedarian Project were African American. Approximately 50% of the mothers were teenagers.

Project CARE (the first Abecedarian replication). The educational program was the same as in the Abecedarian Project with the addition of home visiting to take *LearningGames* into the children's homes. Intervention occurred for 5 years from birth to kindergarten entry. The sample consisted of 64 poor and at-risk infants in Orange County, NC. 91% of the CARE families were African American.

The Infant Health and Development Program (the second Abecedarian replication). The educational program lasted for 3 years, from birth to age 36 months. The first year consisted of home visiting to take *LearningGames* into the children's homes. The last 2 years consisted of home visiting plus the Abecedarian educational program delivered in a child care center. The sample was comprised of 985 low birth weight infants in 8 cities: Boston, MA, Bronx, NY, New Haven, CT, Philadelphia, PA, Miami, FL, Little Rock, AR, Dallas, TX, and Seattle, WA. The families were from all income levels and were 38% white or other, 53% African American, and 11% Hispanic.

These are some of the research findings of the Abecedarian Studies:

- The intervention program produced positive effects for children in socio-economically at risk families and in middle class families. The effects were greater for children in at risk families.[1]
- In all 3 research studies, children receiving the program began to have a measured IQ advantage by 2 years of age or earlier.[2,3,4]
- In all 3 research studies, children receiving the program had higher school achievement.[5,6]

- The birth to age 5 intervention had long lasting effects, with measurable results in the 3 studies seen at ages 21, 20, and 18 respectively.[6,7]
- In the 2 studies of at risk families, the intervention was associated with an increased likelihood of children getting education beyond high school, of attending a four-year college, having a skilled job, and being more upwardly mobile in young adulthood.[7]
- Outcomes for children were predicted by the degree to which *LearningGames* activities were used.[8,9]

What were the **curriculum components** of the educational program that produced these strong and lasting results, and are any of these components relevant to the Australian Parent and Child Centres? The Abecedarian educational program had a curriculum approach with multiple parts (1) individualized, game-like activities, (2) conversational reading, (3) responsive, enriched caregiving, (4) language priority, and (5) a comprehensive, conceptual curriculum framework.[*] The first three of these components will be examined for their relevance to the Parent and Child Centres.

Individualized, game-like activities. The curriculum approach of the Abecedarian educational program has game-like activities at its core. The primary conceptual rationale for the *LearningGames* curriculum derives from Vygotskian theory.[10] In this view the fundamental way in which a child's higher mental functions are formed is through mediated activities shared with an adult or more competent peer. Each of the *LearningGames* activities is one (actually a whole series) of these mediated activities. Additional rationales for the games are derived from Piaget's explanation of the developmental progression in children's cognitive and language development[11] and from the more recent concept of joint attention, the ability to coordinate attention with others in regard to objects and events.[12]

Why did we call these activities "games?" This name was chosen to emphasize that the activities were intended to be simple and fun – and that it is natural and appropriate for young children to learn through play. The action of the activity went back-and-forth, like a game between partners. Since the activities were presented in short, game-like form, they were easily understood and assimilated by child care staff, teachers, home visitors, and parents. Each game was a "bite-size bit of curriculum" presented on a single, self-contained page and designed to be clear enough for both professionals and parents to use.

In the Abecedarian Studies, *LearningGames* activities[13] were selected on an individual basis and used daily. Individual selection of activities, including periodic review and change of selection, was a key feature of the Abecedarian approach. This cyclical use of the games allowed the parent or teacher to use several games frequently for a while (typically two weeks) but also to maintain the child's interest by soon moving on to something new and/or finding ways to make the current game(s) more challenging. For each child a record was kept of the game assignments and the dates when games were introduced. Daily tallies were also kept each time the activity was done with a specific child. This record enabled the staff to be sure that no one child's curriculum activities were neglected or were unevenly meted out. The two-week period of use was long enough to allow for all aspects of good practice including observation, implementation,

[*] *The Creative Curriculum* provides a rich and appropriate conceptual curriculum framework.

and assessment. Curriculum items or games for the youngest group were often a part of general caregiving routines. The game activities were adjusted to inside or outside play, dressing, eating, etc., so that the curriculum permeated the whole day.

The assignment of games to each child was based on the game's age-appropriateness and on staff observations recorded on the child's personal developmental chart. The chart was a chronological listing of developmental facts in four major areas drawn from accepted sources. When a particular behavior of a child was observed for the first time, the date was noted beside the fact on the child's chart. In addition to providing a written progress record, the chart helped the staff see whether or not the child was developing satisfactorily in all areas. This record keeping and review was done to assure that the progression of *LearningGames* would provide the child with optimal and continuous challenges and would take the child to progressively higher levels of achievement.

Although teachers kept classroom records of *LearningGames* assignments and progress, we did not at first think of this information as research data. That was a mistake, because it is now evident that these implementation records hold valuable information for interpreting variations in child outcomes. We corrected this oversight in the Infant Health and Development Program (IHDP), the Abecedarian replication with low birth-weight infants in eight states. Teachers kept their implementation data on forms that made no-carbon-required (NCR) copies. These NCR copies were then coded as research data. The records from the first three years of life turned out to be predictive of how well the child would do (as measured by the Stanford-Binet IQ) at 36 months of age.[8,9] In IHDP three teacher- or visitor-kept implementation or process measures turned out to be particularly useful and predictive:

- Number of *LearningGames* activities implemented with the child
- Child mastery of *LearningGames*
- Parental interest in *LearningGames*.

Many of the *LearningGames* were designed to fit into recurring events such as arrival/departure, diapering and changing clothes, bottle feeding and mealtimes, washing hands and bathing, naptime, and going outdoors. These times or events are very important precisely because they are necessary to everyone's well being, happen with predictable frequency, and consume a lot of time. These routines occur not only in preschool or the child care center, but at home. Parent awareness of the link between games and daily routines is particularly important, since most parents do not, at least initially, view themselves as "teachers" with time allocated specifically to teach their children. Fortunately, there are three types of *LearningGames*:

- Games that are seamlessly integrated into the routines of caregiving
- Games in which the adult joins and enriches in-progress child play
- Games in which the adult initiates an interaction, inviting the child to join in.

The first two types may be particularly comfortable for parents. However, with support and encouragement they can learn to engage in the third type of game. Through all these games, parents gain a vision of the educational possibilities inherent in the daily events of home life and to develop a responsive approach to interacting with their children. A recent national randomized study in the USA (not one of the original Abecedarian

studies) showed that parents of three- and four-year-olds who received parent education sessions using *LearningGames* and Conversation Books gained in "Responsiveness to child." This parent trait is strongly correlated with measures of child literacy and social development at age four.[14]

Parent and Child Centres may find research-validated individualized, game-like activities particularly useful because these games are presented simply but contain deep child development concepts and information. The games are flexible enough to be used by both early childhood professionals and parents. They form a link between the Centre and the home, supporting a sense of collaboration or partnership between parents and professionals. These games can fit comfortably into the multiple delivery or service modes (group child care, family child care homes, parenting classes, home visits, public service messages) that are likely to characterize the comprehensive approach of Parent and Child Centres.

Conversational reading. The second curriculum component of the Abecedarian educational program was modeled on the way parents and children read together rather than the way reading typically occurs in the classroom. This emphasis on parent-style reading interactions was in line with an important book published in the UK the year before IHDP began in which Denny Taylor coined the phrase Family Literacy.[15] But we had begun developing our conversational reading approach and using it in the Abecedarian intervention back in the early 1970's – without the benefit of Taylor's insightful description of productive family literacy activities. At that time, although it was generally acknowledged that families who read together tended to produce children who learned to read well in school, it was not clear what aspect of the family reading experience was most important for very young children. So we took an educated guess and nominated the back-and-forth interchange between adult and child as the "active ingredient." Thus, our conversational reading approach goes back and forth, like a conversation. It would not be until the late 1980's that targeted experimental studies would support this interactive reading strategy.[16,17]

An important current-day rationale for conversational reading (and for *LearningGames*) is found in the concept of joint attention. The development of joint attention skills may be critical to early social, cognitive and language development. A longitudinal study of 14- to 17-month-olds found that one type of joint attention skill, the tendency to follow the gaze and pointing of an adult, was a significant predictor of receptive language development.[18] Another study examined individual differences in the development of the capacity of infants to respond to the joint attention bids of others (gaze shift, pointing, and vocalizing) across the first and second year and found that this ability was related to subsequent vocabulary acquisition.[12] One of the key things that the young child does in conversational reading is coordinate his attention with the adult reader's.

In the first Abecedarian study teachers were encouraged to use conversational reading with children, but we did not have a detailed description of it nor had we developed guidelines about the frequency or group size for this activity. However, since it was modeled on reading in the family, we thought it should happen frequently and in very small groups. Observing what the most effective of our teachers did, we concluded (by the time we reached the IHDP replication of Abecedarian) that conversational book reading should happen individually or in a very small group (for example, an adult reading to two children) once or twice per day per child, if the experience were to be

intense enough to contribute to positive child outcomes. Also in IHDP, the importance of parent involvement, versus just teacher effort, came to the forefront. For literacy and other learning that will prepare children for school, we concluded that children needed effective, productive interaction many hours of the day.

What is the conversational reading technique? It is an early version of what has become widely know as interactive book reading, of which dialogic reading[19] is an extensively studied version. Conversational reading has several features (e.g., active engagement and questioning) in common with interactive book reading, but also has these particular features that make it appropriate for both teachers and parents:

- Goes back and forth, like a conversation
- Appropriate from infancy through age four (or older)
- Used with one or two children at a time
- Employs an easy and memorable strategy consisting of only three parts (3S is the mnemonic device for these three parts).

Even at the youngest ages, conversational reading is a reciprocal experience composed of alternating adult and child behaviors, like a conversation. Teachers and parents learn that the response of the very young child is likely to be a looking or pointing behavior. The adult learns to accept and value these momentary looks and small actions as the preverbal child's part of the "conversation." The adult and child have gone through hundreds of meaningful and fully participatory book reading sessions before the child is expected to contribute words to the conversation. A flexible 3S strategy is described and modeled in three Conversation Books[20,21] and guides the adult to find a level of response at which each child can successfully respond at the moment. The adult then tries progressively to raise that response level by level. The levels of child response in conversational reading are see, show, and say.

See. At this level the child uses simple looking and attending responses that are available to even the youngest, preverbal children. The adult points to, talks about, and names the pictures as the child looks and listens. The adult runs a finger under large words while reading them. The adult observes the child to be sure the child usually looks at the picture the adult's finger is on. Soon, the adult stops pointing to some of the most familiar pictures and watches the child's eyes to see if the child still looks at the picture that is being named but not pointed to. This requires placing the child in a position on the lap so that the child's eye movements are visible to the adult.

Show. In the second level of response the child gives or shows his response using some form of body language. At this level the adult does not point to the pictures but says something like, "Touch the little boy's hat" or "Show me who's jumping." and waits for the child to show which picture was mentioned. The child may pat, touch, or point to the item on the page. Sometimes the child can use other body language to show or act out the answer. For an advanced child, the adult may say, "Show me the word that says 'hat'" – on a page that has only one or two words. The see and show levels of the 3S strategy can be used with developmentally very young children and with children whose first language is not the language of instruction. These levels give children a way of successfully responding, using their receptive vocabulary, long before they are able to produce the necessary expressive vocabulary words. At these two levels the teacher or

parent checks the child's comprehension as a step toward the time when the child will be able to answer in words and sentences.

Say. The final level is used as soon as the child begins to gain some spoken words. The adult tries to elicit this level of response by saying things like "What's this?" or "What will this little girl do next?" The child uses language to give his response. And, for an advanced child, the adult may point to a familiar word that the adult has read just a few moments earlier and ask, "What does this word say?" The *say* response level of the 3S strategy has a lot of flexibility. It contains everything from a young toddler's simple one-word response to a detailed paragraph from a four- or five-year-old. Teachers and parents use the *say* level to make conversational reading and the 3S strategy challenging enough for older children.

Parent and Child Centres may find conversational reading useful because it focuses squarely on emergent or early literacy, an area of skill that is recognized as central to children's later academic success. The 3S strategy is an easily-learned yet sophisticated instructional technique that can be used by parents as well as teachers and caregivers. Centres can increase children's hours of exposure to books by encouraging parents to join teachers in providing conversational reading experiences.

Responsive, enriched caregiving. Certain actions and ways of interacting with children transcend curriculum. These actions comprise a "style" of education, and they are as important as any other program element. The Abecedarian curriculum approach affirms that, in the first five years of life, education and caregiving cannot and should not be thought of as distinctly different activities.

The phrase "responsive, enriched caregiving" is intended to remind all of us (researchers, parents, caregivers, teachers, and program administrators) that "care" for an infant or young child can and should do several things at once. Care can meet the vital needs that support life and stimulate growth while also being responsive to the individual child's own preferences, abilities, and life situation. Further, care frequently can be enriched with educational content. By highlighting the pivotal role of care in the education of young children, the Abecedarian approach imbues all of the child's day with educational meaning.

Responsive caregiving with protective and stable relationships is desirable and appropriate because it fits the contemporary notion of a humanistic approach to child rearing. But what is being learned about stress and brain development provides another strong reason for giving responsive care. Through animal research, it is known that brain development is negatively affected by higher levels of stress early in life.[22] Scientists have also found, studying both center-based and family-based child care settings, that preschoolers produced larger rises in cortisol (a stress-sensitive hormone) over the day if the site had lower quality of interaction between caregivers and children.[23] Other studies with young children have shown that levels of cortisol are related to memory, attention, and emotion in children.[24] Although we do not yet know conclusively whether early experiences of mild repeated neuroendocrine stress have any influence on the developing brain, researchers still conclude that "Taken together, these data strongly suggest that sensitive, responsive, secure caretaking plays an important role in buffering or blocking elevations in cortisol for infants and young children."[24 (page 210)]

Looking at the longer term picture, responsive caregiving has recently been shown to relate to and stimulate basic areas of child development involved in school success. Using the longitudinal data set from the National Institute for Child Health and Human Development (NICHD) Study of Early Child Care and Youth Development, researchers asked how changes in the sensitivity of both mothers and caregivers from six months to six years relates to language and academic outcomes at the start of formal schooling. They found that sensitive and responsive caregiving is positively associated with better cognitive and language outcomes for children.[25]

In the Abecedarian studies we gave respectful attention to the caregiving and transitional routines that claimed much of the child care day. As the *LearningGames* activities were being developed, we tried to make sure that about half of these would be a natural outgrowth of or could easily co-occur with caregiving. There turned out to be many rich possibilities, and we felt that things were going well if a classroom visitor were more or less unaware that these integrated games were happening. At staff meetings, we particularly discussed the educational aspects and opportunities in recurring events: arrival/departure, diapering and changing clothes, bottle feeding and mealtimes, washing hands and bathing, naptime, and going outdoors. All of these had their obvious "educational additions" which did not really rise to the level of a "game." For example, caregivers learned that a part of their job was naming or talking about the actions and objects involved in each caregiving routine. And, when the child was ready, caregivers invited the child to take the lead in naming the caregiving actions and associated objects.

Going beyond the notion of naming and talking about things, we began to develop strategies for transforming this adult and child talk into a series of conversational turns that could eventually develop into extended discourse. This became known as the 3N strategy. It gives parents, caregivers, and teachers a pattern and intentional approach for making caregiving both responsive and enriched. The N's – notice, nudge, and narrate – are easy to learn, remember, and use. As explained below, parents and teachers encourage and instruct children by the cycle of noticing a young child's sounds (or words) and activities; then using what is noticed as an springboard to nudge or to encourage the child to try something new or more difficult, and finally narrating or using words to tell a story about what is happening (what the child is doing). Once parents and teachers learn the notice-nudge-narrate sequence, it can become a daily habit that occurs many times every day.

Notice. This is something that adults responsible for young children are constantly doing. It is easy to notice something that obviously demands attention, such as the child's distressed cry. However, in the 3N strategy the adult partner (teacher, caregiver, or parent) broadens his or her understanding of the term and notices a wide range of child behaviors. This kind of noticing requires an active effort on the adult's part. It involves watching, listening, and waiting for clues about the child's readiness for an activity or response to an activity. With very small babies, it is especially important to notice little things they do. Watching the infant's eyes will help determine if she is following the caregiver's movements or looking at the toy or book used in the game. Holding her can provide clues to whether she is relaxed and responsive, or tense and uncomfortable. Smiles and cooing are sure signs that things are going right, but other cues about how the child is feeling are not as obvious. A subtle message, for example, may be just the lowering of eyelids to break eye contact, or a slight turn of the head to show stimulus overload or perhaps loss of interest. Older children use many similar gestures and signals to communicate. As their language skills and vocabulary develop,

their verbal responses will become an important part of their communication, but the child will continue to communicate in subtle, non-verbal ways. If a child moves closer or puts her hand on the adult's arm, she may be indicating that she is confused. If she starts messing up the toys or other play materials, she may be frustrated or bored. Noticing and interpreting these unspoken messages will help the adult to adapt the activity to suit the child's current status and thus will lead more smoothly and surely to developmental progress.

Nudge. Here the adult gently moves things along. The strategy involves both getting an activity started and/or prompting the child to take the activity a step further. The adult focuses the child's visual attention on an object or task by pointing, holding up toys or other materials, or handing an object to the child. Verbal nudging is particularly significant in literacy activities, and involves asking questions, suggesting possible manipulations of objects and materials, and imitating the sounds the child is making or the actions the child is taking. Questions may range all the way from a raised eyebrow to sophisticated *why* and *how* questions. The child's responses to questions are sometimes actions and sometimes words. As the child's oral language ability increases the adult seeks an increasing proportion of verbal responses.

Narrate. In the third step of the 3N strategy the parent, caregiver, or teacher narrates or describes the child's action or response to the adult's nudge. The narration tells the story, in real time, of what the child is doing. By describing current actions and events, the adult increases the child's cognitive awareness of the significance of his or her own actions. Through narration, actions that were intuitive or random are raised to a level of consciousness where the child can purposefully repeat or modify them. Another function of the adult's narration is to add new information about the objects and processes in the activity. Items may be labeled, choices described, and options enumerated. Simply narrating the choice, "You chose the red ball" adds color information, celebrates the choice, and affirms its significance. These techniques are used not only with play objects but also with print material, as in, "You turned two pages" or "Yes, you pointed to the picture of the monkey's shoes." The adult's narration also offers positive feedback. Like all of us, young children thrive on support and encouragement, and the caregiver's positive attention nurtures the child's learning behaviors. The adult may offer positive feedback if the child tries an action, does one part, or successfully completes an entire activity. Much narration accomplishes more than one purpose. For example, descriptions of the child's actions, given in a positive tone, can double as praise, "You stacked two blocks!" The positive affect that colors the words of the narrator conveys the message that the child is competently doing a worthwhile activity. The adult's narration must be thought of as including all the nonverbal feedback expressed to the child. Natural responses such as clapping and showing facial delight are important and effective parts of the narration package.

Noticing what the child is doing is always the point of departure. What the adult observes guides the selection of an appropriate nudge to get things going. Once the child begins to respond, initiate, or talk the adult takes on the role of narrator. Often the narration tracks what the child is doing, but at other times it guides the child's action in new directions. Whenever the adult notices a change in the child's behavior, the three-part cycle of the language interaction strategy renews itself and begins again.

Significantly, this 3-part, cyclic strategy does not focus on briefly naming something or making an isolated comment – it keeps the "conversation" going in a

direction that relates to the idea or action in which the young child is currently engaged. This is an early version of "extended discourse,"[26] a type of language engagement that is especially helpful in building children's language abilities.

Parent and Child Centres may find responsive, enriched caregiving a concept that has broad utility for their program. Like *LearningGames* and conversational reading, it can fit into the multiple service modalities that are likely to characterize the comprehensive Parent and Child Centre approach. Professionals can use and model this approach and parents will find it comfortable and familiar. In fact, training on responsive, enriched caregiving is mainly a matter of consciousness raising and bringing adult behaviors to the level of intentionality. The 3N strategy supports the critically important area of child language development.

Three curriculum components developed and tested in the multiple, rigorous Abecedarian studies have the potential for supporting child learning in Australia's Parent and Child Centres:

- Individualized, game-like activities (*LearningGames*)
- Conversational reading
- Responsive, enriched caregiving.

These Abecedarian curriculum components do not represent an exclusive approach but can be used in combination with other curriculum resources. They are portable and flexible enough to fit into many service delivery modes or styles. We believe that these three curriculum components are the most likely central "carriers" of the positive and long-term Abecedarian intervention effects.

Contact information:

sparling@unc.edu

MindNurture, Inc
500 Millstone Drive, Suite 101
Hillsborough, NC 27278
USA

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