Inclusion without Potential: Disability and the Biopolitics of Neuro-logical Human Capital Investments

by

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A thesis submitted in conformity with the requirements for the degree of Doctor of Philosophy
Graduate Department of Public Health Sciences
University of Toronto

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Abstract

Parents challenged Canada’s National Children’s Agenda (NCA)—a policy umbrella for neoliberal investments in early childhood introduced in 1999—for mobilizing a brain-focused conceptualization of child development they felt excluded children with disabilities. This conceptualization cast early brain formation as a critical developmental stage and investment phase for human capital development at the population level, assembling a linkage between brain-economy-population that I term the “neuro-logical” model. Although studies show that political efforts to invest in human capital through early childhood reproduce inequality for many, few have considered the exclusionary effects on children with disabilities. To elucidate the inclusion/exclusion of disability, I examine how developmental differences were discursively incorporated in attempts to mobilize and operationalize the neuro-logical model in policy between 1994-2011. Drawing on Lemke’s approach to Foucauldian biopolitics, I conceptualize the NCA as an effort to assemble knowledge and strategies for optimizing life at the population level, and read the neuro-logical model as a strategy to calibrate biopolitics to both emergent neuroscientific “truths” and rapid social and economic change. Using a critical interpretive, “anthropology of policy” methodology that analyzes policy as both discourse and governmental technique, I analyze the neuro-logical model through relevant documentary sources. While the NCA was rhetorically about investing in all children, it was more directly about investing in normal and normalizable brain development as a means to optimize population vitality and ensure global economic competitiveness. I develop the argument that the possibilities for including disability as a form of developmental difference were inscribed in the neuro-logical
model itself. Specifically, cognitive impairments that were considered permanent were positioned as the non-normalizable remainder in the investment agenda. Framing the investment in early childhood in neuroscientific terms obscured both the discursive reproduction of disabled children’s marginality and the deflection of alternate conceptualizations of human value, child potential, and inclusion. This thesis contributes to theorizing how models of normal and normalizable child development shape the discursive incorporation of children with disabling differences, with implications for policy, theory, and practice. Ethnographically rich policy research is needed to investigate how policy models are reproduced or transformed through local implementation.
Dedication

Dedicated with gratitude

to Aiden, who inadvertently pushed me to engage policy worlds;

to Susan, who held the space for me to explore my own potential, worth, and belonging;

and to everyone engaged in creating enlightened society
Acknowledgments

This dissertation would not have been possible without the support and encouragement of many faculty, colleagues, friends, and loved ones over the years. It is humbling to reach the stage at which these acknowledgments can be written, because I now realize the generosity that was offered to make it possible.

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generosity—made me feel quite welcome in the world of interpretive policy analysis. I would like to thank Esther for extending support and advice to a total stranger.

The ideas that I bring to my thesis took shape through many conversations in different places across a number of years. I would like to thank the colleagues and friends with whom I exchanged and developed ideas, including Marianna Valverde, Kathryn Libal and other members of the University of Kansas women’s studies reading group, Marianne Bloch and other members of the UW-Madison early childhood reading group, Denise Gestaldo, Sharon Gartland, and Marian Slaughter. Some of the most fruitful ideas in this research journey grew out of these conversations, and I am very appreciative of the intellectual exchange. I also want to extend my thanks to the colleagues who offered support and encouragement of my decision to complete this dissertation. At the Waisman Center, I could not have done this work without the support of Daniel Bier. The colleagues, both close to home and in my broader network, who offered encouragement and support are too numerous to name here, but I am very grateful for their encouragement.

Finally, I would like to acknowledge the individuals with developmental disabilities and their family members whom I have had the opportunity to meet, learn from, and learn with over the past few years. I would also like to sincerely thank the individuals and agencies that offered genuine acceptance to my son and our family over the years, most especially United Cerebral Palsy of Dane County, and the Special Olympics’ Project Unify. The authenticity and simplicity of this acceptance created the possibility of not settling for inclusion that is pasted over judgment and indifference, even when these are subtle.
# Table of Contents

Inclusion without Potential: Disability and the Biopolitics of Neuro-logical Human Capital Investments ................................................................. ii

Dedication ........................................................................................................ iv

Acknowledgments ............................................................................................. v

Table of Contents .............................................................................................. vii

List of Tables ...................................................................................................... xi

List of Figures ..................................................................................................... xii

List of Appendices ............................................................................................. xiii

Abbreviations ..................................................................................................... xiv

Prologue: Points of Departure and Discovery ...................................................... xvii

Chapter 1: Introduction ....................................................................................... 1

1 Introduction ...................................................................................................... 1

1.1 Background .................................................................................................. 5

1.1.1 Childhood and Disability as Priorities During Social Policy Reform ........... 5

1.1.2 Contextualizing Concern Over Disability Exclusion ............................... 11

1.2 Analytic Approach ...................................................................................... 16

1.3 Research Purpose and Questions ................................................................. 18

1.4 Study Design ................................................................................................ 19

1.5 Organization of the Thesis .......................................................................... 20

Chapter 2: An Analytics of Biopolitics and Exclusion ........................................... 22

2 Introduction ...................................................................................................... 22

2.1 Biopolitics and Human Capital ................................................................... 22

2.1.1 Biopolitics ................................................................................................ 22

2.1.2 Human Capital ........................................................................................ 29
2.2 Theorizing Exclusion ........................................................................................................... 32
  2.2.1 Normality ..................................................................................................................... 33
  2.2.2 Modes of Incorporation .............................................................................................. 37
  2.2.3 Modes of Exteriorization ............................................................................................ 40
  2.2.4 Diagramming Incorporation ...................................................................................... 42
2.3 Conclusion ......................................................................................................................... 43

Chapter 3: Literature Review: Child and Brain Development in the Biopolitics of Population ... 45
3 Introduction ........................................................................................................................... 45
  3.1 Childhood in Modern Biopolitics .................................................................................... 46
    3.1.1 The Modern Category of the Child .......................................................................... 48
    3.1.2 Modern Expertise and Governmental Techniques .................................................. 51
    3.1.3 Exclusionary Effects ............................................................................................... 54
  3.2 Child and Brain Development in Neoliberal Governmentality ........................................ 57
    3.2.1 Summary of the Literature ..................................................................................... 58
    3.2.2 The Idea of Early Childhood in Neoliberal Policy Projects ..................................... 61
    3.2.3 Expert and Authoritative Knowledge ..................................................................... 65
    3.2.4 Neoliberal Exclusionary Effects ............................................................................ 68
  3.3 Conclusion ......................................................................................................................... 73

Chapter 4: Methodology and Study Design ........................................................................... 76
4 Introduction ........................................................................................................................... 76
  4.1 Methodological Approach .............................................................................................. 76
  4.2 Study Design and Methods ............................................................................................ 80
    4.2.1 Selection of Documentary Sources .......................................................................... 81
    4.2.2 Data Management .................................................................................................. 87
    4.2.3 Advantages and Limitations of the Study Design .................................................... 88
  4.3 Analysis and Interpretation .............................................................................................. 89

viii

### 5 Introduction

#### 5.1 Background

- **5.1.1 Policy Context**
- **5.1.2 Child, Health, and Human Resources before Neuro-logic**
- **5.1.3 Neuro-logical Policy Expertise**

#### 5.2 Neuro-logic in Canadian Social Policy

- **5.2.1 1994-1998: Stimulating Connections**
- **5.2.2 1999: Connecting to Solutions**
- **5.2.3 2000-2011: Proliferating Connections**

#### 5.3 Conclusion

### Chapter 6: “Mismatch of Opportunity and Investment”: Neuro-logical Strategies for Human Capital Development

#### 6 Introduction

#### 6.1 Knowledge of Human Development

- **6.1.1 Normal Child Development**
- **6.1.2 Developing Brain as Biological Pathway to Outcomes**
- **6.1.3 Early Development as Critical Stage of Human Development**

#### 6.2 Optimizing the Development of Human Capital

- **6.2.1 Childhood as Having Investment Value**
- **6.2.2 Critical Stage as Investment Phase of Population Development**
- **6.2.3 Brain Development as Biological Basis for Human Capital**

#### 6.3 Conclusion
List of Tables

Table 1. Typology of Exclusion/Inclusion Aligned to Analytics of Biopolitics………………..33
# List of Figures

Figure 1. Health Canada Anti-Smoking Campaign Poster ................................................................. 14

Figure 2. Modes of Incorporation and Exteriorization ...................................................................... 43

Figure 3. Papadopoulos’ Diagram of Different Approaches to the Brain-Body ......................... 68

Figure 4. Reference to Neuro-logical Model in *Investing in Early Child Development* ........ 122

Figure 5. Brain Development Depicted and Described in an UEY Community Newsletter..... 126

Figure 6. Critical Periods of Brain Development from an UEY Family Resource Guide.......... 127

Figure 7. Old and New Thinking about the Brain ........................................................................... 133

Figure 8. Illustration of Investment and Enhancement Phases of Human Development .......... 148

Figure 9. Illustration of Mismatch Between Opportunity and Investment .................................. 149

Figure 10. Human Development Viewed as Unifying Explanatory Model............................... 152

Figure 11. Illustrations of Human Development Across Levels of Social Environment .......... 166

Figure 12. Vulnerability as a Sub-set of Normal Human Development ..................................... 168

Figure 13. Permanent Impairment in Relation to Investment and Inclusion ................................ 173
List of Appendices

Appendix A: Timeline of References to Brain Development in Policy Sources......................... 228
Appendix B: Timeline of Key Policy Sources........................................................................ 229
Appendix C: List of UEY Communities................................................................................. 230
Appendix D: List of Key Documentary Sources ...................................................................... 231
Appendix E: Excerpt from Table of Inclusion and Exclusion Decisions for House of Common Committee Evidence................................................................. 238
Appendix F: UEY Community Information Sheet .................................................................. 239
Appendix G: UEY Community Poster .................................................................................... 241
Appendix H: UEY Community Newsletter .............................................................................. 242
Appendix I: Excerpt from UEY Family Resource Guide.......................................................... 243
Appendix J: UEY Kings County, Nova Scotia Community Data Maps .................................. 244
Appendix K: UEY Dixie Bloor Community Data Maps............................................................ 245
Abbreviations

ACPH: Federal/Provincial/Territorial Advisory Committee on Population Health

CAPC: Community Action Program for Children

CECD: Council for Early Child Development

CIAR: Canadian Institutes for Advanced Research (later abbreviated CIFAR)

CPRN: Canadian Policy Research Network

ECDA: Early Childhood Development Agreement

ECDI: Early Childhood Development Initiative

EDI: Early Development Instrument

FPT: Federal/Provincial/Territorial

HEAL: House of Commons Standing Committee on Health

HOC: House of Commons

HRDC: Human Resources Development Canada

HRPD: House of Commons Standing Committee on Human Resources and the Status of Persons with Disabilities

NCA: National Children’s Agenda

NCB: National Child Benefit

NLSCY: National Longitudinal Survey on Children and Youth

OECD: Organization for Economic Co-operation and Development

PALS: Participation and Activity Limitations Survey
**SCYR**: Sub-Committee on Children and Youth at Risk, House of Commons Standing Committee on Human Resources and the Status of Persons with Disabilities

**SSPD**: Sub-Committee on the Status of Persons with Disabilities, House of Commons Standing Committee on Human Resources and the Status of Persons with Disabilities

**SUFA**: Social Union Framework Agreement

**UEY**: Understanding the Early Years Initiative
“[D]ifference must be suppressed to maintain diversity (which ultimately seeks sameness). Thus, ‘we are all different, therefore we are all the same’ becomes ‘we are all the same because we aren’t that kind of different.’ ‘That kind of different’ would refer to that which cannot be chosen—the intractable, stubborn, resistant, and yet constitutive parts of neoliberal capitalism—zoe, bare life, the ethnic other, the abject, the disabled—that which cannot be transmuted into the neoliberal subject of postmodernity.”

Lennard J. Davis, *The End of Normal* (2013: 13-14, emphasis in original)

“We could write a history of limits – of those obscure gestures, necessarily forgotten as soon as they are accomplished, through which a culture rejects something which for it will be the Exterior; and throughout its history, this hollowed-out void, this white space by means of which it isolates itself, identifies it as clearly as its values.”

Prologue: Points of Departure and Discovery

Over the past ten years, I have become more familiar—sometimes suddenly, sometimes gradually—with a world of developmental disabilities. Although this world existed far before it became a lived experience for my family, I was essentially blind to it. I have heard other parents mention the experience of suddenly seeing disability everywhere after having their own direct experience parenting a child with a disability. Suddenly, the wheelchair, cochlear implants, augmentative communication device, or motor tics we as parents have become intimate with in our own family life are now visible elsewhere. The analysis provided in this thesis grew out of my unexpected encounter with disability, and what this subsequently exposed to my view. In particular, it led me to question how notions of normal and ideal childhood incorporate, or fail to incorporate, disabled childhoods. Because I also now do “applied” work in the areas of early childhood policy and developmental disability, I also find myself wondering how policy accounts of childhood may affect children with developmental disabilities. It feels imperative to understand how disability is incorporated or marginalized when concepts of childhood are mobilized in public health and social policy, and to articulate how these findings can be applied to support more genuinely inclusive policy.

Although I pursued my graduate training and doctoral research in Canada, my understanding of “developmental disability” is shaped largely by my training and experience while raising my son in the United States. Specifically, I graduated from the Wisconsin Leadership Education in Neurodevelopmental and Related Disabilities (WI LEND) certificate program, one of 43 LEND programs nationally sponsored by the U.S. Maternal and Child Health Bureau (MCHB). WI LEND provides interdisciplinary training to improve systems of care that promote both the prevention of disabilities and access to family-centered, community-based services and supports for children with developmental disabilities and their families. My training employed the definition of developmental disability from the (United States’) Developmental Disabilities Assistance and Bill of Rights Act of 2000 (DD Act, P.L. 106-402). In the United States’ DD Act, the term “developmental disability” means “a severe, chronic disability of an individual that is attributable to a mental or physical impairment or combination of mental and physical impairments; is manifested before the individual attains age 22; is likely to continue indefinitely;
results in substantial functional limitations in 3 or more of the following areas of major life activity: self-care, receptive and expressive language, learning, mobility, self-direction, capacity for independent living, economic self-sufficiency; and reflects the individual’s need for a combination and sequence of special, interdisciplinary, or generic services, individualized supports, or other forms of assistance that are of lifelong or extended duration and are individually planned and coordinated” (DD Act, P.L. 106-402 sec. 102(8)(a)). In the U.S., states may adopt definitions of developmental disability that are more but not less comprehensive than the federal definition. The situation is different in Canada, however. In 2003, the Human Resources Development Canada publication Defining Disability: A Complex Issue noted that, “confusion exists between [disability] definitions, eligibility criteria and program objectives” (Human Resources Development Canada 2003: 2). The term “developmental disabilities” is mentioned only once in this document, and it is not specifically defined (Human Resources Development Canada 2003: 9). The Canadian Association for Community Living identifies “developmental disability” as one acceptable term for “intellectual disability,” which itself replaced the older terminology of “mental retardation” (see http://www.cacl.ca/about-us/definitions-terminology, accessed on March 30, 2015). This is a narrower definition of developmental disability than the one shared in my LEND training. Because it conflates developmental disability with the more specific intellectual disability, I do not find it very useful. My dissertation work is no doubt shaped by the definitions and principles of the training I pursued, but I find that disability is not easy to pin down. Defining Disability concludes that, “a single harmonized definition of disability across the Government of Canada may not be desirable or achievable and that the scope of solutions to address the broader issues identified go beyond definitions. In reaching these conclusions, the paper illustrates the various tensions between the concept of disability, program design and the horizontal nature of disability programs” (Human Resources Development Canada 2003: 2).

My exposure to developmental disabilities began when I relocated from Canada to the U.S. and had my son. This exposure subsequently transformed my thinking about my doctoral work. I proposed my research as a study of how Canadian policy pertaining to population health and productivity situated child development as an asset for, or investment in, governing the population. My proposed study seemed like an extension of my longstanding interest in the social construction of normal and ideal childhoods. I have always associated this interest with a tattered copy of Mother’s Encyclopedia: Expert Advice on Child Care and Family Living (Kanof
and Smart 1969[1965]) that I still have in my book collection. When I was growing up, this parenting book sat amongst an abundant collection of fiction on my family’s bookshelf, and as an avid reader, I read this along with everything else. I do not remember a point in my life at which I did not have a memory of Plate H8 (Kanof and Smart 1969: 577), which depicts very gender-stereotypical girl and boy bedrooms, reflective of the 1950s. Suffice it to say the image stuck with me for the degree to which it failed to match my own self-image as a girl. I therefore grew up having concluded that we make up ideas about children, and then (perhaps) shape the world (and their bedrooms) to match these ideas. I have always been curious about how such ideas are produced and come to be more or less shared by society as a whole. How are ideal kinds of child and childcare identified? Which ideals seem important to use in educating society as a whole, and why? Which ways of being a child are wrongly gendered or wrongly reared? (I have now added the question, which ways of being a child are wrongly abled?). This seed developed into a longstanding interest in the intersection of childhood, the body, and the government of populations.

For my thesis research, I was particularly interested in the emergence of a very brain-focused construct of early childhood in Canadian social and health policy. I read this account first in The Early Years Study: Reversing the Real Brain Drain (McCain and Mustard 1999). What fascinated me most about this document was that it placed so much emphasis on the brain, and purported to synthesize all the relevant brain-related research that could tell us how children matter to government, for ensuring a vital future population. The obviousness of everything depending on the three earliest years of brain development seemed to me rather sudden and very limited. To some extent, this document has become a new “tattered volume,” whose representation of childhood sticks in my memory. I found myself asking the very basic questions of why this conceptualization of childhood seemed so useful to the governing process now, and what difference it might make for children. If this is what was so desirable and valuable about childhood, what (and who) was less desirable and less valuable? The Early Years Study served as evidence for the conceptual model of early childhood development used in Canada's National Children's Agenda (NCA), leading to my interest in that particular model as a case study. While the production and management of difference were central to my original research questions, I intended to study the neurodevelopmental model of childhood in Canadian policy discourse, with no consideration of disability per se.
Experientially, discovering disability as a form of difference was like discovering the gorilla that conspicuously crosses the screen in the famous psychological studies of inattentional blindness. In a viral video demonstrating this phenomenon, a group of people passes a ball to one another. The viewer’s attention is directed toward counting the number of passes. As the scene unfolds, a woman in a black gorilla costume walks through the scene, pounding her chest. Novice viewers typically miss seeing the gorilla. Similar studies have tracked eye gaze and have noted that viewers often look directly at the unexpected object, but they do not “see” it. Either way, it is hard to subsequently watch the same video and not see the gorilla. The term inattentional blindness suggests blindness to things to which we are not attending. This phenomenon has also been discussed as perceptual blindness, or (in a reversal of emphasis) as attention capture. We see what we pay attention to, we see what we expect to see, and perhaps we see what we want to see. This is not surprising from the point of view of the interpretive approach I adopt in this research. However, the unseen gorilla is a particularly compelling example of a specific kind of blindness to something that is, quite literally, right before the eyes. Similarly, I did not see disability in my thesis research until I experienced it in my family and work life.

While this, and subsequent, experiences with my son revealed a world of autism to me, a broader world of disability was revealed only by subsequent career decisions. Because child care, summer camps, and afterschool programs felt they were neither prepared nor obliged to include my son, I put my doctoral work on hold and began work at a University Center of Excellence on Developmental Disabilities at a university in the United States. For the past six years, I have trained and worked in the disability field through a university-based center focused on disability research, service, training and outreach. This has included (and continues to include) providing statewide training and outreach, participating in cross-sector collaborative initiatives related to autism spectrum disorders and early childhood, and coordinating the interdisciplinary leadership training program in developmental disabilities. Through my professional roles, I have contributed to developing and disseminating health education messaging and materials related to child development and developmental delay, as well as to preparing best practice guidance on early childhood screening and ongoing assessment. Every year, I help deliver disability and public health curriculum as well as leadership training to approximately 30 trainees (including graduate students, community professionals, family members, and self-advocates) from over 14 disciplines relevant to children with developmental disabilities. This professional role has given me ample direct experience participating in and observing policy processes at local, state, and
regional levels. It has also made it unavoidably obvious that concepts of child development are mobilized routinely in public policy, and that these reflect a mix of individuals’ assumptions, disciplinary perspectives, political maneuvering, funding streams, and lay interpretations of the newest scientific evidence (particularly neuroscience) as filtered through public relations offices and writing that summarizes and interprets the significance of findings for lay audiences. Scrutinizing the political work and everyday effects of policy concepts of childhood seems imperative, particularly with respect to how vulnerable and marginalized populations are impacted.

As my son eventually settled into routines of support and accommodation, I returned to the work of completing my doctorate with a point of view that was transformed by my experiences. When I revisited my stacks of policy documents, I had the startling realization that disability had been a policy priority alongside childhood in the period I was researching—but I had never seen it. Initially, this struck me only as an inconvenience for the study. I had focused on the prominence of childhood as a policy priority, and the presence of disability seemed to challenge this basic premise. I was then struck by another obvious absence that I could not subsequently un-see: children with developmental disabilities were virtually absent from the NCA and its representations of child development, and children were equally missing from the disability issues as detailed under the umbrella of the social union initiative (the broader policy context for the NCA). I followed this insight with a closer review of NCA-related documents, and found that the disability community had raised a similar concern. The fact that personal experience exposed this absence (to me and to the Canadian disability community, separately) when my academic interest did not (even though I was focusing on how the policy construct of childhood shapes what is desirable and undesirable about childhood) led me to conclude that this absence was an important phenomenon to investigate.

My experience having a child with developmental challenges, who was eventually diagnosed as having a “developmental disability,” forced me to acknowledge that I had not seen childhood disability previously. This experience has had a profound influence on my thesis research, as well as the commitments that underlie it. My research is guided by a strong commitment to the wellbeing and genuine social inclusion of children with developmental disabilities and their families. While my personal family experience started me on this path, my professional experience both solidified this commitment and ensured that it extended beyond the confines of my own family’s experience to encompass marginalization of children with developmental
disabilities more broadly. As I have encountered a range of families of children with common, rare, mild, and significant developmental impairments through my professional role, I have developed an appreciation for the fact that society as a whole places a great burden on families and individuals with disabilities to manage the social, economic, psychological, educational, and health demands when a child grows up with a developmental disability. To a great extent, that burden also seems to be generated in large measure from the lack of genuine social inclusion in many places. The reasons for lack of inclusion are often very understandable for each individual case (for instance, lack of staff, extra cost, or lack of training), however, taken together the spaces and contexts that limit inclusion can severely limit life options for children with developmental disabilities, and for their families. Further, the burden created—while heavy for families—also affects the educators, health care providers, and others who work with children with disabilities. In short, I concluded that we create suffering for everyone when we turn disability into an individual and individualized burden rather than building a foundation for basic societal inclusion. As a result of this professional experience, my research now reflects a commitment to understanding the factors that create and reproduce systematic exclusion, with the goal of informing more effective challenges to exclusion. While I have always been influenced by critical interpretive and feminist anthropology, this new commitment to disability has led me to begin to explore critical disability studies as well.

Having a personal or family encounter with disability is a rich and complicated lived experience. For me, this experience also led me to encounter and negotiate a new community of meaning. What I will call simply the “disability community” (though it is not a single or unified community) has stories of disability history that invite identification with a community. Entering a community of meaning means inheriting this history. There are figures who loom large in these histories, pivotal moments and key events, recurring themes, hurdles overcome, and trajectories of change. There are a number of ways one might relate to the disability community. For persons with disabilities and their families, everyday joys, struggles, care, and access are central. For some, civil rights and social justice are key themes and fuel advocacy. Another active storyline is a distinction—introduced by disability theorists decades ago—between a “medical model” that individualizes disability and seeks prevention and cure, and a “social model” that recognizes disability as socially produced or mediated. Although the juxtaposition of these two models was complicated and challenged by later critical disability scholars, the social model remains influential in the disability community, and recently has made its mark in mainstream public
health texts (see Drum et al. 2009). The status of this debate is beyond the scope of my thesis, however, it points simultaneously to the longing to understand how marginal social positions are created, and to the propensity to look for an enemy. In this field of meaning, I find myself in the awkward (though surely not unique) position of occupying several spaces simultaneously: working in a world that largely utilizes the medical model while it grows more aware of and sensitive to the implications of the social model; being trained in anthropological and sociological models that are much more akin to the social model (while bringing a wider range of theoretical insights to bear on interpreting social forces); and feeling the personal appeal of critical attention to social justice and the complacency (and inattentive blindness…) that so often lead a majority to be comfortable with prolonged periods of societal arrangements that marginalize and sometimes do great physical and symbolic violence.

This latter experience is well illustrated by a visit I made to the Holocaust Museum in Washington, DC, fairly early in my professional work in the disability field. I remember seeing a wall of emblems that were used to mark various kinds of unfit people in Nazi Germany. One of the emblems was the purple triangle that is now adopted as a symbol for the LGBT community. While contemplating the new knowledge that an attribute I possess was targeted by the Nazi regime, I turned a corner and had an experience that is visually and emotionally seared into my memory. I saw a replica of an exam room in which, the narrative explained, children with disabilities were killed as the very first targets of the broader Nazi programs of mass extermination. While the historical fact was news to me, it is one in a long line of stories of harm that may be shared in the disability community. I do not think I can form adequate words to express how this experience at the Holocaust museum affected me. I was immediately left with a powerful sense that the cause of human dignity, safety, and rights is a shared one between anyone who was the target of dehumanization, harm, or disenfranchisement. Experiencing the social conflict and legal wrangling over same-sex marriage in my home country, and directly experiencing the social and financial consequences of this in my own life, further stoked this feeling. Particularly powerful in this respect are the numerous instances when it is explained, especially when by a judicial or government authority, that “we” as a society perhaps are not quite ready for such a big change yet. The knowledge that one isn’t entirely invited to belong in one’s own society—along with the potential for increased fear, financial disadvantage, and uncertainty that accompany both being the parent of a child with a disability and being in a
marriage that is not legally recognized—are constant reminders of what is at stake in how society deals with difference.

By invoking an extreme mode of exclusion through extermination, these experiences left a strong impression on me. However, my everyday experiences with disability have not been so drastic. More routinely, I have encountered ways in which the range of “normal” social spaces and activities were not designed to accommodate the presence of developmental disability, and the associated narrowing of space and activity that results from this. In my own direct experience of parenting a child on the autism spectrum, our access seemed to narrow when my son’s movement, vocalizations, or other behaviors seemed strange and out of place to others. I have come to conclude that most people I have encountered are more than happy, in the abstract, to be inclusive of children with developmental disabilities. It is simply certain behavioral or other challenges that cannot be accommodated. Some of the seemingly insurmountable barriers seem ludicrously minor, while others do not. Another experience, which is pervasive, tangible, and yet hard to pin down, is the feeling of straddling being incorporated but not fully welcomed. In other words, being in the same space while feeling out of place.

The lived experience of social, economic, or political marginalization—of oneself or of a family member—is enough to expose one's positioning in relation to socially “normal” ways of being. I am mindful of the fact that my own experience is specific and limited, and cannot even begin to reflect my son’s experience, let alone that of others. Nonetheless, it has attached my commitments to the dynamic of marginalization. Noticing marginalization that is beyond one's direct lived experience requires (to return to the idea of inattentional blindness) drawing attention away from a group of people passing a ball in order to see the gorilla. Of course, everyday reality is not so simple as to present us with one ball, a series of ball passes, and a gorilla. Thus, it is not surprising that as I began to examine the newly apparent absence of children with disabilities in Canadian policymaking during the NCA, I was confronted with the reality that the point of division between normal and disabled childhoods was not so readily apparent. While I could relate to Canadian families’ perception that the NCA clearly did not reflect the realities of children with disabilities, a range of developmental differences did actually appear as central to the NCA, and it was not immediately obvious what underlying rationale and mechanism of division made some differences central and while others were marginal.
Consequently, my combined personal and professional experiences have shaped both my research questions as well as the methodological and analytical approaches I adopt in this research. The questions that were raised by my personal experience included: how do children with developmental disabilities come to be obscured in child-centered policy; how are developmental differences accounted for; how, if at all, is the positioning of various developmental differences made visible and challenged; how do policy representations impact inclusion and exclusion; and, perhaps most importantly in the long-run, how might answers to these questions inform practice in public health such that marginalization of people with developmental disabilities is not reproduced? Confronting absence and the unseen has pushed me to consider in far greater depth what methodological strategies and theoretical tools might be best suited to identifying how some kinds of human life are rendered less visible or excluded in relation to what is deemed governmentally relevant or valued. As will be evident through the chapters of this thesis, the dynamic interface of presence/absence, visibility/invisibility, and inclusion/exclusion are a central thread through my analysis.
Chapter 1:
Introduction

1 Introduction

My overarching purpose in this thesis is to improve understanding of how framing national investments in children as a matter of brain development affects inclusion of children whose brain development is considered impaired. Governments have historically focused on children in their efforts to shape society and its future (see Cunningham 1995; Foucault 1980a; Hultqvist and Dahlberg 2001; Rose 1990; Sutherland 2000[1978]; Swain and Hillel 2010), but over the past two decades it has become commonplace to justify an investment in early childhood on the basis of brain development (see Keating and Hertzman 1999; Rose and Abi-Rached 2014; Wastell and White 2012; Willms 2002).¹ In policy as in society more broadly, shaping childhood—for better or for worse—is often discussed as a matter of shaping the brain (see Castañeda 2002; Lowe et al. 2015a; Nadesan 2010; Wall 2004, 2010). In Canada, the emergence and rapid pervasiveness of a brain development model for investing in the early years was a striking feature of how the investment in children was framed in national policy discourse during the 1990s and early 2000s. This model, which both described normal brain development and problematized its vulnerability to risks posed by the social environment, was adopted as foundational to Canada’s National Children’s Agenda (NCA). Investing in early brain development was presented as ensuring wellbeing and progress for both children and the population. Families of children with disabilities responded by raising concerns that the framing of child development in the NCA did “not include or reflect the reality of children and youth with disabilities,” and “implicitly and explicitly

¹ A focus on the brain can be seen in numerous discussions of child development, including making “the business case for early childhood investments,” providing “trauma-informed care,” and calling for “science-based child policy.” Today, it is difficult in North America and many western nations to read about child policy, care, education, or healthy development without reading about brain development. For examples of recent prominent discourse that assumes the importance of brain development to a policy discussion of childhood, see Council of Economic Advisors (2014), Center on the Developing Child at Harvard University (2007), and World Health Organization and UNICEF websites (www.who.int/maternal_child_adolescent/topics/child/development/10facts/en, and www.unicef.org/earlychildhood/index_40748.html accessed on April 24, 2015). In Canada, see websites (all accessed on April 24, 2015) for the Canadian Paediatric Society (www.cps.ca/en/blog-blogue/blog-details/childhood-lasts-forever-the-need-to-invest-in-the-early-years), Grand Challenges Canada (www.grandchallenges.ca/saving-brains), the Ontario Centre of Excellence for Child and Youth Mental Health (www.excellenceforchildandyouth.ca/sites/default/files/policy_early_years.pdf), and the Centre of Excellence for Early Child Development (www.excellence-earlychildhood.ca/communiques.asp?lang=EN&docId=116).
excludes [them] from being considered healthy” (Roeher Institute 2000: 11-12, emphasis added). Subsequently, first Ministers agreed that “early childhood development programs and services should be inclusive of children with different abilities,” and included language to this effect in their subsequent Early Child Development Agreement (ECDA). Similar language was added elsewhere in the NCA, as well.

Although this reads as a story of children with disabilities being left out of the NCA and subsequently included, I argue instead that children with disabilities were always included in the NCA, but were included differently than other children. I develop the argument that the NCA’s conceptual model of child development established the logical parameters for inclusion of any developmental difference based on the presence or absence of normalizable brain development. Despite the addition of inclusive language in the revised NCA, this underlying logic was not altered. Prince contends that Canadian government responsiveness to the disability community’s concerns historically has been in word but not in action (Prince 2004). In particular, policymaking during this period of NCA development “largely ignor[ed] issues concerning children with disabilities and their families” (Prince 2004: 66). The language changes in the ECDA and NCA seem to follow this pattern, because they did not address implicit and explicit exclusions built into the underlying conceptual model of child development. In fact, this model continued to be utilized (see Appendices A and B for a list of policy sources that reflected this model and a timeline of key policy documents for the period under study). For example, the model undergirded strategies to measure and manage early development through the federally funded Understanding the Early Years (UEY) initiative, which disseminated the model through 48 communities (which were multi-county regions, metropolitan areas, or parts of metropolitan areas) from 1999 through 2011 (see Appendix C for a list of UEY communities). In addition, a child development measurement tool—called the Early Development Instrument (EDI)—that was developed out of the brain-based conceptual model is currently used in every Canadian province and in at least 25 other countries (see Curtin et al. 2014; Einboden et al. 2013; Geddes et al. 2014; Underwood and Frankel 2012). Interestingly, the EDI has also been critiqued for its propensity to marginalize some children (see Einboden et al. 2013; Li et al. 2009, 2007).

Development and contestation of the NCA provide a useful case for examining how framing the investment in childhood as an investment in brain development impacts the modes of inclusion available to children who are considered to have a cognitive “impairment” or “disability.” I analyze the brain-centric model of early childhood introduced to Canadian social policy as a particular linkage of child-population-economy that located human capital formation in the development of brain-based potential. I describe this particular linkage of child-population-economy as a “neuro-logical” model. While the conceptualization of child development and the inclusion of children with disabilities in the NCA may seem like issues for political science, I adopt the position they are critical to public health theory and practice for several reasons. First, the conceptualization of child development was introduced as an integral part of efforts to merge Canada’s population health model with a human development approach to economic growth (Brown 2007; Keating 1999; Keating and Hertzman 1999). Thus in Canada, population health, human capital development, and the developing brains of young children are part of a single story, and development of the NCA was one prominent event in that history. Second, the inception of Canadian public health efforts related to maternal and infant health was inseparable from efforts to manage the inclusion or segregation of children with cognitive and other “mental” differences. Specifically, Helen MacMurchy—who served in the early twentieth century as first chief of the federal Division of Child Welfare (Department of Health) and as Ontario’s “Inspector of the Feeble-minded”—was an instrumental figure in public health advice on the rearing of healthy children as well as eugenic efforts to maintain the mental hygiene of the population (Dodd 1991; Pacini-Ketchabaw 2006; see also Rutty 2010). In the former case, she developed and disseminated state-sponsored advice to mothers on the proper care of the physical and mental health of Canada’s youngest citizens (see Dodd 1991; Gleason 1996, 1999; Hill 2004; Lewis 1982). In the latter case, she oversaw the identification and management of children who were considered “feeble-minded” at that time. This entailed differentiating those who could be educated from those who would be better institutionalized, as well as promoting eugenic measures such as sterilization of “feeble-minded” adults (see Brown 2005; Chupik and Wright 2006; Clarke 2004; Grekul et al. 2004; Normandin 1998). Third, disability is increasingly seen as critical to public health because people with disabilities experience health disparities partly caused by decreased access to health services, and they have not typically been included into health promotion efforts (see for example Drum 2009; Lollar and Crews 2003; Ouellette-Kuntz et al. 2005; Roebuck et al. 2008). Writing in the Canadian context, Ouellette-Kuntz and colleagues conclude that Canadians with disabilities experience disparities in access to health
care, health promotion, and quality services that are avoidable and therefore unjust (Ouellette-Kuntz et al. 2005). By extension, there is good reason to conclude that access and inclusion are affected by social understandings of normality/abnormality (see for example Campbell 2005; Longmore 2000; Prince 2009). The social meanings of health, as well as the attitudes of individual health care providers, are among the socio-cultural factors that have been linked to health disparities for people with disabilities (Ouellett-Kuntz 2005). I consider these issues in detail in the next section and in Chapters 3 and 5.

Before proceeding, it is important to clarify several terms I use throughout this thesis. The terms “inclusion” and “incorporation” are similar, but distinct in my usage. The former is typically used in relation to rights-based “social inclusion,” which assumes a civil society into which one may claim membership. Inclusion is thus used frequently in disability advocacy as well as in disability policy to refer to making people with disabilities part of, or more completely part of, civil society. Incorporation carries a similar connotation of “making part.” However, it has several advantages over “inclusion” for this thesis. First, it is not over-determined with political meaning, nor does it carry the implication of civil inclusion per se. Second, incorporate derives from the Latin corpus (body), giving the sense of bringing something in to form a whole body. This thesis is not so much about the inclusion/exclusion of specific children as it is about the incorporation (or non-incorporation) of aspects of life based on their desirability and value for society as a whole. I use “disability community” in the sense developed by Prince (2009), who describes the Canadian disability community as characterized by five arenas of social action (service agencies, interest groups, new social movement, Charter of Rights, research network) and three political dimensions (recognition, redistribution, representation). I use “disability response” to capture the sense of a “disability lens” or “disability perspective” being applied to the NCA. “Disability lens” (see Prince 2004) refers to the critical review of non-disability public policy from the perspective of its integration of and effects on people with disabilities, which the disability community has called for since the 1980s (Prince 2004). In this thesis, “disability response” therefore captures not only the fact that the response came from the disability community, but also the fact that the response was an instantiation of the disability lens being applied to the NCA. I use the concept of “developmental difference” to refer to differences from what is represented as normal or ideal-typical early childhood development. The concept of developmental difference allows me to be inclusive of the full range of “at-risk,” “disabled,” and other differences identified in both policy discourse and public responses to it, while
simultaneously recognizing that the policy construct of normal early brain development may not reflect the reality of any child. It also allows me to ask how various developmental differences are included, or “incorporated,” rather than assume from the outset that certain differences either are excluded, or are included differently. While the concept of developmental difference is analytically useful to me, “disability” is a term that is widely used in the policy discourse analyzed here. For example, the claim that “children with disabilities” were excluded from the NCA’s model of child development provides a significant impetus for this study. Although this usage may have a range of meanings within the Canadian disability community, in this context “children with disabilities” clearly meant children who did not fit the normal model of child development incorporated in the NCA. In government publications and policy projects, the term “disability” is used widely, and “continues to be primarily understood and approached by governments as a category or set of categories of discrete needs” (Prince 2004: 78). I use the terms “disability” or “children with disabilities” to designate categories of children for whom the disability community advocated, and about whom state authorities sometimes spoke. As I will discuss below, there was no tight correspondence between this group of children and specific conditions or diagnostic categories. The usage of “disability” also carried different, and sometimes conflicting, meanings, which I explore in Chapter 7 of this thesis. I introduce these terms here because I use them throughout the thesis. I define other terms as they are introduced.

The purpose of this chapter is to provide the political and scholarly context for this study, and to describe my analytic approach, research purpose and questions, and study design. The chapter is organized into four sections. In the first, I contextualize the development and contestation of the neuro-logical model in the NCA. In section two, I introduce the analytics of biopolitics and my approach to theorizing disability exclusion/inclusion as exteriorization and incorporation. In section three and four respectively, I provide a statement of the research purpose and questions and a summary of my study design. I conclude the chapter by describing the organization of the thesis.

1.1 Background

1.1.1 Childhood and Disability as Priorities During Social Policy Reform

In the 1990s, Canada’s young children were positioned as the target of limited social program resources, claimants of human rights, and as the best investment in the future vitality of the population. In particular, early childhood development focused prominently in Canada’s attempts
to address social and economic challenges as the 21st century neared. Addressing these challenges occurred within a broader context of governance reform, with a strong emphasis on reconsidering relations between federal and provincial governments. In this context, producing a common, national vision to guide action on childhood was considered imperative. The National Children’s Agenda (NCA) was developed to articulate this shared vision. The disability community responded with alarm to the conceptual model of child development used in the NCA, which appeared to devalue and exclude children with disabilities (Roeher Institute 2000). Although which children with disabilities were excluded was not specified, the concerns were voiced by the Canadian Association for Community Living (CACL), which describes itself as “a family-based association assisting people with intellectual disabilities and their families to lead the way in advancing inclusion in their own lives and in their communities.” This might imply that it was children with intellectual disabilities who appeared devalued and excluded. However, the concerns about exclusion that were documented in the public record did not explicitly narrow the concern to children with “intellectual disabilities.” In fact, when Torjman, then vice-president of the Caledon Institute of Social Policy, expressed concern in 1999 that the NCA overlooked children with disabilities, she seemed to invoke a far broader definition of disability. Specifically, she stated that over 750,000 Canadian children had a disability. She was citing a prevalence rate of childhood disability derived from parent report of participation and activity limitations, which had the effect of defining disability very broadly and vaguely. In the national Participation and Activity Limitations Survey (PALS) that produced these prevalence rates at that time, cognitive limitations accounted for less than 30% of the estimated population of children with disabilities. Thus, while agreement developed that some children were excluded

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3 This content originally at http://www.cacl.ca/english/allmeans.html is now available as online archive only. See web archive at https://web.archive.org/web/20010225021857/http://www.cacl.ca/english/allmeans.html.


5 Torjman was quoted in The Globe and Mail (November 23, 1999: A7) as saying there were 750,000 children with disabilities in Canada. In a policy paper released by the Caledon Institute in 1999, she states, “458,000 children between the ages of 0 and 11 and the 304,000 young people between the ages of 12 and 19 with some form of disability” (Torjman 1999: 2). The 2001 Profile of Disability in Canada estimated 180,930 children 0-14 with disabilities, or 3.3% of the population in that age range (based on the Participation and Activity Limitations Survey, which uses age ranges of 0-4, 5-14, and 15-65) (Statistics Canada 2001: 7). Of those with any disability, a subset of 29.8% had a developmental disability, defined as “Cognitive limitations due to the presence of a developmental disability or disorder, such as Down syndrome, autism or mental impairment caused by a lack of oxygen at birth” for children ages 5-14 only (Statistics Canada 2001: 9-10). Other categories of disability measured were hearing, seeing, speech, mobility, dexterity, learning, developmental delay (age 0-4 only), psychological, chronic condition (including conditions such as asthma), and unknown. Categories are not mutually exclusive.
from consideration in the NCA, the question of which “children with disabilities” in particular might be excluded was left in an ambiguous state.

Although there was concern about how children with disabilities were—or were not—positioned in the NCA, disability was not absent in the broader social policy renewal efforts in which the NCA was embedded. These renewal efforts, which were referred to as the “social union initiative,” were developed under Chrétien’s Liberal government (1993-2003). The social union website provided this introduction to the initiative and its priorities:

The ‘social union’ initiative is the umbrella under which governments will concentrate their efforts to renew and modernize Canadian social policy. It focuses on the pan-Canadian dimensions of health and social policy systems, the linkages between the social and economic unions, and the recognition that reform is best achieved in partnership among provinces, territories and the Government of Canada. The primary objective of the social union initiative is to reform and renew Canada’s system of social services and to reassure Canadians that their pan-Canadian social programs are strong and secure. In working to build a strong social union, the Government of Canada and the provinces and territories have reached a broad consensus that the first priorities should be children in poverty and persons with disabilities.

The social union initiative, which eventually led to the Social Union Framework Agreement, was formalized after Premiers agreed in August 1995 to establish the Federal/Provincial/Territorial (FPT) Ministerial Council on Social Policy Renewal with a broad mandate to form “common positions” on national social policy issues and ensure provincial and territorial flexibility in the delivery of a broad range of social programs (1995). By 1998, this broad mandate had narrowed to a focus on two distinct policy priorities: disability and childhood. As the social policy renewal efforts developed, a range of more specific issues was included under the umbrella of

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8 I have not found a clear indication of why these were the two priorities. One possible explanation is that both areas involve distribution of social welfare benefits, and priorities were identified as part of social welfare reform. My literature review and study further suggest that childhood was a priority because of its perceived potentiality and value as an investment. Prince suggests that disability is repeatedly elevated in word to priority status by Canadian governments, without this meaning much in terms of action (Prince 2004).
the social union, but these were all included under one or the other of these original policy priorities.\(^9\)

Vision statements to guide intergovernmental attention to childhood and disability were developed separately. The shared vision for disability policy was presented in the 1998 publication, *In Unison: A Canadian Approach to Disability Issues*, which reinforced the centrality of an “open house concept emphasiz[ing] the importance of persons with disabilities enjoying the same rights and benefits as other Canadians and participating fully in all aspects of life including school, work and recreation. This participation is made possible by the removal of social, economic and physical barriers and the provision of supports which accommodate and respect differences” (Federal/Provincial/Territorial Ministers Responsible for Social Services 1998). Integral to this conceptual framework is an access-first idea in which “generic programs and services,” including childcare and education, must be open and accessible to all Canadians. This vision is not a radical departure from previous reports, such as *Obstacles* (House of Commons Special Parliamentary Committee on the Disabled and the Handicapped 1981).

By contrast, the NCA, which was developed to provide national vision and direction about children, brought a level of attention to the early years of development that did not typify earlier federal policy treatments of childhood. The first publications on the new vision came in May of 1999, with the release of two documents intended to inform public consultation on the NCA: *A National Children’s Agenda: Developing a Shared Vision*; and *A National Children’s Agenda: Measuring Child Well-being and Monitoring Progress* (Federal/Provincial/Territorial Council of Ministers on Social Policy Renewal 1999a, 1999b).\(^10\) Public forums followed release of the

\(^9\) Beginning in 1998 these priorities were identified on the initiative website along with three specific policy issues: the “National Child Benefit,” the “National Children’s Agenda,” and “Benefits and Services for Persons with Disabilities.” In 2000, “Early Childhood Development” was added to this list, followed by “Early Learning and Childcare” in 2003. Information on SUFA was added to the site in 1999, and the NCB was moved to its own site in 2002. www.socialunion.gc.ca was hosted from 1998 through 2011, and available as an archive on web.archive.org.

documents, and non-governmental organizations provided position papers. The NCA documents were presented as 5x8, glossy booklets designed to provide a concise and appealing overview for public dissemination. Developing a Shared Vision presented a proposed agenda, which offered the “vision,” “values,” and “goals” for the nation’s children. It addressed why children matter, what they need, what the Canadian public needed to do, and how to know if efforts were making a difference (presumably, “children” was meant to refer to all Canadian children). Measuring Child Well-being and Monitoring Progress focused on how and why outcomes needed to be measured. It also provided further information on key stages of child development and environmental influences that impact it; described six social intervention targets at systems levels, identified indicators of progress; and outlined strategies for collective action. The conceptual model of early childhood that alarmed the disability community was also summarized in Measuring Child Well-being and Monitoring Progress. The disability community was not alone in critiquing the NCA, but it was one of the few voices questioning the capacity of the neuro-centric conceptual model of early childhood to represent the growth and development of all children.

The brain-centered model is striking both because of the speed with which it emerged and spread through policy discourses, and because it became a consistent and persistent referent in Canadian governance. During the early 1990s, few Canadian policy documents, even those that dealt directly with child development, had raised the issue of burgeoning understandings of the brain. Indeed, in the second reading of the Decade of the Brain Act before the House of Commons (HOC) in 1994, the child is barely mentioned (Canada 1994). Justification for the Bill was framed almost exclusively in terms of the costs and debilitating effects of injury and degenerative diseases of the brain. Children were grouped together with adults as potential victims of injury and disease. While childhood, and even child development, were put forward as important national concerns in the early 1990s, my review of a wide range of federal-level policy and government documents from these years has not yet turned up a reference to the brain as pertinent to the national interest in children. Passing mention of brain development emerged in policy documents in 1994 and 1997.11 Between 1997 and 2004, reference to early brain

11 The earliest reference I found in federal government publications is in a 39-page population health strategies paper distributed through Health Canada in 1994: “There is also increasing evidence that adult brain structure can be strongly influenced, sometimes in an irreversible way, by experience in early life” (Federal/Provincial/Territorial Advisory Committee on Population Health 1994: 20). See Chapter 5 for a detailed discussion of the emergence and circulation of the neuro-logical model through national policy discourse.
development was common in Canadian policy documents that addressed the nation’s stake in childhood, and extensive treatments of childhood invariably equated early child development with early brain development\footnote{See Chapter 6 for a more thorough consideration discussion of the neuro-logical model in policy discourse.} (see Appendix A for a timeline of reference to brain development in Canadian national policy discourse). This conflation of child development with early brain development became prevalent across a number of sectors both within and outside of Canada.\footnote{Versions of a brain-based investment discourse were in wide circulation in Canada and elsewhere. In the United States, it was evident in the Carnegie Corporation’s report \textit{Starting Points: Meeting the Needs of Our Youngest Children} (1994), the Reiner Foundation “I Am Your Child” campaign, and the 1997 White House Conference \textit{Early Childhood Development and Learning: What New Research on the Brain Tells Us About Our Youngest Children}. It was also evident in World Bank materials (see Penn 2002; Young 2002).}

In Canada, the NCA model of child development reflected the model shared in the Ontario report, the \textit{Early Years Study: Reversing the Real Brain Drain} (McCain and Mustard 1999). The \textit{Early Years Study} was commissioned in 1998 by the Ontario Children’s Secretariat with a broad mandate to “provide options and recommendations with respect to the best ways of preparing all of Ontario’s young children... for scholastic, career and social success” (McCain and Mustard 1999: 1). The final report provided a detailed articulation of the connections among population, economy, and brain development. This report became a key reference for supporting the neurological model of investing in early childhood in Canada. It’s conclusions were also presented in preliminary form as evidence before the House of Commons’ Committee on Human Resources and the Status of Persons with Disabilities Sub-Committee on Children and Youth at Risk (SCYR), which was created to collect evidence that would help the Chrétien government develop the NCA. Both the NCA and the \textit{Early Years Study} focused on early development as an opportunity for investing in population wellbeing and on children at risk, where risk seemed to refer to the ways in which the socio-economic environment and early caregiving might impede optimal brain development. These policy documents reflected the neuro-logical model, which was in fact a relatively coherent theory of human capital development honed and promulgated by a set of researchers who were particularly interested in informing social policy (see Chapter 5 for a discussion of this neuro-logical expertise).

Although some expert witnesses and policymakers were involved in NCA development discussions prior to this, for all intents and purposes the neuro-logical model was first shared with the public in the spring of 1999 with the April publication of the \textit{Early Years Study}
(McCain and Mustard 1999) and the May release of the two NCA discussion papers (Federal/Provincial/Territorial Ministerial Council on Social Policy Renewal 1999a, 1999b). While the model was evident in policy discussions in the years immediately preceding these publications in 1999, its circulation in the policy domain occurred through documents and forums that were not accessed by most Canadians. A range of non-governmental and professional organizations provided position statements in response to the NCA discussion papers. Disability organizations sought input from parents of children with developmental disabilities and summarized the feedback received on the CACL website and in policy publications (Roeher Institute 2000). Parents’ statements implied that the NCA failed to make conceptual space for children with developmental disabilities, and that by extension the national vision for “children” did not include all children because it obscured the differences and needs of this population.\(^{14}\) This absence of children with disabilities was noticed by policy think tanks like the Canadian Policy Research Network (CPRN) and Roeher Institute, as well as the disability organizations like the CACL (see Prince 2001). Despite this absence of disability per se, developmental differences more generally were actually prominent, since concern over risk to normal brain development was central to its neuro-logical model of early childhood.

In this section, I have summarized the background for how a model of childhood focused on brain development became both a central and a contested part of Canadian social policy discourse. The emergence and proliferation of this model in national policy discourse is discussed in more detail in Chapter 5. In the next section, I describe the context for concern about disability exclusion within the Canadian disability community and within public health theory and practice.

### 1.1.2 Contextualizing Concern Over Disability Exclusion

The Canadian disability response to the NCA can be seen as part of its broader attentiveness to social inclusion (or its lack) and to the representation of disability (see Boyce et al. 2009; Prince 2002, 2004, 2009). From the mid-twentieth century onward, there was a growing awareness in Canada as in other western nations of the harm imposed through a history of such practices as eugenics and institutionalization. As disturbing cases of institutional neglect and abuses were

\(^{14}\) The responses to the NCA did not emphasize which types of childhood disability were obscured. This meaning of disability, and which childhoods were obscured, is addressed more fully in Chapter 7 of this thesis.
exposed, disability activism was mobilized and a movement developed for deinstitutionalization. Disability advocates envisioned and pushed for new possibilities for social and political inclusion (see Prince 2004). Prince points out that Canadian disability advocacy has been informed by a philosophy of social liberalism that has placed a premium on participation in mainstream political processes and in valued social institutions, such as employment, as markers of inclusion (Prince 2009: 179-198). However, disabled citizens remain a “social group still largely excluded from the governance structures and policy making processes in Canada” (Prince 2009: 1). While the Canadian disability community has struggled for equal participation in established institutions and processes such as voting and employment for decades, all the while maintaining a fairly consistent vision for social participation and inclusion, there is a shared sense that this has not been meaningfully achieved (Prince 2004, 2009). This situation is not unique to Canada.

Commenting on this dynamic from the perspective of critical disability studies, Campbell notes that, “[a]ctivists with disabilities have placed great trust in the legal system to deliver freedoms in the form of equality rights and protections against discrimination. While these equalization initiatives have provided remedies in the lives of some individuals with disabilities, their subtext of disability as negative ontology has remained substantially unchallenged” (Campbell 2005: 108-109). The idea that disability has a negative ontology means that disabled bodies are viewed as inherently undesirable and intolerable (Campbell 2003: 7). From this view, partial inroads to social and political participation are inadequate to address exclusionary processes, because the conditions for widespread inequality and discrimination are rooted in social understandings of human life, ‘normality,’ and ‘abnormality.’ This knowledge is also persistently “reflected and reinforced in public policies” (Longmore 2000: 36).

Although Canadian disability advocates have emphasized inclusion in existing social and political structures, there is likewise recognition of the negative ontology of disability and its effects. This was evident in parents’ concerns that the NCA represented disability only as something to be prevented. The meaning of disabled childhoods appeared to be particularly salient to the disability community in Canada in the years leading up to the NCA because of public responses to the 1993 killing of 13-year-old Canadian Tracy Latimer by her father, Michael Latimer.\(^{15}\) The Latimer case was brought up a number of times in House of Commons

\(^{15}\) To the view of some, Tracy was murdered because she had cerebral palsy. It is also implied that some of the pain she suffered resulted from her standard of care, and was not a necessary part of her disability experience. The
committee evidence pertaining to the NCA. Because Tracy had cerebral palsy and was said to be experiencing chronic pain, this case spurred passionate opinions and ongoing debate about the act of taking the life of a disabled child. There was public empathy for the father, as well as alarm that disability could become grounds for “mercy killing” (Council of Canadians with Disabilities 2013). Between 1994 and 1996, a 16-year-old boy with cerebral palsy (Ontario) and a 6-year-old boy with autism (Quebec) were killed by their parents, contributing to the sense of alarm among disability advocates that in the contemporary shadow of historical euthanasia programs, social devaluation would make death seem preferable to living with disability, and killing seem like an act of mercy rather than a criminal act in this case. While these cases reflect an extreme, the underlying fear does not. Namely, there is concern that disability is viewed as something to be prevented or eliminated. Prevention and elimination of disability is continuously confronted in less extreme ways as well. For example, advances in biomedicine have enabled knowledge of some conditions before birth, creating the possibility to terminate a pregnancy in order to prevent disability. Rose extends this consideration to choices made for in vitro fertilization, remarking that, “[a] judgement of the differential value of different forms of life is engaged whenever preimplantation genetic diagnosis used in the hope that parents can avoid having a child that carries a mutated genetic sequence that might lead it to a life with a crippling or terminal illness or a troubled subjectivity” (Rose 2007: 50). Writing about the UK, Priestley has further noted that, “there has been a dramatic increase in legal suits brought by parents concerning the ‘wrongful birth’ of disabled children” (Priestley 2003: 38).

Although critical disability studies have problematized the negative ontology of disability, and despite government recognition of attitudinal barriers to disability inclusion (Prince 2004), it is still mobilized in public health (and other) contexts without obvious engagement with these critiques. For example, the image represented in Figure 1 is included in the autumn 2011 issue of the Canadian Public Health Association Health Digest in an article that begins, “The Canadian Council for Canadians with Disabilities reports that Tracy weighed 38 lbs just prior to her death, and her parents had declined the recommended feeding tube, considering it “excessive” (Council of Canadians with Disabilities 2013). The case also received attention in public media sources that are not part of this research.

Peter Singer continues to provide a philosophical argument for the view that it is justifiable to kill the severely disabled. See the thoughtful consideration of Singer’s perspective by two disability rights activists, historian Paul Longmore (2003), and attorney and author Harriet McBryde Johnson (2003).
Public Health Association (CPHA) congratulates the Government of Canada on giving final approval for tough new warning labels on cigarette and little cigar packages."18 This Health Canada anti-smoking campaign poster (no date available) depicts helplessness caused by disability in order to discourage smoking. Other images in this Health Canada campaign depict bodily disfigurements caused by smoking (e.g., mouth cancer, tooth decay, and premature aging), frail bodies dying of cancer, or the vulnerability of innocent children (e.g., a pregnant woman declining a cigarette, and young children wearing oxygen masks). The image of disabled helplessness caused by stroke used in the recent Health Canada campaign shows that impaired motor functioning, the need for assistance, and a decrease in privacy are thought to have strong enough negative associations to serve as effective deterrents to smoking. The poster image also demonstrates that this negative ontology—in the form of seeing deficits and undesirable attributes of disability—is mobilized today in the pursuit of preventing impairment and death through population and public health initiatives. The negative ontology of disability is persistent, and is routinely circulated in ways that pass under the radar.

![Health Canada Anti-Smoking Campaign Poster](image)

**Figure 1. Health Canada Anti-Smoking Campaign Poster**

The negative ontology of disability also operates in the form of not discerning strengths, desirability, and capability in association with disability. For example, public health models have not automatically taken into account the promotion of health and wellbeing of people who are disabled, because in public health research and practice disability has historically been viewed as a negative outcome, a target for prevention, and the cause of reduced quality of life when

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prevention fails (see Drum et al. 2009; Lollar and Crews 2003; Peterson et al. 2009). Writing specifically about health disparities among people with intellectual disabilities, Ouellette-Kuntz and colleagues point out that in Canada the lack of attention to the health of, and health promotion in, this population may exceed that in the United States and other western countries that have adopted national disability health policies:

While great strides have been made in Canada in the area of disability policy, the health needs of persons with intellectual disabilities have been largely overshadowed by issues of accessibility, employment equity and income security for persons with disabilities, without recognition of the specific vulnerabilities to poor health faced by persons with [intellectual disabilities]. As a result, Canada does not have a national policy concerning the health needs of persons with [intellectual disabilities]; nor do we have national statistics that provide us with a portrait of their vulnerability to experience health disparities. (Ouellette-Kuntz et al. 2005: S17-S18; for further consideration of disability in Canadian public health see Wolbring 2006; Wolbring 2011)

In addition to efforts to better include people with disabilities in public health research and practice, the recognition that the health and wellbeing of people with disabilities has been overlooked has spurred consideration of what health fields can learn from a critical engagement with disability studies (see Drum 2009; Evans 2004; Hayward 2004; Ouellette-Kuntz 2005; Schalick 2001; Seelman 2004; Sherlaw et al. 2013).

I view this thesis as responding to the insights that the negative ontology of disability is a critical factor in perpetuating disability exclusion and that disability is a critical concern for public health theory and practice today. I take my initial analytic cues from Campbell and Prince (Campbell 2005, 2009a; Prince 2004). Campbell points out that “disability is always present (despite its seeming absence) in the ableist talk of normalcy, normalization, and humanness” (Campbell 2005: 109, emphasis in original). Consequently, she suggests that critical disability studies must begin to scrutinize this ‘talk of normalcy, normalization, and humanness’ (Campbell 2009a). Prince suggests that scholarly and advocacy analysis of Canadian policymaking must attend to these underlying negative attitudes in addition to “governance arrangements and discursive techniques” (Prince 2004: 59). In particular, he points to the value of applying a Foucauldian biopolitical lens (Prince 2004).

In this section, I have contextualized concern about disability exclusion, and highlighted why knowledge of disability (including both representation as well as absence of consideration)
remains a critical issue for public health theory and practice. In the next section, I introduce the “analytics of biopolitics” and the theoretical tools that inform my approach to disability exclusion/inclusion.

1.2 Analytic Approach

Drawing on Lemke’s approach to Foucauldian biopolitics, I conceptualize the NCA as an effort to assemble knowledge and strategies for optimizing life at the population level. While the NCA took shape in this specific social, political and historical context, a biopolitical perspective casts it as one case in a long progression of childhood being a prioritized domain of life in the government of population vitality. More specifically, it reflects both the neoliberal focus on childhood as a stage for human capital formation and the emerging tendency to view human life in “neuromolecular” terms (Rose 2013; see also Ortega and Vidal 2011; Pickersgill and Van Keulen 2012; Rose and Abi-Rached 2014). Following Foucault, neoliberalism is the iteration of modern power that made “the market, competition, and therefore enterprise into what could be called the ‘formative power’ of society” (Foucault 2008: 147-148). To analyze the government of developmental difference in this context, I draw upon the notion of biopolitics, which “stands for a constellation in which modern human and natural sciences and the normative concepts that emerge from them structure political action and determine its goals” (Lemke 2011: 33).

The concept of biopolitics reflects the idea that a productive form of “biopower” targets the fostering and optimization of life (Foucault 2009a). Foucault saw powers of repression, seizure, and death as typifying “sovereign power,” which he concluded was subordinated to biopower with the emergence of modernity. The distinction between sovereign power and biopower is readily conveyed in the juxtaposition of the right to “take life or let live” (Foucault 1990a: 136, emphasis in original) to the right to “make live or let die.” Biopower operates through the production of authoritative, normative knowledge of life as well as through the application of governmental techniques. Life may be known and acted upon at the level of the individual body as well as at the level of the collective life of species as a population. “Biopolitics” refers specifically to the regulation of population life. This regulation requires knowledge of the nature of human life and population, its attributes and norms, and its status at any given point in time. An analytics of biopolitics focuses on one or more of the three key components of biopolitics: authoritative knowledge of human life, techniques of government, and subjectification (Lemke 2011: 119-120; Rabinow and Rose 2006: 197-198). First, authoritative knowledge of human life
refers to what is taken to be true, which truth claims are taken to be socially relevant, what authorities are deemed to offer expert and legitimate knowledge, and what problems are considered in need of solutions. Second, techniques and governing refer to the strategies and methods for mobilizing, disseminating, and applying knowledge through relations of power. Finally, subjectification refers to the processes through which individuals come to act upon themselves or upon collective human life in accordance with expert knowledge.

I find Lemke’s approach to an “analytics of biopolitics” particularly useful because it is well suited to taking into account exclusionary processes (Lemke 2011; Rabinow and Rose 2006). Specifically, Lemke explains that “[t]his perspective enables us to take into account structures of inequality, hierarchies of value, and asymmetries that are (re)produced by biopolitical practices,” “[w]hat forms of life are regarded as socially valuable, and which are considered ‘not worth living,’” and “[w]hat existential hardships, what physical and psychic suffering attract political, medical, scientific, and social attention and are regarded as intolerable and as a priority for research and in need of therapy, and which are neglected or ignored” (Lemke 2011: 119).

Differences today labelled “disabilities” are widely thought to be among the most devalued aspects of life. For example, Davis highlights the ways in which some forms of disabled bodies are cast beyond the limits of a normal and acceptable range of difference, even in the context of a celebration of diversity (Davis 2013; see also the epigraph to this thesis). Carlson suggests that intellectual disabilities occupy a particularly devalued status, even receiving marginal attention in disability studies until recently (Carlson 2009). A well established literature has examined how dividing and sorting practice in twentieth century Canada tied the physical and mental capacities of children to maintaining the fitness of the population as a whole (see Clarke 2004; Dodd 1991; Gleason 2013; McDonagh 2001; Rutty 2010; Strong-Boag 2007; Sutherland 2000[1978]).

In order to examine exclusionary effects in relation to disability among children in the study described in this thesis, I adopt the specific approach of analyzing the incorporation of developmental differences into the NCA. Applied to disability, theoretical insights on exclusion suggest that disabling differences become attached to exclusionary effects in one of two ways: through the profound “othering” or exteriorization of these forms of life, or through incorporation into disadvantaged positions in hierarchies of difference (see Seidman 2013 for a discussion of the politics of difference versus othering). Because devalued difference exists in a mutually constitutive relationship with desirable normality, it is possible to expose exclusionary effects through attending to what is marginalized and excluded, or to ideas of normality and
processes of normalization (see Campbell 2009a; Davis 2006). Campbell’s enjoiner to scrutinize talk of normal humanness is spurred by the fact that most critical disability studies have examined the production of disabled difference (Campbell 2009a). Ravaud and Stiker suggest that modes of weak inclusion/incorporation are actually the most common source of exclusionary effects for disability today, providing a further rationale for examining exclusionary effects through processes of incorporation (Ravaud and Stiker 2001). In this light, biopolitical regulation and optimization of life can be viewed as the application of strategies and techniques to manage the relationship between differences and society through modes of incorporation (i.e., inclusion) or exteriorization (i.e., “othering”).

In this section, I have discussed theoretical tools for analyzing disability exclusion/inclusion in the context of a biopolitical analysis. I describe my analytic approach in detail in Chapter 2. In the next section, I provide my research purpose and questions.

1.3 Research Purpose and Questions

Neoliberal styles of thought have introduced an economized view of childhood as a period of human capital formation, and embraced the perceived malleability and potentiality of early childhood in particular as an investment opportunity (Castañeda 2002; James et al. 1998). Recently, brain development itself has become a key site in which potentiality is sought and investment is located (see especially Castañeda 2002; Thornton 2011; Wall 2004; see also Nadesan 2002; Pitts-Taylor 2010). Although scholars have described the imbrication of neoliberal and neuroscientific styles of thought more generally (Papadopoulos 2011; Pitts-Taylor 2010), few studies consider the relationship between expert knowledge from the “brain sciences” and neoliberal early years policy (Broer and Pickersgill 2015; Macvarish et al. 2015). A body of literature has documented how early years policy (re)produces inequalities and has exclusionary effects for many adults and some children (see for example Dobrowolsky 2002; Dobrowolsky and Jenson 2004; Einboden et al. 2013; Fawcett et al. 2004; Lister 2006; McKeen 2005, 2007; Wiegens 2002, 2013). Although the likelihood of disability exclusion is mentioned in this literature (see Dobrowolsky 2002; Fawcett 2004; Lister 2006; McKeen 2009), there is a lack of direct study of this possibility. The primary exception (Einboden et al. 2013) considers the exclusionary effects of measuring “developmental vulnerability,” but does not afford insight into whether or how these apply to “disabilities.” This gap is even more important because the recent emphasis on investing in early brain development is likely to have exclusionary effects for
children with disabilities related to brain development. In order to elucidate these exclusionary effects, it is important to analyze how normality and its differences are produced, and how biopolitical practices work to incorporate those differences (Campbell 2005; Davis 2013; Lemke 2011; Prince 2004; Ravaud and Stiker 2001).

In the study described in this thesis, my purpose is to respond to this need for clarification of how neoliberal investment in early brain development may have exclusionary effects for children with disabilities. Specifically, I examine how developmental differences are incorporated into the NCA’s conceptualization of normal child development. To address my research purpose, I focus on the following research questions:

1. What truth discourse of child development was mobilized in the NCA?
2. How was child development attributed value for governing population?
3. How were developmental differences incorporated in this truth discourse?
4. How, if at all, was this knowledge embedded in or operationalized through NCA policies and programs?

This study offers a highly relevant contribution by: 1) extending the literature on brain-based truth discourses in neoliberal policymaking; 2) helping to address a gap in knowledge about the exclusionary effects of neoliberal policy that may impact children with disabilities; and 3) providing a detailed study of the effects of neuro-forms of normal child development specifically on the incorporation/exteriorization of neuro-developmental differences.

In the next section, I describe the methodological approach and study design utilized to answer these questions.

1.4 Study Design

In order to answer the identified research questions, I conducted a study of documentary sources pertaining to development and contestation of the NCA at the national policy level between 1994 and 2011. This timeframe is inclusive of the first introduction of the neuro-logical model into
national policy discourse and of the final year of a national initiative\textsuperscript{19} that utilized the model and its associated measurement tools for community-based early childhood work. Methodologically, this study is conceptualized using “anthropology of policy” as a specific approach to critical interpretive analysis for policy and medical anthropology (Lock and Scheper Hughes 2010; Shore et al. 2011; Wedel 2005; Yanow 2000, 2011). This methodology was adopted as most suitable because it is based on the Foucauldian analytic approach adopted in this thesis, links to methods and strategies for researching non-localized policymaking and documentary sources, and provides a single framework that can accommodate future, ethnographically rich research on different aspects of the phenomenon investigated in this thesis. The study as described in this thesis follows, or “traces,” two focal issues through national policymaking and discourse: 1) the conceptualization of brain-based investment in child development mobilized in the NCA; and 2) the contestation of this conceptualization on the basis of “disability.” Analytically, this allows me to describe and analyze the boundary, or limit, between the conceptualization of brain-based investments and disability, and to utilize the analysis of incorporation to understand what can and cannot be incorporated into this conceptualization of early-brain-development-as-investment.

This section has summarized my methodological approach and study design, which I cover in detail in Chapter 4. In the final section of this chapter, I describe the organization of the thesis.

1.5 Organization of the Thesis

This thesis is organized into eight chapters. Chapters 2 through 4 describe the analytic approach, literature, and methodology that provide a foundation for this thesis. In Chapter 2, I outline the analytics of biopolitics and exclusionary processes that I apply in this thesis. Specifically, I outline an analytics of biopolitics following Lemke (2001), describe the function of normalization and differentiation in this approach, and explain my adaptation of Ravaud and Stiker’s typology of disability exclusion/inclusion (2001).

In Chapter 3, I situate the thesis in relation to two sets of literature. I first review the broad literature pertaining to the biopolitical value of childhood in modernity. I then review literature

\textsuperscript{19} The program mentioned here is the Understanding the Early Years Initiative, which was sponsored by Human Development Resources Canada. The Initiative began with pilot sites in 1999 and concluded in 2011. See Appendix C for a full list of participating communities across this timeframe.
on the mobilization of early childhood in neoliberal policy projects, which includes some literature on the mobilization of brain development in particular.

In Chapter 4, I draw upon recent developments in the anthropological study of policy to delineate a critical interpretive methodological approach for this study. I describe the study design, documentary sources, data management, analytic strategies, and advantages and limitations of the study design.

In Chapters 5 through 7, I describe my findings and analysis. In Chapter 5, my purpose is to describe how knowledge of early brain development entered national policy discourse as a solution to problems in the management of the human population. I trace the emergence, spread, and proliferation of the model as a truth discourse in the national policy context between the years 1994 to 2011. This chapter speaks to the extent to which the neuro-logical model was embedded in and operationalized through NCA policies and programs, which is the fourth research question in this study (see section 1.3).

In Chapter 6, I show that neuro-logic rooted government of population vitality and productivity in the capacity of the brain to develop to its natural potential. Governing population vitality meant investing in, and managing social environmental threats to, neuro-developmental potential. This chapter addresses my first and second research questions by describing the neuro-logical truth discourse that was mobilized in the NCA, and discussing how child development was attributed value for governing population.

In Chapter 7, my purpose is to show how the NCA’s ability (or inability) to incorporate children with disabilities was shaped by its utilization of the neuro-logical model, in which normalizable, mutable developmental difference (“vulnerability”) was distinguished explicitly from permanent, unalterable developmental difference, such as some cognitive disabilities. While the NCA was described as being about all children, this underlying model imagined distinct kinds of incorporation for normalizable and immutable developmental difference. This chapter addresses my third research question, which asks how developmental differences are incorporated in this truth discourse.

In Chapter 8, I describe my key findings in this study; provide a synthesized discussion of my primary conclusions; and discuss the implications of this study for future research, policy, and public health practice.
Chapter 2:
An Analytics of Biopolitics and Exclusion

2 Introduction


The body of this chapter is organized into two sections. In the first, I describe biopolitics and the concept of human capital introduced in the neoliberal form of biopolitics. In the second section, I describe my theoretical approach I developed to conceptualize exclusionary processes as modes of exteriorization or incorporation in relation to contemporary discourses of normality.

2.1 Biopolitics and Human Capital

2.1.1 Biopolitics

Foucault introduced the idea of biopolitics in the first volume of The History of Sexuality (1990a) to describe a transformation in the form of political power that began to emerge in the 17th century. Foucault argued that mechanisms of power underwent a significant transformation from the classical to the modern era, leading to the subordination of sovereign power to what he terms “biopower.”

Sovereign power, according to Foucault, was characterized by an absolute power of the ruler over his subjects that was exercised on a principle of “subtraction” or “deduction” (Foucault 1990a: 136). That is, the sovereign exercised the right to take goods, labor, and life. The relationship between sovereign power and life was thus the right to “take life or let live” (Foucault 1990a: 136, emphasis in original). The mechanism of power that developed into the

20 Lemke reads Foucault as using the terms biopower and biopolitics somewhat interchangeably (Lemke 2011: 34), while other authors assume Foucault used the term biopolitics to refer to one aspect of biopower (see for example Nadesan 2008).
modern era assumes, instead, the right of “making live or letting die” (Lemke 2011: 34). In contrast to a power that takes away, “[p]ower now generally works to organize, control, reinforce, monitor, incite, and optimize the energies of individual and collective life. It is not focused on impeding or destroying life but on generating it, making it grow, and ordering it” (Inda 2014: location 142, emphasis added). This productive and diffuse power over life operates along two poles: one focused on individual life, and one focused on collective life. The former is an “anatamo-politics” that seeks to manage human life at the detailed level of the body and its actions. This is a disciplining of individual bodies, according to Foucault, that was developed particularly from the 17th century onward in institutions that were active in “constituting and structuring perceptual grids and physical routines” (Lemke 2011: 36). Examples of such institutions include the hospital and the prison (see Foucault 1991, 1994). “The second pole is one of regulatory controls, a biopolitics of the population, focusing on the species body, the body imbued with the mechanisms of life: birth, morbidity, mortality, longevity” (Rabinow and Rose 2006: 196, see also Foucault 1990a: 139). This biopolitics of population, which grew in the eighteenth century, focuses on population as a collective form of human life. It aims to measure the characteristics of the population as well as track phenomena that impact its wellbeing. This has frequently meant measuring rates of birth, death, and employment; the distribution of wealth; and the spread of contagion through the population. However, it can also entail measurement and tracking of anything deemed to be an attribute of collective human life. Regulating collective human life requires knowledge of population both in terms of identifying and conceptualizing its most meaningful attributes, and in terms of taking measurements of those attributes (at a given point in time, or longitudinally). Through both the poles of anatamo-politics and biopolitics, biopower aims to regulate life in order to maximize life.

Of critical importance to biopolitical analysis is the understanding that biopower obscures the role of the human sciences in the operation of power. This occurs because, according to Foucault, the function of sovereign power shifts from being concentrated in the sovereign ruler to being diffused through the populous with the rise of humanism. Foucault concluded that biopower was fully born by the 19th century, when power became “a machinery” of which no single individual had possession or control (Foucault 1980a: 156). The concept of sovereignty remained, according to Foucault, but it shifted primarily into the domain of humanism, where it functioned as a diffuse public right. Humanism placed human values and reason at its center, and gave humanity itself the responsibility for securing human welfare and fulfilling human
capacities. In the context of this shift, biopower served to maintain the integrity of the social group in the face of the individualizing force of humanism, in Foucault’s view (Foucault 1980a: 106). Humanism’s epistemology posited power as either an illegitimate or an alienating constraint, whereas truth was equated with autonomy. Thus, “because it posits the radical disjuncture of truth and power, humanism cannot recognize those exercises of power which operate through truth or, more precisely, through the human sciences” (Owen 1995: 495; emphasis added). In this way, biopower is self-expansive while it simultaneously obscures the exercise of power through which it expands its points of application and scope of operation.

Further, “because humanism identifies truth [with] autonomy, it elaborates ethical relations in which the achievement of autonomy is tied to obedience to the authority of truth . . . and, concomitantly, the reduction of political judgement to the technical deliberation of experts” (Owen 1995: 495; emphasis added). The nature and implications of this technical apparatus of expertise is articulated well by Dreyfus and Rabinow:

Bio-power spread under the banner of making people healthy and protecting them. Where there was resistance, or failure to achieve its stated aims, this was construed as further proof of the need to reinforce and extend the power of experts. A technical matrix was established. By definition there ought to be a way of solving any technical problem. Once this matrix was established, the spread of bio-power was assured, for there was nothing else to appeal to: any other standards could be shown to be abnormal or to present merely technical problems. We are promised normalization and happiness through science and law. When they fail, this only justifies the need for more of the same. (Dreyfus and Rabinow 1982: 196)

This summary of biopower and its relationship to humanism—particularly the assertion that humanism is not well equipped to recognize power that operates through the truth claims of the human sciences themselves—serves as a foundation for Foucault’s critical attention directed to expert, authoritative knowledge and the forms of intervention and action that seem reasonable or necessary based on that knowledge.21

21 The analytics of biopolitics provides both conceptual tools that are well suited to the problem at hand, but is also intended to fulfill a “critical function” (see Lemke 2011: 122). Foucault held the conviction that critique is necessary for political action (i.e., for effective resistance and for acts of modification) and that intelligibility is necessary for critique (Foucault 1990b: 100-101). By rendering certain practices, knowledge, and systems of constraint intelligible, Foucault attempted to provide tools to enable effective political action. He explains, “[c]riticism is a matter of flushing out . . . thought and trying to change it: to show that things are not as self-evident as one believed, to see that what is accepted as self-evident will no longer be accepted as such. Practicing criticism is a matter of
Lemke, Rabinow, and Rose have recently emphasized that a range of usages of “biopower” and “biopolitics” have become prevalent since Foucault’s work on the topic (Lemke 2011; Rabinow and Rose 2006). Concluding that many of these contemporary meanings are far removed from Foucault’s usage of the terms, Rabinow and Rose articulate what they deem to be the minimum necessary components to designate biopower in a Foucauldian sense:

- **One or more truth discourse** about the ‘vital’ character of living human beings, and an array of authorities considered competent to speak that truth. These truth discourses may not themselves be ‘biological’ in the contemporary sense of the discipline, for instance they may hybridize biological and demographic or even sociological styles of thought, as in the contemporary relations of genomics and risk, merged in the new language of susceptibility.

- **Strategies for intervention** upon collective existence in the name of life and health, initially addressed to populations that may or may not be territorialized upon the nation, society or pre-given communities, but may also be specified in terms of emergent biosocial collectivities, sometimes specified in terms of categories of race, ethnicity, gender or religion, as in the emerging forms of genetic or biological citizenship.

- **Modes of subjectification**, through which individuals are brought to work on themselves, under certain forms of authority, in relation to truth discourses, by means of practices of the self, in the name of their own life or health, that of their family or some other collectivity, or indeed in the name of the life or health of the population as a whole… (Rabinow and Rose 2006: 197, emphasis added)

Lemke outlines a parallel set of defining “dimensions of [the biopolitics] research perspective”:

- **Systems of knowledge** [that] provide cognitive and normative maps that open up biopolitical spaces and define both subjects and objects of intervention

- **[S]trategies of power** [that] mobilize knowledge of life and … processes of power [that] generate and disseminate forms of knowledge

- **[F]orms of subjectivation** (Lemke 2011: 119-120, emphasis added)

making facile gestures difficult. . . . [A]s soon as one can no longer think things as one formerly thought them, transformation becomes both very urgent, very difficult, and quite possible” (Foucault 1990b: 155). In this chapter, I describe the key analytic concepts that comprise this critical analytics of biopolitics.

22 Lemke is using the term “subjectivation” in the same way that others use the term “subjectification.” In this thesis, I use the term subjectification unless providing a direct quote in which the former term is used.
These articulations distill biopower’s key elements to: 1) knowledge, viewed as the truth discourses of human life provided by those experts and authorities who have legitimacy to provide this truth; 2) government, viewed as the techniques, interventions, and strategies that connect truth of human life to ways to effect human life; and 3) subjectification, viewed as the ways in which subjects come to know and govern themselves in accordance with this truth.

In this thesis, I am most concerned with the dynamics of knowledge and government. By contrast, the “Foucauldian literature” over the past two decades has been dominated by a focus on subjectification, and the ways in which power is exercised through free subjects as they take up rationalities for the government of their own conduct. More work following Foucault has focused on the pole of subjectification, subjectivity, and power over individual bodies than on the pole of regulation of the population as a species body. Regardless of why this has occurred, Weir emphasizes the importance of maintaining clarity about which pole of power (individual bodies or population) one is examining, and she calls for greater attention to the level of population, noting that,

"Particularly at this point in the genealogy of the health function, the asymmetry between power over population health and power over individual health needs greater emphasis, particularly in the study of risk governance, which is all too often conflated with the self-governance of the neoliberal subject, a move that occludes risk at the level of population, epidemiology and public health." (Weir 2006: 9)

In light of my own research interests and questions, I see the predominant focus on subjectification as posing two limitations. First, the emphasis on subjectivity readily leads to a focus on those who are viewed as most embodying autonomy, agency, reason, and volition. In the context of my research focus on the very youngest children and forms of “cognitively disabled” life that are most subject to exclusion, this is most likely to be parents, caregivers, guardians, and professionals. Thus I conclude that a focus on self-regulation and the powers of freedom severely constrains the kinds of questions one might ask about the government of child development and those with profound permanent impairments, unless one wants to study the subjectivity of those who surround the young child or significantly cognitively impaired. 23 The

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23 Here, I am reminded in particular of Foucault’s statement, “[m]y point is not that everything is bad, but that everything is dangerous, which is not exactly the same as bad. If everything is dangerous, then we always have something to do…. I think that the ethico-political choice we have to make every day is to determine which is the
second limitation is that the focus has not lent itself to examining exclusionary effects. In other words, it focuses on the “make live” portion of the “make live, let die” equation. Recently, cultural theorists have emphasized the need to look for the “missing bodies” and outcasts of modern power (see for example Bauman 2007; Casper and Moore 2009; Davis 2013).

Lemke’s approach to biopolitics is characterized by attentiveness to exclusionary effects that I find particularly useful for the purpose of the study undertaken for this thesis. Lemke concludes that a key distinction among biopolitical studies is between those that adopt a pessimistic and those that adopt a cautiously optimistic orientation. Lemke situates Agamben (see 1998, 2005) among those leaning toward pessimism, and Rabinow and Rose among those leaning toward optimism (Lemke 2011). I find this distinction useful, because it highlights the reality that those toward the former pole have focused on oppression, exclusion, death, and suffering. By contrast, for those toward the latter pole, the consequences of power sometimes seem to be about the travails of the free subject who is caught up in the machinery of biopower. While the former notices first and foremost the pressing burden of disproportionate suffering, the latter can give the sense of the relatively advantaged trying to gain escape from a constraint on freedom that is simply inconvenient. Lemke situates himself more closely with the view of cautious optimism, while simultaneously integrating attentiveness to mechanisms and effects of exclusion throughout his approach. Because of this, I find Lemke’s analytics of biopolitics the most productive approach for analyzing disability exclusion from a biopolitical perspective.

Lemke’s critical stance toward exclusion and marginalization is reflected through the way he thinks about and describes each of the three key elements of an analytics of biopolitics. For example, with respect to legitimized knowledge he asserts that “[o]ne must ask what knowledge of the body and life processes is assumed to be socially relevant and, by contrast, what alternative interpretations are devalued or marginalized” (Lemke 2011: 119). His treatment of subjectification similarly includes questions about how subjects actively come to experience themselves in terms of a devalued category in hierarchies of subject positions. However,
Lemke’s critical commitment is most obvious in his summary of the strategies of power. For this reason, it is worth quoting at length his description of this second aspect of biopolitics:

Second, as the problem of the regime of truth cannot be separated from that of power, the question arises of how strategies of power mobilize knowledge of life and how processes of power generate and disseminate forms of knowledge. This perspective enables us to take into account structures of inequality, hierarchies of value, and asymmetries that are (re)produced by biopolitical practices. What forms of life are regarded as socially valuable, and which are considered ‘not worth living”? What existential hardships, what physical and psychic suffering attract political, medical, scientific, and social attention and are regarded as intolerable and as a priority for research and in need of therapy, and which are neglected or ignored? How are forms of domination, mechanisms of exclusion, and the experience of racism and sexism inscribed into the body, and how do they alter it in terms of its physical appearance, state of health, and life expectancy? Also, this perspective investigates the ‘economy’ of the politics of life: who profits and how from the regulation and improvement of life processes (in terms of, for example, financial gain, political influence, scientific reputation, and social prestige)? Who bears the costs and suffers such burdens as poverty, illness, and premature death because of these processes? What forms of exploitation and commercialization of human and nonhuman life can be observed? (Lemke 2011: 119)

This excerpt reflects Lemke’s concern with the unequal distribution of suffering and burden, and how this is produced or reproduced through “biopolitical practices.” It also foreshadows several distinct mechanisms of exclusion or marginalization: structural inequality based in how differences are positioned in hierarchies of value; some life being viewed as altogether unworthy and disposable; and finally, the fact that only some kinds of “existential hardship” are made visible and prioritized, while others are invisible and less relevant. Although Lemke highlights the centrality of exclusionary effects to the functioning of biopolitics, he does not theorize exclusion in detail. In order to develop a theoretical approach to exclusion suitable to this study, I therefore draw upon the work of critical disability scholars Campbell (2005, 2009a, 2009b), Davis (1995, 2002, 2006, 2013), and Ravaud and Stiker (2001). I describe my theoretical approach to exclusion in section 2.3.

In this section, I have provided an overview of biopolitics that draws heavily upon Lemke’s approach to the topic. In the next section, I consider two forms of value that have become prominent under the neoliberal form of biopolitics: human capital, and potentiality.
2.1.2 Human Capital

According to Foucault, neoliberalism is a more recent iteration of biopolitical government involving a “multiplication of the ‘enterprise’ form within the social body…. It is a matter of making the market, competition, and therefore enterprise into what could be called the ‘formative power’ of society” (Foucault 2008: 147-148). Neoliberalism is a particular “governmentality,” which refers to “a system of thinking about the practice of government that has the capacity to rationalize some form of that activity to those who practice it and to those upon whom it is practiced, where this capacity entails to render thinkable and to render applicable or acceptable” (Tremain 2005: 11). Neoliberal governmentality is primarily concerned with the economy, and with an economic view of life. This concern likewise colonizes social policy. In neoliberal thought, “there is only one true and fundamental social policy: economic growth” (Foucault 2008: 144). It follows from this focus on economic growth that the space of human life itself would be opened to economic reasoning in new ways. According to Foucault’s reading, this is exactly what occurred. He notes that prior to neoliberalism, political economy viewed production as dependent on land, capital, and labor. Neoliberal political thought noticed that political economy had analyzed “land” and “capital” in great detail, but had considered labor in passing as a simple “factor of time” (Foucault 2008: 220). Consequently, neoliberalism problematized labor, and attempted to develop a more detailed analysis of the economy of labor. The result of this analysis was the proposition that labor is “human capital.” According to Foucault’s reading, the idea of human capital relies on a new logic. In this logic, although people spend time working in order to earn a wage, a wage should no longer be considered the price at which labor power is sold. Instead, a wage should be considered an “income,” where income very specifically denotes a return on capital. To be quite clear, this logic means that what people earn for their labor should be considered a return on capital. For neoliberal thought, it then follows that the “income-wage” is a return on human capital rather than a return on financial capital, because the return must logically be a return on the physical and mental abilities, capacities, and skills of the human worker who earned the return on capital (i.e., the “income-wage”). Thus, earnings are not best understood as a payment for labor, but as a return on the investment in human capital. In Foucault’s reading of this logic, “[t]his is not a conception of labor power; it is a conception of capital-ability which, according to diverse variables, receives a certain income that is a wage, an income-wage, so that the worker himself appears as a sort of enterprise for himself” (Foucault 2008: 225, emphasis added). In this view, human life becomes
capital and investing in human capital logically becomes integral to social policy, because human capital, the economy, and the social have become inextricably connected.

Foucault discusses this investment in relation to a North American version of neoliberal biopower. Interestingly, it is not difficult to see how the current focus on brain development could displace the focus on genetics that was relevant at the time of this 1979 lecture:

[If you want a child whose human capital, understood simply in terms of innate and hereditary elements is high, you can see that you will have to make an investment…. And as soon as a society poses itself the problem of the improvement of its human capital in general, it is inevitable that the problem of the control, screening, and improvement of the human capital of individuals…will become actual, or at any rate, called for. So, the political problem of the use of genetics arises in terms of the formation, growth, accumulation, and improvement of human capital. (Foucault 2008: 228-229)

All of the elements that can be shown to influence the child are considered relevant to human capital formation, including but not restricted to nutrition, parenting, education, training of the professionals who interact with children, parental education, quality of caregiving, and socio-economic and physical environment as well as “inborn corporeal and genetic endowment” (see also Foucault 2008: 229; Lemke 2011). While care and education were recognized as important factors in shaping the child prior to this, neoliberalism expands the set of relevant influences on children, and places all possible influences together under the rationale that they are influential in forming this “abilities-machine” for the economy. “This means that we thus arrive at a whole environmental analysis… of the child’s life in which it will be possible to calculate, and to a certain extent quantify, or at any rate measure, in terms of the possibilities of investment in human capital” (Foucault 2008: 229-230, emphasis added). In this view of neoliberalism, the period of childhood becomes an important stage for human capital formation.

Economists Becker and Schultz,24 who elaborate on contemporary human capital theory, “write that this ‘human capital’ can be seen as a scarce resource whose restoration, preservation, and accumulation require investment” (Lemke 2011: 110, emphasis added). While investments shape

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24 Becker is cited by Willms in his neuro-logical elaboration on “vulnerable children” (see Willms 2002). I discuss Willms’ formulation of vulnerability as the diminishment of brain-based human capital development in Chapter 7.
human capital, and some of these are made by the state, individuals become responsible for their own investment and return on investment, as well. In the logic of human capital theory, every individual becomes not only a capitalist but also the sovereign of him- or herself. With every action, he or she maximizes his or her individual advantage, but he or she also—to use Foucault’s formulation—exerts power in order to ‘make life or let die.’ Following the economic approach, diseases and (premature) death could be interpreted as the result of (wrong) investment decisions: ‘most (if not all!) deaths are to some extent ‘suicides’ in the sense that they could have been postponed if more resources had been invested in prolonging life’ (Becker 1976, 10; emphasis in original).” (Lemke 2011: 111)

In neoliberal governmentality, differences in individual human capital are thus the combined result of innate endowments and subsequent investments, with individuals held accountable for the management of their own human capital. The reality arises that differences in human capital lead to differences in income. In the neoliberal rationality in general, the best way to govern economic inequality among citizens is to find a way to provide what could be considered the minimum, “according everyone a sort of economic space within which they can take on and confront risk” (Foucault 2008: 144). Foucault asserts that, “social policy cannot have equality as its objective. On the contrary, it must let inequality function…” (Foucault 2008: 143). Neoliberalism operates on competition, and therefore relies on “a game of differentiations” in which “regulatory effects” are actually accomplished through managing fluctuation, and therefore difference (Foucault 2008: 142-143). When it is necessary for a welfare function to intervene to provide the minimum for each individual, the financial resources for this welfare function should be drawn from income that would be used for “over-consumption,” because “a transfer of income is dangerous when it is withdrawn from the part of income that generates saving and investment” (Foucault 2008: 143). In other words, the welfare function only ceases to be a danger to investment when it is drawn from surplus (or perceived surplus) that is not to be used for the investment function. Inequality thus has three characteristics. First, it is a logical result of differences in human capital. Second, it is the responsibility of individuals to manage subsequent investments after initial (i.e., childhood) formation of human capital. Third, inequality is largely unproblematic for society, so long as the minimum welfare is provided without drawing this aid from capital that would be used to support investment.

In this section, I have considered the biopolitical value attached to human capital. In the next section, I develop an analytic approach to exclusionary processes that integrates Foucauldian and
critical disability studies’ contributions on normality, exclusion/exteriorization, and inclusion/incorporation.

2.2 Theorizing Exclusion

Exclusionary processes occur in relation to an idea of normality, around which deviations from normality proliferate. Although the ethos of an analytics of biopolitics is to interrogate the forces of domination, exclusion, disadvantage, and devaluation, these can all be productively conceptualized as mechanisms for establishing the relationship of incorporation (or non-incorporation) of differences into society, as the normal space of collective life (see Ravaud and Stiker 2001). At the most basic level, differences are either “included” by being incorporated into hierarchies of values or are “excluded” by being expelled to the exterior as an existentially threatening “other” (see Seidman 2013). Ravaud and Stiker, writing in the specific context of disability, suggest that in contemporary liberal democratic societies, most forms of exclusion have in fact been replaced with modes of incorporation into society (Ravaud and Stiker 2001). Based on this insight, they offer a typology of exclusion/inclusion (Ravaud and Stiker 2001: 502-508):

- Exclusion through elimination
- Exclusion through abandonment
- Differentiated inclusion / Exclusion through segregation
- Conditional inclusion / Exclusion through assistance
- Inclusion through normalization / Exclusion through marginalization
- Progressive inclusion / Exclusion through discrimination

Ravaud and Stiker discern six distinct forms of exclusion in the history of disability, and find that four now operate more often through a mode of incorporation, though in most cases only a weak form of social incorporation is offered. The forms of exclusion for which this is not the case can in fact be viewed as forms of expulsion or exteriorization from society. In this way, Ravaud and Stiker’s typology reflects a distinction between profound “othering” and incorporation into hierarchies of value (see Seidman 2013 for a discussion of this distinction and the theoretical value of maintaining it). Table 1 documents my alignment of Ravaud and Stiker’s typology of exclusion/inclusion aligned and the analytics of biopolitics, including both how power is exercised over life and how difference is incorporated.
Table 1. Typology of Exclusion/Inclusion Aligned to Analytics of Biopolitics

<table>
<thead>
<tr>
<th>Form of Exclusion</th>
<th>Form of Inclusion</th>
<th>Power over Life</th>
<th>Relationship between Difference and Society</th>
</tr>
</thead>
<tbody>
<tr>
<td>Elimination</td>
<td>Expulsion precludes inclusion</td>
<td>Make die</td>
<td>Exteriorization</td>
</tr>
<tr>
<td>Abandonment</td>
<td></td>
<td>Let die</td>
<td></td>
</tr>
<tr>
<td>Segregation</td>
<td>Differentiated inclusion</td>
<td>Incorporation</td>
<td></td>
</tr>
<tr>
<td>Assistance</td>
<td>Inclusion through assistance</td>
<td>Make live</td>
<td>Differentiated value</td>
</tr>
<tr>
<td>Marginalization</td>
<td>Normalization</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Discrimination</td>
<td>Progressive inclusion</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The remainder of this section is organized into four subsections. In the first, I explain the concept of “normal,” which gives the distribution of differences meaning and value. In the second section, I discuss exclusion through the more extreme modes of expulsion, which relegate some differences to the exterior of society. In the third section, I discuss forms of inclusion, which operate through incorporation of some differences through weak forms of social inclusion. Finally, I provide a diagram that synthesizes modes of incorporation and exteriorization in relation to normality and society.

### 2.2.1 Normality

The production of normality and desirability constitute what is abnormal and undesirable. “Normal” carries several meanings. It may mean a natural norm (i.e., natural state), the norm as determined by statistical mean, or an ideal-typical “kind,” and it may convey a sense of typicality, averageness, or desirability (see Canguilhem 2007[1966]; Davis 1995; Hacking 1990; Lock and Nguyen 2010; Ravaud and Stiker 2001; Rose 1999). As Hacking notes, “[o]ne can, then, use the word ‘normal’ to say how things are, but also to say how they ought to be. The magic of the word is that we can use it to do both things at once. The norm may be what is usual or typical, yet our most powerful ethical constraints are also called norms” (Hacking 1990: location 3808). In a reflection on the norm in the context of the historical invention of the disabled body, Davis asserts:

We live in a world of norms. Each of us endeavors to be normal or else deliberately tries to avoid that state. We consider what the average person does, thinks, earns, or consumes. We rank our intelligence, our cholesterol level, our...
weight, height, sex drive, bodily dimensions along some conceptual line from subnormal to above-average. We consume a minimum daily balance of vitamins and nutrients based on what an average human should consume. Our children are ranked in school and tested to determine where they fit into a normal curve of learning, of intelligence. Doctors measure and weigh them to see if they are above or below average on the height and weight curves. There is probably no area of contemporary life in which some idea of a norm, mean, or average has not been calculated. (Davis 1995: 23)

This passage, which is drawn from Davis’ *Enforcing Normalcy* (1995), reflects several of the contemporary connotations of normal.

The word “normal” came to carry the connotation of “desirable” in the mid-nineteenth century, and from that period onward the word “normal” conveyed simultaneously the idea of the typical or “normal state” alongside the idea of desirability (Hacking 1990; Lock and Nguyen 2010: 32-56; Rose 1999: 75).26 Tracing some of the theoretical innovations that accompanied this shift, Hacking explains that Adolphe Quetelet (1796-1847), a French statistician, devised a method for establishing a quantitative representation of the “average man.” What Quetelet meant by average man was the average representation of a racial type (Hacking 1990: location 2564). Differences from the average or ideal type could be distributed around this average-ideal to form a curve. Quetelet took the further step of extending this normal distribution to a “theory of measuring ideal or abstract properties of a population” (Hacking 1990: location 2578). This included moral or intellectual properties that he did not attempt to measure. However, what mattered to Quetelet was the mean that corresponded to the average man, not the distribution of deviations per se. British eugenicist Sir Francis Galton (1822-1911) made several modifications to Quetelet’s curve that drew together the ideas of the normal and the desirable, and—alongside new methods to measure difference, and deployment of the statistical norm—form the basis for normalization. First, he redubbed it a “normal distribution” (Davis 1995: 32). Second, he based his normal distribution on the median rather than the mean, because “[i]f a trait, say intelligence, is considered by its average, then the majority of people would determine what intelligence should

25 Davis uses the term “normalcy” to designate the sociopolitical state of affairs that “relies on the control and normalization of bodies”—a biopolitics that requires that bodies and subjects strive toward the desirable “normal” (Davis 2002: 106-107).

26 See Hacking’s *The Taming of Chance* (Hacking 1990) for a more detailed discussion of the meanings of normal in historical context, including a consideration of when the various modern connotations of “normal” emerged.
be—and intelligence would be defined by the mediocre middle. Galton, wanting to avoid the middling of desired traits, would prefer to think of intelligence in ranked order” (Davis 1995: 33).

Biopower as anatamo-politics and biopolitics relies on the norm and on the distribution of differences around the norm. To base power on disciplining bodies and regulating populations requires “distributing the living in the domain of value and utility,” which itself is dependent on the power “to qualify, measure, appraise,… hierarchize” and effect “distributions around the norm” (Foucault 1990a: 144). Normalization means that through assessments and measurements of various kinds, any aspect of human life can be situated in a field of possible positions in relation to a norm. Techniques of assessment and measurement provide a means to base norms on systematic, quantified information that can produce statistical norms, percentiles, and rates of distribution. Other techniques are likewise used to produce knowledge of norms. A notable example in the context of this thesis is the detailed observation of children that enables identification of stages of development, or brain imaging that creates representations of the normal brain structure and activity as well as a range of deviations from this. Normalization, then, stands for the combination of measurements of norm and difference, imperatives toward normality, normative judgments, and techniques for normalizing (Foucault 1991). “The norm is something that can be applied to both a body one wishes to discipline and a population one wishes to regularize” (Foucault 2003: 253). It is important to note that normalization has more to do with applying normalizing techniques than with accomplishing an absolute conformity to norms.

Normalization operates based on knowledge of norms and deviations from them. In this sense, differences are tied to the identification of normal. The measurement of life undertaken in biopolitics perpetually produces a field of differentiation. The distribution of these differences in a “domain of value and utility” (Foucault 1990a: 144) guarantees hierarchies of value (e.g., by socio-economic status, race, ethnicity, sexual orientation, gender identity, ability level). The terrain of normality and differentiation shifts, therefore the value and utility attributed to particular differences varies (although certain differences maintain a less valued place in the hierarchy over time). Together, normality and differentiation around the norm form a constellation that itself has an exterior. For example, Davis asserts (18 years after his work, Enforcing Normalcy), that the enforcement of normalcy seems to be giving way to the embrace of diversity, yet there remains an exterior populated with certain abject, monstrous, and disabled bodies that society does not admit into the category of “diverse.” According to Davis, what is
cast to the exterior today is anything that cannot be formed into the neoliberal subject. Conversely, what is cast to the exterior helps to define the neoliberal subject. “Thus ‘we are all different, therefore we are all the same’ becomes ‘we are all the same because we aren’t that kind of different’” (Davis 2013: 13-14, emphasis in original). The defining characteristic of “that kind of different” is that it is synonymous with inadmissibility. In fact, the only forms of life that get cast to the exterior in biopolitics are those that by definition cannot be incorporated, because they are profoundly (and threateningly) distinct from the desirable norm or self-identity. It is the irrelevant remainder to what is deemed normal (or “diverse”) and desirable.

It is critical to be clear that it is not the naming of the exteriorized “other” that makes it exterior to both normality and the differences distributed in relation to it—the production of normality itself determines what cannot be incorporated into “normal” difference or society. This point is illustrated by Davis’ discovery that abject bodies are missing from the “diverse” company of neoliberal subjects: he does not discover that the abject are named and framed as needing to be expelled from diversity, he discovers that they are missing (Davis 2013). In a thought experiment, he imagines a range of bodies in the ad campaigns of a clothing company that is fond of marketing diversity. In this exercise, he finds a number of bodies inadmissible. Among these are, for example, the extremely morbidly obese, the comatose, and the profoundly disabled. According to Davis’ reading, these are among the bodies that cannot be celebrated in the era of diversity-normality (which is populated, as he notes, with neoliberal subjects). Davis makes no claim that this array of inadmissible bodies would remain the same over time. The un-incorporable may be “unthought,” unacknowledged, or unrecognized, thus, it is important to make the distinction between naming difference and making exclusion. This distinction points to the value, if not necessity, of scrutinizing normality as well as the distribution of differences around normality to expose what can and cannot be incorporated. However, as Campbell notes, “[a]lthough we can speak in ontological terms of the history of disability as a history of that which is unthought, this figuring should not be confused with erasure that occurs due to total absence or complete exclusion. On the contrary, disability is always present (despite its seeming absence) in the ableist talk of normality, normalization, and humanness. Indeed, the truth claims that surround disability are dependent upon discourses of ableism for their very legitimation” (Campbell 2005: 109 emphasis in original). Overboe points out that this presence constitutes a “normative shadow” that is simultaneously intangible and phenomenologically potent for disabled persons (Overboe 2007).
In this section, I have focused on the production of normality, difference, and (to borrow Campbell’s term) the “unthought” exterior to both. In the next two sections, I consider Ravaud and Stiker’s typology of exclusion/inclusion, which is a way of characterizing the management of difference to socially produced norms.

### 2.2.2 Modes of Incorporation

Ravaud and Stiker (2001) distinguish six types of exclusion, four of which are associated with a paired type of inclusion. They offer brief descriptions of each type intended to be illustrative rather than definitive (see Table 1). In this and the next section, I provide a summary of types of exclusion/inclusion that is based in, and extends upon, Ravaud and Stiker’s provisional typology. I first describe the four types of exclusion/inclusion pairs. In each case, differentiated forms of life have a place in society, but it is not a privileged place in relation to hierarchies of value or the social, political, and economic matrices of asymmetry. In the following discussion, I use Ravaud and Stiker’s types as a launching point to delineate several distinct modes through which incorporation operates.

Of Ravaud and Stiker’s forms of inclusion, **progressive inclusion** is distinct from the others insofar as it assumes that all individuals—able-bodied and disabled—are attributed equality before the law in liberal (including advanced or neoliberal) political thought. Ravaud and Stiker conclude that, “intentional discrimination of [disabled] individuals is then proscribed” (2001: 507). In this view, liberal political thought has built-in forms of remedy or recourse for those facing discrimination. While Ravaud and Stiker do not problematize progressive inclusion, it is important to note that what it promises is inclusion into the normal order of things, or at least the right to stake a claim for inclusion into this normal order. However, as critical disability scholar Campbell has pointed out, “[a]ctivists with disabilities have placed great trust in the legal system to deliver freedoms in the form of equality rights and protections against discrimination. While these equalization initiatives have provided remedies in the lives of some individuals with disabilities, their subtext of disability as negative ontology has remained substantially unchallenged” (Campbell 2005: 108-109). The incorporation that can be achieved through progressive inclusion should not be confused with the absence of exclusionary effects as defined in this thesis.

The second mode of inclusion is **normalization**. Normalization finds its natural pair in exclusion through marginalization, both of which view difference as deviation from specific norms.
Marginalization presses these deviations toward the exterior, without expelling them from society. However, incorporation can be readily applied when deviations are targeted for remediation, rehabilitation, or modification. If normality cannot be recuperated, it is possible that it may be approximated. A prosthetic limb provides an example of this. With technological advances, the range and complexity of prosthetic resources for normalization is increasing. An underlying principle of normalization is to bring difference into alignment with normality to the extent possible. Incorporation through normalization is an ongoing process that is driven by the imperative to incorporate rather than the possibility of achieving complete alignment with normality. The impossibility of achieving an endpoint is in fact assured by the very measures and techniques of differentiation that enable deviation to be identified in the first place. Normalization is not necessarily applied to all forms of life, however. Normalization presumes that an alignment with normality is imaginable and imagined as desirable.

The next form of inclusion, which involves assistance, offers a weaker mode of incorporation. Ravaud and Stiker explain inclusion through assistance as an, “‘economic’ form of exclusion” that operates through models of protection, charity, and aid (Ravaud and Stiker 2001: 505). Such “[a]ssistance is a form of economic exclusion that defines those who are ‘useless to society’” (Ravaud and Stiker 2001: 506, emphasis added). As a replacement to charity, social assistance through the welfare function seemingly offers far more incorporation into society through a conditional inclusion. However, Ravaud and Stiker argue that social security and welfare are “weak forms of participation in society” (2001: 506). Further, they contend that, “social assistance policies do not have the elimination of poverty as their objective, as one might believe, but its integration into the system, to the benefit of the latter” (Ravaud and Stiker 2001: 506 emphasis added). In this context, those who are assisted occupy a low status in hierarchies of value, and a dependent status in the social, political, and economic matrices of asymmetry. More fundamentally, this mode of inclusion is tied to the identification of “useless” aspects of life, and assisting these only insofar as doing so is a necessary step to ensure sufficient social incorporation to foster societal functioning. This ties directly to Foucault’s discussion of the welfare function under neoliberalism, summarized above.

The final form is differentiated inclusion, which is a mode of incorporation serving as an alternative to exclusion through segregation, which physically segregated the disabled through forms of confinement (such as a leprosy colony or an institution). Confinement produces a physical separation. As some forms of confinement have been abandoned (although by no means
has confinement been eliminated), a differentiated inclusion maintains the principle of segregation while doing more to incorporate difference into society. Differentiated inclusion may segregate in more temporary ways, such as through use of a special education classroom during a portion of the day. It may also segregate through the application of specialized plans and procedures for those who qualify for special education, even as education is carried out in an integrated classroom. The defining factor is, I suggest, not the provision of a separate space, but instead the idea that an identified difference must be distinguished from and treated differently than normality. Distinct spaces, standards, or governmental techniques may be applied.

These forms of inclusion reflect distinct rationales and modes of incorporation. Progressive inclusion acknowledges the right of each to seek remedy for discrimination that inhibits incorporation. This form of incorporation, however, can only occur on the basis of an underlying equality among claimants, though this could be shared citizenship or claim to common humanity/human rights. Inclusion through normalization attempts to recuperate or realign difference to normality. While the measurement of norms creates a limitless supply of deviations, normalization offers equally limitless access to incorporation through techniques of rehabilitation, remediation, and recuperation that seem to promise improved alignment with normality. Inclusion through assistance holds sway among differences that are deviations, but are “useless” and by implication not inherently worthy of recuperation to normality. However, social assistance is offered to the extent—and only to the extent—that integration through assistance benefits the social system as a whole. Finally, differentiated inclusion identifies a set of differences that cannot be normalized. Differentiated inclusion comes into play when differences are seen as inherently different from normality, and thus require a separate identity, space, or forms of management. At the same time, these differences do not rise to the level of profound threat, which would require expulsion and exteriorization rather than incorporation.

In this section, I have considered the four types of inclusion that Ravaud and Stiker (2001) describe as modern forms of incorporation that have largely displaced four paired forms of exclusion. In the next section, I have provide an overview of the two forms of exclusion through casting to the exterior, which entail the power to “make die” or “let die,” and are not paired with a corresponding form of inclusion (see Table 2.1).
2.2.3 Modes of Exteriorization

The first two types of exclusion identified in Ravaud and Stiker’s typology (see Table 2.1) expel difference from society. By definition, these do not involve incorporation into society. The first of these types is exclusion through elimination, which may include eugenics, euthanasia, murder, or any other direct causing of death. In other words, this form of exclusion uses the sovereign power to “make die.” The second is exclusion through abandonment. In this case, death may occur, but the defining characteristic is abandonment or withdrawal of care. In a sense, it is a refusal to incorporate. This form of exclusion uses the power to “let die.” Ravaud and Stiker do not provide a mode of inclusion to correspond to either exclusion through elimination or exclusion through abandonment. These forms of exclusion are based on the principle of placing the disabled in the exterior, without offering any mode for inclusion. In this way, these forms of exclusion reflect the process of profound othering and exteriorization. Life is subjected to such forms of exclusion when it is perceived to embody monstrosity, abjection, or pollution that is viewed as a grave threat to the most fundamental categories and order of a society—the very basis for othering (Seidman 2013).

There is a strong correspondence between these forms of exclusion and Foucault’s consideration of what legitimizes death under biopolitics, or in other words within a society based around biopower. His treatment of this topic is worth discussing here, as it supports a more nuanced understanding of when and how there is a biopolitical rationale for expelling difference. The primary source of this discussion is in the last lecture of Society Must be Defended, Foucault’s lecture series at the Collège de France in 1975-1976 that focused overall on the war between races (Foucault 2003: 239-264). Foucault’s aim was to understand what form of reason enabled biopower, with its focus on maximizing and regulating life, to make die or let die. He was not attempting to account for killing that would be considered criminal or otherwise illegitimate under biopower. Instead, he meant to ascertain whether legitimized killing reflected a remaining aspect of sovereign power, an excess of biopower, or something else. Foucault provided two answers. In the extraordinary case of Nazi Germany, Foucault concluded that, in part, the legitimization of killing was the result of a state that found a means to be an absolute expression of both biopower and sovereign power in an integrated form. He viewed this “accomplishment”

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27 For considerations of this lecture by others, see Inda (2014), Lemke (2011), and Rabinow and Rose (2006).
as both unusual and self-destructive for the state. Foucault’s second answer was that biopower legitimizes killing when racism (existing long before and distinctly from biopower) intervenes.

While Foucault used the term “racism” to describe the rationale that permits killing under biopower, the choice of this term may have had more to do with the fact that he was speaking in a lecture series on race wars than with the fact that his point applied narrowly to our contemporary idea of race. In fact, race implied something broader in the period he discussed. For instance, Davis cites Alexander Graham Bell’s *Memoir upon the Formation of a Deaf Variety of the Human Race*, noting that the eugenicist text raises fears that deaf-mutes will marry other deaf-mutes and procreate “a race of deaf people” (Davis 1995: 54). It is useful to focus on the three characteristics that legitimized killing, rather than focus on the idea of “racism.” First, Foucault finds that in the contexts of biopower, legitimized killing is based on establishing a division within the population or species body based on attributes that are deemed important. In so doing, the human population becomes multiple distinct populations. Second, Foucault states that it is also necessary for a relationship to be established between populations, life, and death such that “the very fact that you let more die will allow you to live more” (Foucault 2003: 255). Foucault clarifies that this does not mean that one population will live because it is free from the threat of being killed by an enemy population. Instead, he means to refer to conditions in which taking life deemed “other” allows the self-identified population to be more pure, more vital, or more alive. Finally, Foucault emphasizes that when he refers to making or letting “die” in this context, he means to refer to a range of means of elimination, including, “exposing someone to death, increasing the risk of death for some people, or, quite simply, political death, expulsion, rejection, and so on” (2003: 256).

In a very concrete way, elimination, abandonment, expulsion, and rejection place life on the exterior of society, sometimes to the extent of death. Joining Foucault’s analysis to the discussion of otherness offered above, two conditions of possibility can be identified as legitimizing the elimination or abandonment of life under biopower: 1) this portion or form of life is identified as exteriorized “other;” and 2) eliminating or abandoning this aspect of life is associated with greater vitality for the self-identified portion of life. It is possible to see such elimination and expulsion applied to individuals, but I suggest it is also analytically useful to consider elimination in terms of forms and aspects of life that may not correspond directly to an individual. In this way the question becomes, what part of life is deemed a grave threat to the
most fundamental categories and order of a society, and consequently is left or placed in the exterior so that it will, or may, cease to exist?

2.2.4 Diagramming Incorporation

These modes should not be taken to refer to incorporation into an objectively existing, natural social or physical world. As discussed in section 2.2.1, the normality that gives differences its meaning is itself a socially produced reality. The production of normality produces its differences, and modes of incorporation articulate the mechanisms available to associate differences with that normality. Exteriorization then describes the remainder, or what is left outside the limits of incorporable difference. In Figure 2, I provide a provisional visual representation of this arrangement. Society is imagined to be convergent with the space of progressive inclusion. Within this, normalization occupies a large space. The small grey marker represents “normality,” an ideal that is small in comparison to the domain of life that may be subject to normalization. Differences are perpetually produced in this space, and an ongoing process of incorporation through normalization operates. A smaller portion of life is set into the space of “assistance,” a form of incorporation that neoliberalism prefers to minimize (see section 2.1.2). Finally, differentiation offers a final way to incorporate life that is the most different, and occupies the boundary space between what can and cannot be incorporated. Abandonment and elimination occupy the space past the imaginary limit of society. As the function of “make die,” elimination occupies its own defined space in this depiction. To occupy this space within the context of biopower, difference must be explicitly identified as “other”; and its elimination must be associated with greater vitality for the life that is interiorized (see section 2.2.2). As the function of “let die,” abandonment may not be so well defined, and thus is left in an open space just beyond the boundaries in this depiction. Although this entire arrangement is an “imaginary,” it nonetheless corresponds to material and phenomenological effects.
2.3 Conclusion

In this chapter, I have outlined my adaptation of an analytics of biopolitics, which articulates additional analytic tools with which to approach disability exclusion/inclusion in the context of contemporary knowledge, and economization, of life. Biopolitics is characterized by a productive power that aims to optimize life. However, life may also be abandoned or eliminated. Abandonment performs the biopolitical function of “let die” for parts of life that do not seem worthy of optimization. Life may also be eliminated if it is identified as distinctly different, and its elimination will have the effect of increasing the vitality of “normal,” self-identified life.

Utilizing insights from critical disability scholars Davis (2013) and Campbell (2005), I adopt the analytic approach of exposing exclusionary processes through interrogating the production of normality and the modes of incorporation applied to differences. To articulate the modes of incorporation, I developed an alignment of Ravaud and Stiker’s (2001) typology of exclusion/inclusion with the form of power exercised over life and the relationship established between difference and society (see Table 1). I have formulated this alignment as a set of modes of “incorporation” and non-incorporation (or exteriorization). This alignment provides a useful analytic tool for considering the nature and probable consequences associated with modes of incorporation. As a whole, the analytic toolkit I developed in this chapter allows me to examine disability exclusion/inclusion in biopolitical processes in a contemporary context in which childhood is viewed as an opportunity to invest in human capital, and emerging knowledge of human life defies the boundaries between human/non-human and life/death.
In the next chapter, I review the literature that has addressed the role and value of the child in the context of biopower in general and of neoliberalism and the neuromolecular turn in particular.
Chapter 3: Literature Review: Child and Brain Development in the Biopolitics of Population

3 Introduction

My purpose in this chapter is to situate my research in relation to the literature on the governmental value of early childhood in general, and of the brain-centered view of child development more specifically. In this thesis, I view the National Children’s Agenda (NCA)’s focus on early development as one instance in a long history of mobilizing childhood in efforts to govern collective life (see Cunningham 1995; Foucault 1980a; Hultqvist and Dahlberg 2001; Rose 1990; Sutherland 2000[1978]; Swain and Hillel 2010). In its contemporary form, the governmental value of childhood is tied to the potentiality, malleability, and indeterminacy attributed to the figure of the child (Castañeda 2002), making it one among multiple domains of life in which potentiality is now sought (Taussig et al 2013; see also Martin 2013). Following Foucault, I see this policy focus on early development more specifically as an instance of childhood as a period of human capital formation in neoliberal governmental reason (Foucault 2008). Finally, I view the brain-based focus in general, and the Canadian version of this in particular, as a reflection of the shape human capital formation may take as the idea of human life is transformed through a “neuromolecular” style of thought (Abi-Rached and Rose 2010; Martin 2010; Ortega and Vidal 2011; Pitts-Taylor 2010; Rose 2013; Rose and Abi-Rached 2014; Vidal 2009).

It is worth noting from the outset that I intentionally focus on knowledge of childhood rather than the lived experience of children, and that I view my work as situated within a broadly critical and interpretive (as opposed to objectivist-realist) approach (see Lock and Scheper-Hughes 2010; Schwartz-Shea and Yanow 2012). My focus on the idea of childhood informs the scope of my literature review, and my critical interpretive approach shapes my reading of the literature. First, I am concerned with the idea of early childhood and its use in governing collective life. Although such social ideas always intersect with lived experience (though not necessarily in a causal or determinative way), my primary concern here is the ideas and how they
intersect with techniques of government (see Lock and Scheper-Hughes 2010).28 I also adopt an interpretive approach. In referring to interpretive versus objectivist-realist approaches, I am borrowing from the distinction drawn by Schwartz-Shea and Yanow (2012). The objectivist-realist approach draws “on analytic methods that enact positivist [or post-positivist] modes of scientific knowing (e.g., a realist ontology, the possibility of objective knowledge, generalizing universal laws),” which are quite distinct from the concerns with phenomenology, meaning, and the situated nature of knowledge that undergird interpretive approaches (Schwartz-Shea and Yanow 2012: 5). Finally, following Foucault, I further adopt a critical ethical stance toward researching knowledge of childhood. As Foucault describes, “[c]riticism is a matter of flushing out… thought and trying to change it: to show that things are not as self-evident as one believed, to see that what is accepted as self-evident will no longer be accepted as such. Practicing criticism is a matter of making facile gestures difficult… [A]s soon as one can no longer think things as one formerly thought them, transformation becomes both very urgent, very difficult, and quite possible” (Foucault 1990b: 155).

The body of this chapter is organized into two sections. In the first, I describe the literature pertaining to the use of childhood in governing collective life, with a strong emphasis on the literature on “modern childhood.” In the second, I turn my attention specifically to analyses that focus on child development and brain development in neoliberal governmentality.

3.1 Childhood in Modern Biopolitics

In one of the most frequently quoted passages in social and cultural studies of childhood, Rose states that,

[c]hildhood is the most intensively governed sector of personal existence. In different ways, at different times, and by many different routes varying from one section of society to another, the health, welfare, and rearing of children have been linked in thought and practice to the destiny of the nation and the responsibilities of the state. The modern child has become the focus of innumerable projects that purport to safeguard it from physical, sexual and moral danger, to ensure its ‘normal’ development, to actively promote certain capacities

28 Lock and Scheper-Hughes (2010) provide an excellent consideration of the interconnection of phenomenology, social meaning, and structured nature of power (including biopolitics) in their outline of a critical interpretive project for medical anthropology that takes account of the “lived body,” “social body,” and “body politic.”
of attributes such as intelligence, educability and emotional stability. (Rose 1990:87)

Scholars from a range of social and cultural disciplines identify childhood as a frequent and important target of governmental attention and action (in anthropology see Scheper-Hughes 1992; in cultural studies see Nadesan 2010; in education see Bloch et al. 2003; in history see Ariès 1962; Gleason 2010; Sealander 2003; Sutherland 2000[1978]; in sociology see Rose 1985, 1990; Smith 2012; Strandell 2010; see also McGillivray 1997). Moreover, childhood is frequently used to mobilize social action related to—but also extending well beyond—childhood, and with varying degrees of resemblance between the image and substantive reality of children (see for example Castañeda 2002; Comacchio 1993; Cunningham 1991; Donzelot 1997[1979]; Foucault 1980b; Libal 2001; Lomawaima 1993; Millei 2011; Rose 1990). An extensive body of work exploring this relationship between the child and the “body politic” illustrates the myriad ways in which the body and the idea of the child are pivotal in governing populations (Comacchio 1993; Davin 1978; Donzelot 1997[1979]; Foucault 1980a; Gupta 2001; Hultqvist and Dahlberg 2001; Mitchell 1991; Rose 1990; Sealander 2003; Sutherland 2000[1978]; Zelizer 1985).

Throughout modernity, managing the relationship between the child and the government of the population as a whole necessitated expert knowledge of normal childhood, knowledge of differentiation within childhood and its social relevance, and techniques for acting upon differences in socially and politically meaningful ways. In western cultures, the category of the child—or childhood as a stage of life distinct from adulthood—is contemporaneous with the shift to modernity and thus with the shift from sovereign to bio-power (Donzelot 1997[1979]; Foucault 1980a; Hultqvist and Dahlberg 2001; Rose 1985, 1990). From the outset, marking childhood off as a distinct stage of life was tied to specific ways of governing—and governing

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29 The “body politic” points toward the ways meaning and power operate over human life in its aggregate forms, whether these are conceptualized as a nation, a population, or a community. The idea of the body politic emerged historically from an analogy between the nation and the body, with the prince or other sovereign representing the head guiding the nation, the church as the heart, and so forth. The body politic also connotes the metaphoric relationship between the nation and the individual body. “If individual citizens are not fit, if they do not fit into the nation, then the national body not be fit” (Davis 1995: 36). Lock and Scheper-Hughes identify the body politic as one of three levels of analysis in a critical-interpretive approach to medical anthropology. The other two levels discussed are the lived body and the social body. The lived body refers to the phenomenological level at which individuals have a lived, embodied experience that is inclusive of all physical and emotional experiences. The social body points toward the level of shared social constructions, at which the body itself is a meaningful social object intertwined with social meaning that is far broader than the individual (Lock and Scheper-Hughes 2010).
through—social institutions such as the family, schooling, psychology, and pediatrics (see Ariés 1962; Cunningham 1995; Donzelot 1997[1979]; Foucault 1980a; Rose 1990). The family, schools, and fields of expertise such as psychology and medicine had specific roles and responsibilities with respect to children to support broader societal objectives for individual and population development (see especially Donzelot 1997[1979], Foucault 1980a, Rose 1990). This responsibility involved not only fostering desirable traits (like health, intelligence, and industriousness), but also preventing undesirable outcomes (such as illness, “feeble-mindedness,” and delinquency). Fulfilling this responsibility further necessitated the capacity to differentiate between desirable and undesirable kinds of childhood, as well as between effective and ineffective techniques for intervening in children’s upbringing. Consequently, modern childhood is characterized by differentiation within childhood as well as differentiation of childhood from adulthood.

In the following sections, I summarize key contributions to understanding the use of childhood in the biopolitics of populations. Following from my analytic approach, I address truth discourses, governmental practice, and exclusionary effects. This section is therefore organized into three sections. First, I discuss the category of “the child” as a modern “invention.” Second, I consider the specialized knowledge and governmental techniques that arose in connection with modern childhood. Finally, I discuss literature on how governmental attention to childhood constructed “abnormality” by virtue of the fact that some forms of childhood did not fit into the acceptable boundaries of “normal.”

3.1.1 The Modern Category of the Child

With the Enlightenment, the body of the child came to be seen as “emblematic of the nation’s future” (Hörschelmann and Colls 2009: 11) and as a national asset and resource (see Comacchio 2010; Kuxhausen 2013; Swain and Hillel 2010). While innumerable projects aimed to mold, heal, or manage the bodies and minds of children themselves—whether individually or in groups and categories of those considered desirable and undesirable—the “child” filled a function in securing collective welfare that extended well beyond the lives of children themselves. As Hörschelmann and Colls describe this dynamic, “[c]oncern is focused not solely on the well-being of individual children, but equally on the health of the nation, creating a biopolitical complex that sees the reform of youthful bodies as crucial to society’s future…. Ironically, for such a biopolitics, the individual young person matters little” (Hörschelmann and Colls 2009: 4).
Among the most fundamental conditions of possibility for the child having a role in biopolitics is the differentiation of childhood as a phase of life distinct from adulthood, which in the western context emerged with the shift from the medieval to modern period (Ariès 1962; Cunningham 1995; de Mause 1974; Shorter 1975; Stone 1977). Childhood came to be understood as an important stage for shaping the adult person (Hill 2004; Rose 1990). The protection, or safeguarding, of children continued until they reach a stage of development at which they are seen to demonstrate volition and autonomy akin to adults (Stasiulis 2002). Along this individual trajectory of childhood to adulthood, the care and attention provided in childhood awaken, inculcate, or educate the child to full adulthood. Society as a whole, and social institutions in particular (whether family, school or community), have a responsibility for the care and upbringing of children until they develop into adulthood, for the very fact that children must “become” autonomous adult persons. The idea that eventual adulthood provides the rationale for the attention and care in childhood is illustrated by the sociologist T.H. Marshall when he writes in 1950: “Fundamentally it should be regarded not as the right of the child to go to school but of the adult to have been educated” (cited in Yeatman 1994: 73). The modern ideas that the child is that human being who has the potential to grow to adulthood and that the potential of the body politic is rooted in the nation’s children became a more generalized association between potentiality and child-ness (Castañeda 2002).

The idea that childhood is a modern invention is generally traced to Ariès’ Centuries of Childhood (1962). In this volume, Ariès argues the idea that children occupied a particular and distinct stage of life emerged with the shift from medieval to modern society. Drawing evidence from texts and visual representations, he observed that there were no games, pastimes, or styles of dress that were specifically designated for children in French medieval society. Instead, children were represented like small adults, who entered the company of adults quite early in life. The distinctions of childhood, including schooling, arose in French society only with modernity. Cunningham has pointed out that Ariès’ thesis can be seen as an extension of the argument advanced in The Civilizing Process (Elias 2000[1939]), in which Elias asserted that an increasing social and conceptual distance between adulthood and childhood began to emerge in the early modern period (Cunningham 1995: 5, see also Wyness 2012: 14). Although Ariès and Elias converged on this point, they arrived at it from different directions. For Ariès, the starting point was the idea of the child, and much of his thesis revolved around how the modern forms of childhood, the family, and schooling emerged in relation to one another. By contrast, Elias was
concerned to explain the gradual civilizing process, one consequence of which was “increasing bodily and psychological distance between adults and children” (Shilling 2012: 171). In this view, a set of behaviors was likewise cast as child-like as the nature of civilized adulthood was articulated in detail, thus opening a divide between childhood and adulthood (see also Sutherland 2000: v).

The idea of the child took on special meaning with modernity’s underlying philosophy of humanism, in which “[c]hildren were thought to hold the key to the future of the state, and their proper upbringing was crucial to that future” (Cunningham 1995: 42). This centrality of childhood was a stable feature of humanism even as philosophical, theoretical, and practical approaches to childhood varied. For instance, Cunningham describes a history of childhood in western societies in which childhood is alternately viewed as preparation for the future (whether adulthood, or heaven), a period of life to be valued for itself rather than as preparation, a time for obedience to paternal authority, and a tabula rasa to be filled through education (Cunningham 1995). This was thus a history of conflicting points of view, as well as a history of emergent trends. In their analysis of child rescue discourse in England, the United States and Canada, Swain and Hillel argue that the child body was “conceptualised as one component of the body of the nation” (Swain and Hillel 2010: 58). Child rescue was about imagining the degeneracy or fitness of the nation. For example, “[t]he pre-eminence of the English nation and the British race was understood to be both fragile and conditional. Without continuing attention to the fate of childhood at home, the empire, and ultimately the nation, would be lost, and God’s bounty squandered. The work … was now recognised as essential for national survival. However, the unwritten assumption was that the child was to be moulded to meet the needs of the nation rather than the nation adapting to meet the needs of the child” (Swain and Hillel 2010: 75).

The fact that the child was pivotal in governmental thought and practice as a resource for building the desired society is illustrated by the centrality of the child to colonial projects to extend the nation’s reach. Intervention in the birthing, rearing, and education of native children

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30 A body of literature, which is well beyond the scope of this thesis and thus is not reviewed here, emerged to examine precisely when and how modern childhood developed (see Cunningham 1995; de Mause 1974; Pollock 1983; Shorter 1975; Stone 1977). This literature reflects variation in the extent to which researchers focus on the idea of childhood versus the experience of childhood, the location studied and sources used for evidence, and the conclusions drawn. For the purposes of this thesis, what is most relevant about this literature is that it supports the idea that childhood emerged in tandem with modernity as a distinct stage of life that was pivotal to the modern enlightenment project.
was utilized as a mechanism for transforming the colonized body politic abroad, as well as in efforts to colonize indigenous bodies and minds through the Indian schools in North America (see Boddy 2007; Lomawaima 1993; Mitchell 1991). Analyzing colonial history and its legacy in Egypt, Mitchell notes that, “[t]he model school was a model of the perfect society,” in which “[a]uthority and obedience were diffused, without diminution, throughout the school, implicating every individual in a system of order” (Mitchell 1991: 71). Here, placing child bodies into a grid of educational practice imposed an order not only on children, but also for society. Building societal order was fostered by, if not predicated on, shaping childhood. Discussing a similar kind of initiative to colonize minds of bodies of a community, Lomawaima explores the effort to shape a race through educating young girls in domesticity in Federal Indian Schools in the United States. “The struggle to reform the Indian home targeted the education of young women. They would serve as the matrons of allotment households, promoting a Christian, civilized lifestyle and supporting their husbands in the difficult climb up the cultural evolutionary staircase (from hunter or pastoralist to farmer)” (Lomawaima 1993: 231). Here, the formation of each individual child provided a pathway to (re)form each family, therefore enabling the civilizing process to take hold. As Stephens notes, “…it is not only modern European national citizens who should have a particular sort of childhood, but populations around the world, in need of ‘civilization’ and ‘development.’ Colonial projects were dependent not just on the establishment of new political and economic organizations, but also on the formation of social actors able and willing to function in complementary ways within them” (Stephens 1995: 16).

In this section, I have focused on the emergence and key characteristics of the modern idea of childhood as a distinct, nationally valuable phase of life. In the next section, I consider how this related to the development and application of knowledge, techniques, and responsibility for shaping children.

### 3.1.2 Modern Expertise and Governmental Techniques

As childhood became a “‘phase’ perceived as being both specific and finalized,” it came to be seen as requiring special attention, knowledge, and management (Foucault 1980a: 172). Expert knowledge developed in tandem with this view of the child, particularly through the disciplines of pediatrics, psychology, and education (Foucault 1980a; Hultqvist and Dahlberg 2001; Rose 1985, 1990). Professionals as well as families took up the responsibility of governing childhood through new technical means that emerged alongside expert knowledge. Ariés’ work describes
the entanglement of the idea of childhood with the very social institutions—the modern family and formal schooling—that were given social responsibility for the care of children (Ariés 1962). In his view, modern forms of childhood, family, and schooling emerged together, and in relation to one another. For Ariés, one of the characteristically modern changes was a growing divide between the zones of public and the private life of the family, which paralleled the growing recognition of a divide between childhood and adulthood. The family became a space of private life, distinct from the kind of collective life that Ariés assumed preceded modernity. Writing from the sociological point of view, Prout makes the case that, “by the end of the nineteenth century, conceptions of children as innocent, ignorant, dependent, vulnerable, generally incompetent and in need of protection and discipline were widespread,” and that these ideas were both “supported and … reinforced by the effort to construct the school and the family as the ‘proper place’ for children” (Prout 2005: 35-36).

Through the course of the twentieth century (at least in Western contexts), there was also a general shift in focus from the management of child survival, health, and morality to the management of social, emotional, and intellectual development (Rose 1990). The nuclear family was initially an important locale for social concerns about hygiene and personal health (Ariés 1962). In Foucault’s view, “[t]he family is no longer to be just a system of relations inscribed in a social status, a kinship system, a mechanism for the transmission of property. It is to become a dense, saturated, permanent, continuous physical environment which envelops, maintains and develops the child’s body...health, and principally the health of children, becomes one of the family’s most demanding objectives” (Foucault 1980a: 172-73). The societal responsibility to develop healthy children was invested in the family, which by extension became a pivotal domain for the realization of any societal objectives to maximize the wellbeing of the population and the capacities of the individual. In this respect, “[t]he family is assigned a linking role between general objectives regarding the good health of the social body and individuals’ desire or need for care” (Foucault 1980a: 174). Over time, the family likewise became the locus of child-centered domesticity (Hareven 1991), and mental health became a pervasive problem in need of management for the “normal” Canadian family in the mid-twentieth century (Gleason 1997). Gleason notes that postwar psychological discourse was marked by a view in which the adult was shaped by early childhood experience and by “the notion that parents hindered or guaranteed their children’s chances for happiness, depending on how they performed their duties” (Gleason 1997: 50). Overall, Rose identifies the “maximization” of the child’s mind as
one of the primary goals of twentieth century psychological thought and practice (Rose 1990). Goals for childhood set by experts and by the state could not be accomplished without enlisting families, or other social institutions that focused on the upbringing of children.

While the autonomous, private family came to play an important role in governing childhood, it did so only with the help of new experts on childhood (Rose 1990). Specialized expertise was developed and applied through the emerging disciplines of psychology and pediatrics, as well as in formal schooling. Expertise and practice in psychology, schooling, and pediatrics produced knowledge of normal development, in terms of both theories as well as measurements of actual children. “Developmentalism” became the dominant conceptual foundation for all psychological, educational, and medical knowledge of how the potential to develop unfolded from childhood into the adult stage of life (Baker 1999; Burman 2008; Castañeda 2002; James et al. 1998; Walkerdine 1993). Baker offers a view of developmentalism and its historical emergence that shows it was “not a singular movement but a way of reasoning about humanity” (Baker 1999: 798). In this style of thought, human abilities came to be understood as emerging through stages, with each development providing a step to the next. In this way, there was actually a significant synergy between developmentalism and ideas of social progress (Baker 1999). Within this style of thought, a range of more particular approaches to developmentalism also emerged, making neuro-developmentalism a recent but not fundamentally different version (see Castañeda 2002). The basic assumptions of developmentalism became so pervasive and foundational to western thought that its assumptions are now difficult to question. Baker, writing in the context of education research, notes that, “educators frequently spoke of the progress of the nation, mankind, the race, or the human race when arguing for a developmental orientation to children in schools. The notion of progress as inextricably bound to civilization, to science, and to the existence of formal educational institutions operated as a given. It was the idea of development as a form of progress that could then suggest who or what the detracts from progress might be” (Baker 1999: 816).

Expertise and governmental techniques also developed to manage the family in its childrearing role (see Donzelot 1997[1979]; Gleason 1999; Larsen 1999; Richardson 1989; Ursel 1992). Donzelot, writing in the French context, argues that the modern family became a target of the moralizing techniques of philanthropic welfare and the normalizing techniques of medicine (Donzelot 1997[1979]). For example, the welfare function, which was administered through philanthropic initiatives, tied assistance to the assessment of the “moral fault” that caused a
family’s poverty: thus “morality was systematically linked to the economic factor” (Donzelot 1997[1979]: 69). Donzelot also points out that progressive social techniques began to produce differences between families and act on the new categories of family in distinct ways. Particularly in those families receiving welfare aid, family life and childrearing were opened up for monitoring and for rehabilitation. Techniques (e.g., assessment tools, graphs and charts, and norms) likewise produced knowledge of difference between the classes: the working classes were found to raise their children in an outdated fashion and to provide environments that endangered children’s future prospects (Rose 1990). Government of the family was by no means a simple matter of control in this view. Read through the lens of biopower, the will, hopes, and fears of parents (particularly mothers) were mobilized by the new psychological knowledge of the normal child and family. The family would examine itself, learn how to conduct parenting and family life, and identify and act upon abnormality within the family domain (Rose 1990). For example, the early twentieth century parenting advice literature put out by the Canadian Federal Department of Health was a tool to promote large families, and encourage parenting practice that would benefit the physical and mental health of Canada’s youngest members (Comacchio 2010; Dodd 1991). In the case of families that could not or would not provide adequate care, the child rescue movement provided a means to protect the child body, the nation, and the race by removal of children and placement in alternate care arrangements (Swain and Hillel 2010). In these cases, the family was governed so that through the family the population’s children could be reared to healthy, productive adulthood. Following pediatric and public health advice on how to fulfill this childrearing function also supported the solidification of other reforms or social imperatives. Ursel argues, for example, that Canadian state intervention in family life was instrumental in solidifying a reproductive role for women (Ursel 1992).

In this section, I have considered the governmental knowledge and practice that emerged to manage children for the sake of the nation. In the next section, I turn my attention to normal and “deficient” trajectories of child development, and their relevance to social and economic welfare.

3.1.3 Exclusionary Effects

Just as childhood was differentiated into a set of developmental stages, there was also a proliferation of kinds of children, each requiring its own more specialized expertise and intervention. Developmentalism produced knowledge of stages of childhood, including fetus, infant, toddler, middle childhood, and youth. Many other kinds seem to stem from the array of
ways in which child development could go wrong. For example, there are “crack babies” (see Lyons and Rittner 1998; Mason 2000), “street children” (see Glauser 2003), “juvenile delinquents” (see also Hatch and Griffiths 1991; Matthews 2002; see Platt 2009[1969]; Trépanier 1991), “at risk” children or youth (see Bissant 2002; Brownlie 2001; Figerio et al. 2013; Lubeck and Garrett 1990; Nybell 2001), and the “feeble-minded” (see Brown 2005; Grekul et al. 2004; see also MacMurchy 1920). The social problems that led to the distinction of categories do not simply point to the child types that are unwanted by society. For example, the “gifted child” (see Borland 1997; O’Connor 2010) reflects the social problem of how best to educate children whose intellectual capacity exceeds their age norm. Viewed though a Foucauldian lens, these studies point to the proliferation of norms and deviations from the norm, all of which are distributed in the “domain of value and utility.” Consequently, members of society can be mobilized to govern themselves (and their children) so as to approximate norms, optimize life (sometimes trying to exceed norms), and normalize difference (for a consideration of this process in relation to Canadian children, see Gleason 1999).

Children actually face different lots when expert knowledge (particularly from the “psy” disciplines) and state regulation are applied to secure child mental, physical, and educational wellbeing (see Rose 1990; Sealander 2003). As Gleason notes, “Swedish reformer Ellen Key’s call for the twentieth century to be (as the title of her influential book proclaimed in 1900) ‘the century of the child,’ was heartily endorsed by reformers around the world, including those in North America. The ‘century of the child’ and the new beginnings it presaged, however, traded on the end of other, less desirable childhoods” (Gleason 2013: location 3097). In Canada, as elsewhere, defects of development, particularly intellectual deficits, were considered burdens and threats to society (Gleason 2013: location 3298; McDonagh 2001). Disabled children were not actually viewed as part of the “sacredness” and potential attributed to childhood more generally (Strong-Boag 2007; Clarke 2004). Instead, the very idea of normality—and knowledge of its nature and progression—created a space of abnormality, which contained all forms of childhood that exceeded the boundaries of normal (Gleason 2013; Strong-Boag 2007). Strong-Boag points out children who fell beyond the boundaries of normality were undesirable options in the adoption system (2007). Efforts were made to assess potential adoptees to reduce the chance of placing a child who would be a burden, ensuring instead that desirable adoptive families would receive a child who would “live a normal existence” and become “a self-supporting citizen” (Strong-Boag 2007: 418). In fact, MacMurchy—who served in the early twentieth century as
first chief of the federal Division of Child Welfare and as Ontario’s “Inspector of the Feeble-minded”—noted that it was better to lose a normal child to death than to raise a mentally deficient child (Clarke 2004; Gleason 1999; Strong-Boag 2007; Sutherland 2000[1978]). “By casting disability as a pathological failure of the body and of the ‘normal’ trajectory of growing up, medical and educational professionals made enduring equations between disability, abnormality, and a failed body. To different degrees, and with differing options for remediation, physical and intellectual disabilities were thought to threaten not only the health and happiness of individual children and their families, but also public health and a stable citizenry” (Gleason 2013: location 3146).

Children who were considered mentally “deficient” or “defective” were cast as cases of failed development, and were considered locked in a perpetually child-like state (see for example MacMurchy 1920). McDonagh notes that because the ideas of autonomy and reproduction were incongruent with childhood, the attribution of perpetual “child-like” status supported efforts to contain and sterilize individuals who failed to progress through the normal trajectory of cognitive development (McDonagh 2001). Just as placement exams used in the adoption system divided suitable from unsuitable adoptees, educational systems applied dividing practices to children. In particular, “compulsory public schooling was a sorting station for ‘normal’ and ‘abnormal’ children. ‘Normal’ youngsters progressed through their grades, ‘abnormal’ youngsters were, depending on their distance from ‘normality,’ either treated and improved or segregated into special classes or institutions” (Gleason 2013: location 3298). Schooling and remediation were not always considered feasible options for recuperating potential, however. Gradations of deficiency were articulated and used to segregate the most deficient in order to diminish moral danger and economic burden to society (Clarke 2004: 69-74). As Clarke notes, “[w]hile education for normal children aimed to provide the educational and social tools that they would need to operate successfully in society, education for the mentally deficient child was designed simply to stop him/her from becoming a burden to the state” (Clarke 2004: 74). In this way, educational practices divided the functions of nurturing potential in some children from the function of segregating children who were judged incapable of adequate, full development.

In this section, my aim has been to summarize literature on the relationship between modern childhood and the government of collective life. This literature shows that childhood became a distinct phase of life with modernity, opening it to expert knowledge and specialized management. “The child” was viewed as a national asset, and was mobilized to support various
projects for governing collective life—including nation building, colonization, and shaping populations to meet needs identified by state authorities. Increasingly, childhood came to be viewed in terms of normal stages of growth and development. An assemblage of expert and specialized knowledge, strategies, and techniques made child bodies and minds knowable in new ways. This knowledge was accompanied by techniques to optimize child growth and development. With more detailed knowledge, differentiation of childhood from adulthood was supplemented by a differentiation among categories or kinds of children. Dividing and sorting practices applied to children enabled an even more detailed knowledge and management of desirable and undesirable kinds of children, as well as the separation of the “defective” from the “normal.” In 20th century Canada, the goal was to develop self-sufficient adults was accompanied by the goal to diminish the social threat and economic burden of deficient trajectories of child development.

As the twentieth century gave way to the twenty-first, it was evident that childhood was being taken up in new ways in the context of both neoliberal political rationality and transformed understandings of human life. One prominent trend from the 1990s onward was an increased emphasis on placing child development at the center of neoliberal social policy, often with a focus on brain development in particular. In the next section, I review the literature that has analyzed this particular trend.

3.2 Child and Brain Development in Neoliberal Governmentality

The centrality of early childhood to contemporary political projects has been considered extensively in relation to neoliberal policy or in relation to the “social investment” welfare state (which some authors argue replaces neoliberalism). Although brain development has been central in most neoliberal policy over the past two decades (and thus in the policy examined in the literature reviewed here), this fact is rarely mentioned, let alone considered in depth (the

31 What some authors describe as a new, post-neoliberal “social investment” paradigm is, in fact, very closely aligned to the form of North American neoliberalism discussed by Foucault (2008; see also Chapter 2 of thesis). Following the discussion of neoliberalism and human capital in Chapter 2 of this thesis, I consider “social investment” a form of neoliberal, or advanced liberal, governmentality.

32 Of this literature, the contributions that are most relevant to this thesis include Bundy (2012); Cheeseman et al. (2014); Dobrowolsky (2002); Dobrowolsky and Jenson (2004); Elizabeth and Larner (2009); Fawcett et al. (2004); Featherstone et al. (2014); Gillies (2014); James and James (2001); Jenson (2004, 2008, 2009); Jenson and Saint-Martin (2006); Lister (2003, 2006); Mahon (2010); McKeen (2005, 2007, 2009); Millei (2011); Morris and Featherstone (2010); Olk (2009); Pacini-Ketchabaw (2006); Pacini-Ketchabaw et al. (2006); Stooke (2003); White (2004, 2012); Wiegers (2002, 2013); Vosko (2006).
primary exceptions are Cheeseman et al. 2014; Featherstone et al. 2013; Gillies 2014). More recently, some have examined the mobilization of neuroscience in neoliberal policy,\(^3\) primarily in the British context (Broer and Pickersgill 2015; Edwards et al. 2015; Lowe et al. 2015a, 2015b; Macvarish et al. 2014, 2015; Pitts-Taylor 2010; Wastell and White 2012).\(^4\) In this literature, the longer history of neoliberal attention to early childhood is not routinely considered, exclusionary processes receive minimal attention, and disability is not discussed. In this section, my purpose is to review this overall body of literature to determine what is known about how the idea of childhood, authoritative knowledge, and exclusionary processes manifest in the specific context of neoliberal policy that focuses on child or brain development. Before considering the literature in terms of those three topics, I characterize the literature in terms of its primary analytic and substantive foci.

In this section, I review this collective set of literature with reference to the three topics that are relevant to this thesis: 1) the truth discourses of child and brain development that have been mobilized in neoliberal policy projects, 2) the nature of expert knowledge, and 3) dividing practices and their exclusionary effects. This review is organized into four sections. In the first section, I provide a separate characterization of each of the two bodies of literature. In the subsequent three sections, I focus on truth discourses, expertise, and exclusion, drawing upon the full set of literature in each case.

### 3.2.1 Summary of the Literature

The first body of literature focuses on what is often called “early years” policy in Canada, the UK, and other European countries. Similar policy has also been analyzed in relation to the World Bank, the Organization for Economic Co-operation and Development (OECD), and in the global South. This literature primarily reflects concerns with analyzing political change, ideological conflicts, and the effects of policy projects on adults or on systems as a whole. It has been overwhelmingly characterized by analytic perspectives that assume competing ideologies, politically motivated actors, and knowledge that is intentionally and strategically deployed.

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\(^3\) There are additional studies of neuroscience in parenting advice that consider neoliberal influences, however, these are not focused on use in policy per se (Nadesan 2002; Thornton 2011; Wall 2004, 2010).

\(^4\) The two bodies of literature discussed here are not entirely separate. For example, Gillies is also co-author on a paper included in the second (neuro-) body of literature (Edwards et al. 2015), and the article by Featherstone and colleagues (Featherstone et al. 2013) from the “early years” literature is often cited by those included in the second (neuro-) body of literature in this chapter.
Foucauldian and other poststructuralist or postmodern analysis was applied in only four cases (Cheeseman et al. 2014; Einboden et al. 2013; Elizabeth and Larner 2009; and Pacini-Ketchabaw et al. 2006), three of which examine mechanisms of exclusion in some way (Einboden et al. 2013; Elizabeth and Larner 2009; Pacini-Ketchabaw et al. 2006). Some, but not all, of the literature has focused on child-focused effects (Cheeseman et al. 2014; Dobrowolsky 2002; Einboden et al. 2013; Fawcett et al. 2004; Hübenthal and Ifland 2011; James and James 2001; Lister 2006; Mahon 2010). Fewer still have considered exclusionary effects on children (Dobrowolsky 2002; Einboden et al. 2013; Fawcett et al. 2004; Lister 2006). Among these contributions, only Einboden and colleagues directly consider dividing practices and exclusionary effects in the Canadian policy context (Einboden et al. 2013). The majority of this literature is concerned with what the policy preoccupation with children means for adults (Bundy 2012; Dobrowolsky and Jenson 2004; Elizabeth and Larner 2009; Featherstone et al. 2013; Gillies 2014; Jenson 2004, 2008, 2009; Jenson and Saint-Martin 2006; Lister 2003; McKeen 2009; Morris and Featherstone 2010; Vosko 2006; Wiegers 2002, 2013). For purposes of this thesis, the portion of the literature that focuses on the effects on adults is useful in three ways. First, it is useful to the extent that it contributes insight into how policy framed early childhood in the Canadian case examined in this thesis (see especially Jenson 2004; Jenson-Saint 2006). Second, several authors provide useful coverage of the application of brain science in early years policy (see Cheeseman et al. 2014; Featherstone et al. 2013; and Gillies 2014). Finally, it is useful because it describes kinds of marginalization found to occur in policy focused on early childhood as “investment” (see Dobrowolsky and Jenson 2004; Elizabeth and Larner 2009; Vosko 2006; Wiegers 2002, 2013). For example, authors providing gendered readings of policy provide insight into how “early years” policy reproduced existing systematic inequalities and judged “worthiness” or “deservingness” for investment (see Elizabeth and Larner 2009; Jenson 2004; McKeen 2009; Morris and Featherstone 2010; Vosko 2006; Wiegers 2002, 2013).

The second body of literature reviewed in this section focuses on the use of neuroscientific evidence or explanations in early years policy in the British context (Broer and Pickersgill 2015; Edwards et al. 2015; Lowe et al. 2015a, 2015b; Macvarish et al. 2014, 2015; Wastell and White 2012). Although this is a small body of literature, it is emerging in conversation with a much broader and rich literature on the cultural and political relevance of increasingly prevalent neuro-styles of thought. There are several additional sources that provide critical insights into neuroscience in neo- or advanced liberalism, despite the fact that they do not address policy per
Pitts-Taylor (2010) provides a thorough consideration of the saturation of neoliberalism with neuroscientific thinking; Rose and Abi-Rached (2014) consider the ways in which a “neurobiological complex” is (and is not yet) coming to occupy in advanced liberalism the spaces once dominated by the psychological complex; and Papadopoulos (2011) describes the alignment between the brain-body neoliberal cultural-political conditions. Beyond these three sources, there are bodies of neuro-literature that bear mentioning, but will not be addressed more extensively in this thesis. The first body of literature is a set of objectivist-realist critiques of the misuse of “brain science” evidence in U.S. early childhood policymaking. Bruer (1999) serves as the key source in this critique (see also Macvarish et al. 2014 for a review of this literature). The second body of literature focuses on neuroscience and parenting (see especially Nadesan 2002; Thornton 2011; Wall 2004, 2010; see also Lupton 2011; Story 2003). The third is the growing body of literature theorizing the neuro-turn, with authors suggesting that it be considered (for example) an emergent neuroculture, a neuroscientific turn, a neuromolecular gaze, or a move toward brainhood. A set of recent book-length projects provides a representative entry into this literature (Littlefield and Johnson 2012; Ortega 2014; Pickersgill et al. 2012; Rose 2013; Rose and Abi-Rached 2014). A final, emergent body of literature is taking shape at the intersection of neuro- and critical disability studies (see especially Altermak 2014; Davidson and Orsini 2013).

The smaller set of sources that focus specifically on neuroscientific explanations in British early years policy can be summarized succinctly. Wastell and White conclude that neuroscience is being misapplied in British policymaking, leading to a medicalization of policy that is detrimental to moral debate on policy issues (Wastell and White 2012). In a series of co-authored articles, Lowe, Macvarish, and Lee argue that the neuro-explanations applied in policy are misapplications of the science that foster a reductionist view of the child, reducing the child to the brain. This, in turn, places elevated demands on mothers in the newest iteration of a long history of state interventions in parenting. The result for parents in general, and mothers in particular, is a demotion in status relative to “the child” and a concomitant increase in social marginalization (Lowe et al. 2015a, 2015b; Macvarish et al. 2014, 2015). Edwards and colleagues argue that the appropriation of neuroscientific evidence resonates with neoliberalism, but is primarily being deployed to justify existing political aims (Edwards et al. 2015). Broer and Pickersgill (2015) suggest these analyses largely leave the truth of neuroscience unquestioned. Based on an empirical study of textual sources, they conclude that neurosciences are indeed coming to occupy the spaces previously occupied by the psychological sciences. Further, through
an interpretive analysis of “optimization,” “self-governance,” and “vulnerability” as key themes, they build an argument that, “neuroscientific concepts and terms are enrolled in policy documents to legitimate or argue for particular societal practices, and hence configure and responsibilise citizens and social groups” (Broer and Pickersgill 2015: 59). Except for the suggestion that parents are marginalized (Macvarish et al. 2015), this literature does not directly consider exclusionary processes.

In this section, I have characterized the two main bodies of literature informing this section of the literature review. In the next section, I focus on truth discourses of child and brain development in neoliberal policy projects, drawing upon the full set of literature described above.

### 3.2.2 The Idea of Early Childhood in Neoliberal Policy Projects

Since the 1990s, policy in Canada, the UK and a range of other European countries has maintained a focus on “investing” in and optimizing human capital, and children occupy center stage in this effort (Dobrowolsky 2002; Jenson 2000, 2004, 2008, 2009; Jenson and Saint-Martin 2006; Lister 2003, 2006; Mahon 2010; Morel et al. 2012a). This trend, which is the focus of analysis in the first body of literature described above, is tied to an economic view of social policy in which, “[s]pending on measures for healthy child development could be considered a wise investment that would ensure a healthy, adaptable workforce necessary for the changing labour market and society of the future” (McKeen 2006: 870). Many authors discuss this trend as “neoliberal,” while others conclude that it is occurring in the context of a post-neoliberal “social investment state” (see especially work by Dobrowolsky, Jenson, Lister, and McKeen). Although there are clear variations in how the early years discourse has been taken up in different contexts (for consideration of variations, see especially Elizabeth and Larner 2009; Hübenthal and Ifland 2011; Mahon 2010; Olk 2009), the literature demonstrates that economization and an associated focus on future outcomes are common features. Finally, early childhood is about brain development (see especially Broer and Pickersgill 2015; Edwards et al. 2015; Gillies 2014; Lowe et al. 2015a, 2015b). In this section, I summarize the coverage in the literature of these three aspects of the representation of early childhood: economization as human capital, orientation toward future outcomes, and brain-based accounts of how outcomes are shaped and optimized.

First, neoliberal early years projects mobilize an economized view of child development in which children are considered human capital that can be developed (Dobrowolsky 2002;
Einboden et al. 2013; Hübenthal and Ifland 2011; Myles and Quadagno 2000; Penn 2002). While recent versions of neoliberal thought have developed a “soft spot” for childhood, as Myles and Quadagno remark, “[t]he soft spot comes less from benign spirits than from hard-headed economic considerations about the longer-term implications for economic performance of a large number of children growing up poorly educated or in poor health. Children matter because ‘human capital’ formation matters” (Myles and Quadagno 2000: 166). Economization saturates the idea of human capital—early childhood has potential value, existing value, and cost-reducing value—and is also reflected in program design. As human capital, children are targets for social investment, particularly in the early years, in order to develop potential value (Cheeseman et al. 2014; Elizabeth and Larner 2009; Mahon 2010; McKeen 2007, 2009). Human capital is also attributed existing value, which will be “depleted” if investments are underfunded (Einboden et al. 2014: 560; see also Broer and Pickersgill 2015). A third kind of value relates to an economic calculus of “financial gains and losses” (Broer and Pickersgill 2015: 56). For example, investments made during the early years produce cost savings by ensuring future citizens will place less demand on welfare and other social safety nets (Dobrowolsky 2002: 51; see also Broer and Pickersgill 2015). In addition to human capital having value, economization permeates some of the programming offered through early years policy, for example, through early childhood education designed to produce the desired work for the future (see Cheeseman et al. 2014). Overall, the literature examining the early childhood focus in neoliberal policy reflects a consistent economized view of early childhood as human capital that has value for society precisely because of the economic needs of society.

Second, policy is described in the literature as adopting a future-oriented view of children (Dobrowolsky 2002; Gillies 2014; James and James 2001; Jenson 2004, 2008; Jenson and Saint-Martin 2006; Lister 2003, 2006; Mahon 2010). The most extensive analyses of this future-orientated view are provided by Jenson, Saint-Martin, and Lister (Jenson 2004; Jenson and Saint-Martin 2003; Lister 2003, 2006), all of whom provide analyses from the vantage point of political science. For Jenson, in Canada the policy view of childhood is future-oriented because the underlying political paradigm is future-oriented. This implies that childhood carries a meaning or representation derived from the underlying paradigm. Jenson and Saint-Martin provide a detailed outline distinguishing the old “social rights citizenship regime” from the emergent, future-oriented, “social investment citizenship regime” (Jenson and Saint-Martin 2003: 89). According to their analysis, while the social rights regime grappled with class and
labor struggles and strove for “equality in the here-and-now,” the social investment regime strives for inclusion in the present and “equality of opportunity for future success” (Jenson and Saint-Martin 2003: 89). For children this means, among other things, that the state has an interest in addressing children’s present needs because of future outcomes that are consequential for securing equality in society as a whole (Jenson 2004: 176). Lister builds on Jenson’s work to argue that the primary constituent of British policymaking becomes the child as the “citizen-worker of the future” (Lister 2003: 433). For Lister, this future orientation creates an emphasis on “becoming” over “being,” which serves to displace attention from children even as policy pays increasing attention to the idea of childhood (Lister 2006). Other authors reiterate the critique of the future-orientated view of childhood, implying this is a commonly recognized shift in policy discourse.

Third, neuroscientific accounts of early brain development have also been a central component in policy discourse. Although several authors who analyze neoliberal early years policy in Canada mention the presence of the brain in policy discourse, detailed descriptions of this trend are only available in the literature for the British policy context (Edwards et al. 2015; Gillies 2014; Lowe et al. 2015a, 2015b). In an empirical study involving qualitative analysis of textual sources as well as key informant interviews, Edwards, Gillies and Horsley (Edwards et al. 2015) found that brain development was a frequent and prominent narrative in national policy discourse pertaining to early intervention. They describe policy documents that refer to “hard-wiring” of the brain in the “early years,” “sensitive windows,” and “windows of opportunity” for impacting brain wiring (Edwards et al. 2015: 174). Likewise, they find that “success or failure” for life is described as being determined early, which justifies societal investments and parental action (Edwards et al. 2015: 167-168). They cite a policy report, co-authored by Conservative and Labour Members of Parliament, that makes frequent reference to brain development and also utilizes a graphic representation of healthy and deprived child brains (drawn from the Perry Head Start study, Perry 2002) (Edwards et al. 2015: 171-172). These findings are very similar to description in Canadian policy documents (see Chapter 6 of this thesis). A minimal amount of additional detail is offered by Lowe and colleagues (Lowe et al. 2015a, 2015b), who find that pregnancy is positioned as a critical period in fetal brain development. In addition, abuse is described as having a permanent harmful impact on brain development in British policy documents (Lowe et al. 2015b). In a second report on the same study, Lowe and colleagues argue that the policy focus
on brain development in the early years conflates the child with the brain, with the effect of reducing personhood (Lowe et al. 2015b).

In a study of neuroscience in British social policy, Broer and Pickersgill (2015) found “optimization,” “self-governance,” and “vulnerability” to be the key themes attached to the brain. This study, which entailed an extensive documentary analysis of the use of neuroscience in British policy discourse between the years 2000 and 2013, provides a valuable contribution to understanding how child and brain development are situated as resources for governing population vitality. Documentary sources included in the study represented all areas of policy (e.g., educational, social, etc.) and addressed multiple age spans (i.e., early years, adolescence, adulthood and older adults). One important finding of this study is that there were some conflicting claims about the neuroscientific evidence used in policy, which means that the neuroscience discourse was not totalizing, but was problematized (Broer and Pickersgill 2015: 57). However, contestation over claims was based on the imperative to use “true” scientific evidence accurately and appropriately. Based on this finding, Broer and Pickersgill conclude that, “discourses of optimisation per se are not troubled [because] the scepticism professed focussed on the evidentiary support of current goals-not the goals per se” (Broer and Pickersgill 2015: 57).

Broer and Pickersgill use the themes of optimization, self-governance, and vulnerability to characterize the broader set of brain-related concepts, language, and imperatives found in their study. They use “optimization” to connote “a focus on the practicalities of maximising a broadly-understood human ‘potential’” (Broer and Pickersgill 2015: 56). Potential was said to be particularly located in early childhood, and the proper approach to the care and education of children entailed enabling their potential to develop. According to Broer and Pickersgill, policy documents frequently linked the ideas that, “‘human potential’ both exists and can be optimised through particular policy levers” (Broer and Pickersgill 2015: 57). “Vulnerability” resulted when potential was not optimized (Broer and Pickersgill 2015: 58). Importantly, vulnerability was produced rather than innate. Broer and Pickersgill point out that “children have brains that, if not cared for correctly, will result in adolescent and adult subjects who are confronted with more unfavourable life conditions than others and who are less able to cope with them (because of their improperly set cerebral foundations). Children are, in effect, vulnerable to not being resilient” (Broer and Pickersgill 2015: 58). “Whereas infants too are sometimes described as vulnerable, vulnerability is for them more often presented as a problem for the future that can be
mitigated against by early intervention” (Broer and Pickersgill 2015: 59). The policy documents reviewed by Broer and Pickersgill attributed “responsibility” for potential and vulnerability to adolescents and adults. Parents and taxpayers had responsibility for the potential and vulnerability of young children, while adolescents were responsible for their own vulnerability (Broer and Pickersgill 2015: 59).

The study by Broer and Pickersgill provides connects to the broader discussion of the potentiality attached to the modern child (see section 3.1.1). Potentiality is tied to childhood (Castañeda 2012; MacNaughton 2004; Nadesan 2010), but early brain development is one “site” for this child potential today (Castañeda 2002). It has also been noted that the brain on its own “is described as a potentiality: it is positioned in terms of a resource for the body/self that is both limitless and largely untapped… celebrated for its flexibility…and its adaptability” (Pitts-Taylor 2010: 641; see also Martin 2013). The potentiality of the child and the brain, and in fact of cells and genes themselves (Taussig et al. 2013), emerge as the view of human life itself is increasingly “molecularized” (Lemke 2011: 93; Lock 2015; Rose 2013; Rose and Abi-Rached 2014).

In this section, I have summarized three features of the child in neoliberal discourse. First, the child is economized as human capital. Second, attending to childhood today is important because it is associated with equality and outcomes for the future. Third, brain development was portrayed as the physical medium for shaping and optimizing outcomes. In the next section, I consider the development and application of authoritative knowledge for governing collective life through early childhood.

3.2.3 Expert and Authoritative Knowledge

Well-supported conclusions about the nature of authoritative knowledge cannot be drawn from the existing literature. However, some provisional conclusions can be drawn, which help clarify areas in which further research is needed. In the literature already reviewed in this section, authors argue that in the policy context, neuroscience is compelling (Wastell and White 2012; Stooke 2003), seems authoritative (Cheeseman 2014; Mavarish et al 2015), and is useful (Broer and Pickersgill 2015; Edwards et al. 2015; Lowe et al. 2015a, 2015b; Pitts-Taylor 2010; Stooke 2003). Most of the Canadian literature reviewed here did not highlight the use of neuroscientific explanations (in policy discourse that made heavy use of it), which suggests they may have viewed this knowledge as “true,” and therefore not pertinent to social-political analyses (see
Dobrowolsky and Jenson 2004; Jenson 2004, 2008, 2009; Jenson and Saint-Martin 2006; Lister 2003; McKeen 2005, 2007, 2009; Vosko 2006; White 2004; Wiegers 2002, 2013). In their study of British policy, Broer and Pickersgill (2015) express agreement with Rose and Abi-Rached (2014), who suggest that neuroscience has taken steps toward occupying spaces once occupied by the psychological complex. According to Rose and Abi-Rached, neuroscience “gained the characteristics of expertise” over the second half of the twentieth century (Rose and Abi-Rached 2014: 6). By 1999, neuroscientific experts had produced knowledge of our neurologically based receptivity to our environments:

[T]he brain now appeared as an organ that was open to environmental inputs at the level of the molecular processes of the genome, shaping its neural architecture and its functional organization, with consequences that might flow down the generations. The implications were clear: those who were concerned about the future of our children, and the conduct and welfare of the adults they would become, needed to recognize, and to govern, these processes of shaping and reshaping our plastic brains…. Despite many doubts about the functional properties of the neurons produced by neurogenesis, progressive thinkers rapidly latched on to the idea to underpin their belief in the importance of environment. And it was not long before many researchers began to argue that their work led to practical conclusions for policy. (Rose and Abi-Rached 2014: 12)

In a separate article, Abi-Rached and Rose (2010) have also provided a detailed argument supporting the conclusion that a “neuromolecular” style of thought has emerged, with the 1960s providing a key point of change in this emergence. Probably because they were analyzing this emergence rather than recent trends, they do not mention the apparent proliferation of the neuromolecular style of thought in policymaking from the 1990s onward. To date, there do not appear to be detailed analyses of how the neuromolecular style of thought came to serve as authoritative knowledge in the policy context, and by extension, there is little detailed analysis of how it operates as authoritative knowledge and to what effect within the context of early years policy. Einboden and colleagues, who conducted a documentary study of early years policy in British Columbia, appear to provide the most detailed attempt to cover this ground (Einboden et al. 2013). Einboden and colleagues report analyzing three primary “text samples,” some of which comprise a collection of texts (for example, their use of the “Early Development Instrument” presumably included a set of documents associated with the instrument and its implementation), and quote from a larger set of related policy and program documents (Einboden et al. 2013: 551-552). However, they draw several conclusions about the development of brain-centered
knowledge in that do not hold up when a broader set of documentary sources is taken into account, indicating that their findings cannot support broader conclusions with respect to the emergence and operation of a neuromolecular style of authoritative knowledge in the Canadian policy context.\(^{35}\) The limitations of this study have methodological implications. Specifically, robust conclusions about authoritative accounts of early childhood in policy discourse would be better supported through a broader sample of documents and by adopting strategies to test conclusions.

Despite these limitations in the current literature, important contributions have been made regarding how neuromolecular and neoliberal styles of thought are being taken up together (Papadopoulos 2011; Pitts-Taylor 2010; Rose and Abi-Rached 2014).\(^{36}\) Papadopoulos (2011) provides an analysis of the brain-body across styles of thought that have characterized modern history, and delineates the specificity of the brain-body in the neoliberal “cultural-political conditions” (Papadopoulos 2011: 448). As he illustrates in his “Diagram of different approaches to the brain-body” (see Figure 3), these neoliberal conditions are associated—far beyond policy discourses—with assuming “neural circuits” and “organism-environment assemblages” as the “biological substratum” of the brain-body (Papadopoulos 2011: 448). While many of the political scientists who have analyzed early years policy have assumed that individual political actors and nationally specific political and economic goals have driven the shape of early years policy, it is clear (not only from Papadopoulos’ analysis, but also, it should be noted, through the convergence of early years discourse across countries and across two decades as demonstrated through the literature reviewed above) that policy discourse is expressing a set of truth claims

\(^{35}\) For example, they assume that socio-economic data was not being associated with Early Development Instrument (EDI) scores, and they speculate that publication of community resource maps may have begun in response to limitations of the EDI to account for socio-economic status (Einboden et al. 2013: 557). However, community asset mapping and documentation of socio-economic status by neighborhood were part of the standard protocol of the Understanding the Early Years (UEY) Initiative (the original initiative for EDI use), which was running pilot sites in 1999 (see Appendix C for a list of all UEY communities by year of participation. In a second example, in the documents they reviewed, they notice a difference between the descriptions of the EDI in publications from 1997-1999 compared to a plenary address by Hertzman in 2010 (Einboden et al. 2013: 555). However, a review of a larger set of available references to the EDI between 1997-2011 reveals that the range of meanings identified by Einboden and colleagues can be found throughout. The difference may also be an artifact of which communities of meaning authored each of the references they cite. For example, they cite one Government of Canada publication, a peer-reviewed article by a researcher involved in implementing the EDI, and a plenary address by one of the proponents of the neuro-logical model. See Chapter 5 and 6 of this thesis for a more detailed discussion of the introduction and spread of the neuro-logical model in Canadian national policy discourse.

\(^{36}\) There is enough clarity to this conjoint vision that it might be only a little tongue in cheek to dub this a “neuro-liberal” style of thought.
that extend well beyond the policy context, though policy settings—like any other—are implicated in the production of this truth.

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<td>Chomskyan liberal egalitarianism; civil rights; identity politics</td>
<td>alter-globalization movements; situated knowledges; postmodern perspectivism; reverse engineering</td>
<td>alter-ontological activism and the commoning of matter</td>
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Figure 3. Papadopoulos' Diagram of Different Approaches to the Brain-Body

This literature supports the conclusion that brain-based early years policy was caught up in a broader bio-cultural-political style of thought, however, none of these studies or theoretical accounts clarifies how neuroscientific explanations became embedded in authoritative political knowledge, nor to what effect.

In this section, I have reviewed the literature to ascertain what is known about the development and application of authoritative neuroscientific explanations for governing collective life through early childhood. Although little is available through the early years literature itself, a set of key literature addressing neuroscience and neoliberalism more generally provides a clear sense of co-saturation of these styles of thought across cultural and political contexts. In the next section, I review the literature on child and brain development in neoliberal governmentality with respect to dividing practices and exclusionary effects.

3.2.4 Neoliberal Exclusionary Effects

Much of the literature reviewed in this section suggests that early childhood in neoliberal policy (re)produces inequality and has exclusionary effects for many adults and for some children (see
for example Bundy 2012; Dobrowolsky 2002; Einboden et al. 2013; Lister 2006; Wiegers 2002, 2013). The literature reflects three primary drivers for exclusionary effects: the redirection of attention and resources, the erasure of difference, and the production of difference. The literature paints a picture of social investment policy in which all children are more worthy of policy attention and state resources than adults, yet some children are more worthy than others (see Dobrowolsky and Lister 2005; Fawcett et al. 2004; Jenson 2000, 2004; Lister 2006; Morris and Featherstone 2010; Wiegers 2013). Differentiation between children is based on stage of life (with some stages being more worthy than others) as well as perceived membership in socially and physically descriptive categories (see for example Fawcett et al. 2004). Attention and resources are not directed toward the children (or adults) who are not considered worthy of investment (Lister 2006). Lister suggests that the categories of gypsy children, asylum seekers, and children with disabilities were not considered good investments (Lister 2006: 324-326). The literature suggests that withdrawal of attention and resources from citizens who are not the main target for investment is fundamental to the logic of neoliberal investing-in-children projects. I think the literature suggest the merits of two research questions. First, what forms of child life (e.g., which children, which stages of childhood) are considered worthy of attention and resources, and how are they incorporated in policy projects? Second, what forms of life are not included in this, and with what material and phenomenological effects? The majority of the studies included in this section of the literature review are considering the first question in some way. The second question has received less sustained attention, despite the fact that concern over some children being excluded is raised.

The literature makes it clear that the redirection of attention and resources is based in the economized view of child-life as human capital. Fawcett and colleagues clarify the logic of investment further; explaining that in the British context spending is actually directed toward the human “capacity to change” (Fawcett et al. 2004: 41). “People’s security… comes from their capacity to change; thus the emphasis on investing in human capital and lifelong learning as the surest form of security…. This builds on a discourse from economics which has promoted constructions of people, crucially children, as wealth that can be augmented by investment” (Fawcett et al. 2004: 41). This means that the logic making for social investment is not that specific people are worthy or not worthy, but instead that investment should be made in potential for learning and human capital development, wherever that is found. They explain that:
For state spending to be effective and worthwhile it must not simply be consumed in the present but must reap rewards in the future. From this perspective, social welfare spending may legitimately be direct to objectives such as supporting and educating children (because they hold the promise of the future), promoting health and healthy populations (because they pay off in future lower healthcare costs), reducing the probability of future costs of school failure and crime by young people, and fostering employability. Spending for current needs, by contrast, needs to be cautious and targeted and is motivated not just by reasons of social justice but also by a wish to reduce the threat to social cohesion posed by those who are marginalized. (Fawcett et al. 2004: 5)

In this reading, social investment places a higher priority on attaching human capital to the market than to providing the distributive function of social welfare (Fawcett et al. 2004: 40). The provision of a minimal social assistance, however, is acceptable insofar as it protects social cohesion. Ultimately, the economized view of childhood attached worthiness to human capital potential, or what Foucault called “capital-ability” (Foucault 2008: 225; see also Chapter 2 of this thesis).

A second driver for exclusionary effects discussed by the literature is the erasure of difference. A number of authors support the position that viewing children as future workers and citizens displaces attention to children’s agency, needs, rights, and welfare in the present (see Dobrowolsky and Lister 2005; Fawcett et al. 2004; Hübenthal and Ifland 2011; James and James 2001; Lister 2003; McKeen 2005; and Wiegers 2002). Moreover, Hübenthal and Ifland (2011) argue present needs matter only to the extent that they support human capital development. Analyzing German childcare policy, they conclude that, “[i]n this, mainly economically determined, ideology, child-specific needs are only considered insofar as they can prove their efficient contribution to human capital formation and hence to the formation of an ‘effective citizen’ who, in future, can be integrated as easily as possible into the labour market” (Hübenthal and Ifland 2011:122). In another reflection of the erasure of difference, Dobrowolsky asserts that, “[b]ecause the figure of the child [in the UK’s social investment state] is unified, homogeneous, undifferentiated, there is little talk about race, ethnicity, gender, class, disability. Children become a single, essentialized category” (Dobrowolsky 2002: 67).

The third driver of exclusionary effects is the production of difference. Einboden and colleagues studied how early years program discourse and techniques produce different kinds of child, based on worth (Einboden et al. 2014). Specifically, they conducted a critical discourse analysis
of documentary sources from British Columbia’s Human Early Learning Partnership (HELP). The sources analyzed include the Early Development Instrument (EDI) and supporting materials (which is also discussed in this thesis since it was developed and implemented as part the federal Understanding the Early Years Initiative under the NCA; see Chapters 5 and 6). Their analysis concludes that children measured by the EDI are constructed as “resource” or as “waste” (Einboden et al. 2014: 562).\(^\text{37}\) In developing their analysis of “waste,” Einboden and colleagues point to the widespread use of the EDI to produce measures of child “vulnerability” at the population level (Einboden et al. 2013). They attach the idea of waste to children who fall into the lowest 10\(^{\text{th}}\) percentile on the EDI, which is the cut off for vulnerability for this instrument. Although this analysis provides a useful reminder that developmental measures both create and measure deviation from norms, there are three primary limitations to this study, from the standpoint of the current thesis. First, the notion of waste, drawn from Bauman’s work, refers (in Bauman’s words) to modernity’s human “rejects,” “garbage,” and “refuse” (Bauman 2004: 12), which seems to refer to a profound abandonment or otherness. Connecting this idea to the distinction between profound othering and hierarchies of value and inequality (see Chapter 2 of this thesis; see also Seidman 2013), it seems more analytically useful to reserve “waste” for processes of othering and abandonment. Second, if children “at-risk” are “waste,” it is unclear why normalization would be applied, since normalization implies an effort to realign to the norm. Third, the dichotomy of “resource” and “waste” does not seem to provide a means of accounting for the difference between at-risk children who are not targeted for normalization at all. For instance, are there any children who are excluded from being measured? Are there communities in British Columbia in which the EDI and associated programmatic materials are not used at all? Although Einboden attempt to determine how early years policy and programming divides children based on judgments of worth, their study design limits the accuracy of their findings, and their use of Bauman’s concept of “waste” may misapprehend exclusionary effects on “vulnerable” children while missing the opportunity to locate less visible, but possibly more detrimental, effects on other children.

Three additional studies provide insight into how early years policy (re)produces racialized and other forms of cultural bias (Elizabeth and Larner 2009; McKeen 2007; Pacini-Ketchabaw et al.\(^\text{37}\) See section 3.2.2 of this thesis for a discussion of the limitations of this study. Here, I consider only the merits of their interpretation of “resource” and “waste,” which is not impacted by the methodological limitations described above.
two of these further demonstrate that the erasure and production of difference work together to produce exclusionary effects (Elizabeth and Larner 2009; Pacini-Ketchabaw et al. 2006). Elizabeth and Larner (2009) show that deservingness of mothers has been deeply racialized in New Zealand. Specifically, they argue that children and mothers of European descent were more likely to be the recipients of “investment,” while children and women of Pacific descent were targeted for intervention (Elizabeth and Larner 2009). Elizabeth and Larner use this finding to suggest that racialization is likely at play in social investment elsewhere, as well, and should be examined for its role shaping different manifestations of social investment policy (Elizabeth and Larner 2009: 153). Pacini-Ketchabaw, White, and Armstrong de Almeida (2006) describe the racialized nature of Canadian early years policy. In British Columbia, early childhood policy “informally” creates three categories of children: an early childhood development (ECD) category that is meant to include ‘all children’; Aboriginal ECD; and “a more loosely defined system that deals with ‘multicultural’ communities (immigrants, refugees, ‘visible minorities’)” (Pacini-Ketchabaw et al. 2006: 103). According to Pacini-Ketchabaw and colleagues, “the system creates a dominant, ideal early childhood development discourse for ‘all’ children. Within this dominant discourse of early childhood, children are addressed from a population health model that emphasizes universality with variations that ‘deviate’ from the norm…. The inherent assumption and logic of the population health model creates racialized minorities as ‘others’” (Pacini-Ketchabaw et al. 2006: 104-105). It is worth noting here that this study makes clear that exclusionary effects derive both from discourses shaped at the national level (i.e., the ‘all children’ ECD policy, which derived from Federal/Provincial/Territorial agreements and federal transfers), and at the local level (which may mean provincial, municipal, or other local), indicating that study of dominant policy discourses is a necessary but not sufficient research strategy for exposing exclusionary effects. For example, McKeen found that local programs implemented under the umbrella of the NCA drew on an “individualized/casework” (2007: 268), which is not evident in the national discourse itself. According to McKeen, these approaches are:

grounded in, and prescribe, a set of norms and ideals that reflect specific cultural norms, namely mainstream, white, middle-class views and aspirations with respect to family and parenting. When applied to individual cases, poor and racial or ethnic minority families are disproportionately identified as the problem, and described in program materials as the hard to reach or as facing challenges, with the possible implication that they are seen as bad parents. Thus, the groups named most often by local programs as priority populations are single mothers, teen
mothers, First Nations mothers, families of ethnic or racial minorities, and so on. Indeed, in the Nova Scotia context, parenting resource centres are often located in the impoverished communities or adjacent to marginalized populations, such as Aboriginal communities. (McKeen 2007: 162-163)

If existing racialized differences are re-inscribed through early years policy, it is likely that existing negative ontologies of disability are likewise re-inscribed (see Campbell 2005; see also Chapter 1 section 1.1.2 of this thesis). In a theoretical consideration of disabled children in the British social investment state, Fawcett, Featherstone, and Goddard point out that,

New Labour have not targeted disabled children and young people for intervention to the same extent that other groups can be seen to have been targeted. One reason for this could be that disabled children do not fit into the social investment state as either ‘threats’ to civil order or ‘opportunities’ for promoting a more market-friendly society. (Fawcett et al. 2004: 123)

Despite recognition that children with disabilities may be disadvantaged in this policy environment (Dobrowolsky 2002; Einboden et al. 2013; Fawcett et al. 2004; Lister 2006; McKeen 2009), there are no robust studies of this issue. Studies that have considered exclusionary effects in other areas support the conclusion that policy knowledge itself is playing a role in structuring these effects through the redirection of attention and resources, the erasure of difference, and the (re)production of difference (see especially Dobrowolsky 2002; Dobrowolsky and Jenson 2004; Elizabeth and Larner 2009; Lister 2006; McKeen 2009; Pacini-Ketchabaw et al. 2006).

3.3 Conclusion

An extensive literature documents the significant role of the modern child, who was born in the era of biopower, in biopolitical projects across time and place (see Ariés 1962; Bloch et al. 2003; Gleason 2010; McGillivray 1997; Mitchell 1991; Nadesan 2010; Rose 1985, 1990; Sutherland 2000[1978]). Optimizing the biopolitical value of childhood was tied to the production and use of expert knowledge about normality, deviation from normality, and techniques for acting upon differences in socially and politically meaningful ways (Donzelot 1997[1979]; Foucault 1980a; Hultqvist and Dahlberg 2001; Rose 1985, 1990). Dividing practices not only helped sort children into different care and education situations based on their physical and mental fitness, but were tied to maintaining the fitness of the population as a whole (see Clarke 2004; Dodd 1991; Gleason 2013; McDonagh 2001; Rutty 2010; Strong-Boag 2007; Sutherland 2000[1978]). In its contemporary
form, the governmental value of childhood is tied to the potentiality, malleability, and indeterminacy attributed to the figure of the child (Castañeda 2002), making it one among multiple domains of life in which potentiality is now sought (Taussig et al. 2013; see also Martin 2013). In neoliberal cultural-political conditions, brain development itself has become a key site in which potentiality is sought (Castañeda 2002; Pitts-Taylor 2010). Although brain development has been central in most early childhood policy in neoliberal governmentality over the past two decades, studies of this trend have only emerged recently (see Broer and Pickergsill 2015; Cheeseman et al. 2014; Edwards et al. 2015; Featherstone et al. 2013; Gillies 2014; Lowe et al. 2015a, 2015b; Macvarish et al. 2014, 2015). Broader studies show that the brain is a key “biological substratum” (Papadopoulos 2011: 448) in neoliberal governmentality (see Rose and Abi-Rached 2014; Pitts-Taylor 2010). In this context, the logic of investment in early child development is to invest in potential for learning, change, and human capital development, wherever this is to be found (see Fawcett et al. 2004; Foucault 2008).

Studies of early years policy more broadly provide insight into how early childhood is being mobilized to achieve goals related to population vitality and productivity. This literature demonstrates exclusionary effects for many adults and some children (see for example Dobrowolsky 2002; Dobrowolsky and Jenson 2004; Einboden et al. 2013; Elizabeth and Larner 2009; Fawcett et al. 2004; Lister 2006; McKeen 2005, 2007; Pacini-Ketchabaw et al. 2006; Wiegers 2002, 2013). Although the likelihood of disability exclusion has been mentioned in this literature (see Dobrowolsky 2002; Fawcett 2004; Lister 2006; McKeen 2009), this issue has not received robust study. Research is needed to clarify how the focus on brain-based potential affects the exclusion/inclusion of children with disabilities related to brain development. While the Canadian literature reviewed in this chapter mentions the presence of brain development in Canada’s early years policy and National Children’s Agenda (NCA), the only studies of the use of neuroscience in early years policy have been conducted in the British context (Edwards et al. 2015; Gillies 2014; Lowe et al. 2015a, 2015b). The lack of careful documentation of the use of neuroscientific explanations in the Canadian policy context places limits on the analysis of exclusionary processes (see Einboden et al. 2013).

This literature review supports the relevance of the current study, which aims to understand how framing national investments in children as a matter of brain development impacts the incorporation of children whose brain development is considered impaired. The study undertaken in this thesis makes a relevant contribution by: 1) extending the literature on brain-based truth
discourses in neoliberal policymaking through an examination of the Canadian context; 2) helping address a gap in knowledge about the possible exclusionary effects on children with disabilities; and 3) providing an analysis of the incorporation of neuro-developmental differences into policy accounts of normal neuro-developmental potential.

In the next chapter, I describe my methodological approach and study design.
Chapter 4: Methodology and Study Design

4 Introduction

In this chapter, I describe the methods used to address my four overarching research questions. These questions, as listed in Chapter 1, are:

1. What truth discourse of child development was mobilized in the NCA?
2. How was child development attributed value for governing population?
3. How were developmental differences incorporated in this truth discourse?
4. How, if at all, was this knowledge embedded in or operationalized through NCA policies and programs?

I considered “anthropology of policy” to be the most appropriate methodological approach to answer these questions, because it is a critical interpretive approach to policy research that is designed for a biopolitical analytic framework (Shore and Wright 2011; Shore et al. 2011; Wedel and Feldman 2005; Yanow 2011). In this methodological approach, policy is analyzed in terms of both truth discourses and technical instruments for governing populations. My study was designed to follow (see Marcus 1995) two focal issues through the time period under study: 1) the conceptualization of child development as a truth discourse; and 2) the contestation of this conceptualization on the basis of “disability” inclusion/exclusion. Data were drawn from documentary sources reflecting development and implementation of the National Children’s Agenda (NCA) between 1994 and 2011.

This chapter is organized into three primary sections. In the first, I describe the anthropology of policy methodological approach. In the second section, I describe the study design and methods, including selection of source materials, data management, and advantages and limitations of the study design. In the third section, I describe my strategies for analysis, interpretation, and rigor.

4.1 Methodological Approach

The analytics of biopolitics offers an orientation toward research and analysis, but does not prescribe a particular set of methods. Biopolitical analyses have been applied to good effect through the divergent methodological toolkits of ethnographic fieldwork (Inda 2014), cultural
studies (Nadesan 2010), political science (Altermark 2014), social science (Casper and Moore 2009), and critical disability studies (Tremain 2005). My methodological approach takes its point of departure from the anthropological tradition. Although anthropology is often equated with participant observation methods applied in remote field sites, Inda explains the heart of anthropology differently, noting that, “…to be anthropological in orientation means that at stake in the analysis of modernity is the value and form of the anthropos or human being” (Inda 2005: 1). Anthropological analyses of policy and governmental practice are becoming increasingly common, and reflect different theoretical inclinations and regional foci (Boddy 2007; Dubois 2009; Feldman 2008; Shore and Wright 1997; Shore et al. 2011; Wedel and Feldman 2005). The historical study of colonial policy and practice in regions of interest to anthropologists may have been an early inspiration for anthropological analysis of policy. This drew anthropological attention not only to colonial governments’ policy projects and colonial programs, but also to research using archives, documents, and other policy artifacts (see for example Arnold 1993; Boddy 2007, 2011; Comaroff 1985; Mitchell 1991). A more direct influence, however, was likely the effort to retool anthropology to study the contemporary postcolonial world and the impacts of globalization, which led to rethinking anthropological theory, methods, and definitions of what may constitute the “field” (see Amit 2000; Ferguson and Gupta 2002; Gupta 1997; Ong and Collier 2004; Rabinow 1996). In the anthropological context, studies of biopolitics and neoliberal governmentality can be understood as one approach to analyzing modern power (see especially Collier and Ong 2003; Inda 2005; Lock and Scheper-Hughes 2010; Ong and Collier 2004; Rabinow 1996; Rabinow et al. 2008; Rabinow and Rose 2006; Sharma and Gupta 2006; Shore et al. 2011). Methodologically, such studies reflect the range of broader developments in anthropology. That is, they may be contemporary or historical in focus; they may mobilize participation, observation, dialogue, mapping, or reading text; they may gather evidence from documents, material artifacts, images, or participant words and actions; and they may use single, multiple, or non-local “field” sites. The anthropology of policy is analytically similar to other anthropological studies of biopolitics and neoliberal governmentality, except that “policy worlds” become both the “field” site and object of analysis (Shore and Wright 2011; Wedel and Feldman 2005). Anthropology of policy also shares an affinity with interpretive policy analysis (see Yanow 1996; Yanow 2000), from which it borrows some of its research methods and techniques.
By adopting policy worlds as the field site, Shore and Wright intend to focus on the “social and political space articulated through relations of power and systems of governance” (Shore and Wright 1997: 14). This recognizes that policies are produced in, and applied through, multiple sites as well as through a multitude of documents and practices. In this view, documents, practices, and discourses are on equal footing with space (or multiple spaces) in comprising the “field.” This contrasts with a spatial metaphor in which field sites contain people, documents, practice, and other objects to be analyzed. By foregoing the spatial metaphor, Shore and Wright seek “a method for analyzing connections between levels and forms of social process and action, and exploring how those processes work in different sites—local, national and global.... [a method for] tracing ways in which power creates webs and relations between actors, institutions and discourses across time and space” (Shore and Wright 1997: 14). One practical implication of this is that the boundaries (or their absence) of the policy world only become clear by following the flows of people, places, knowledge, and things that constitute the policy world.

Anthropology of policy considers all instruments and techniques mobilized by state authorities to be “policy instruments” that help create the subjects and objects they act upon (Shore and Wright 2011: 1). This co-constitution is precisely what Foucault means to point to through his notion of “governmentality.” On this point, Lemke explains,

The semantic linking of governing (‘gouverner’) and modes of thought (‘mentalité’) indicates that it is not possible to study the technologies of power without an analysis of the political rationality underpinning them. In other words, there are two sides to governmentality (at certain points Foucault also speaks of ‘the art of government’). On the one hand, the term pinpoints a specific form of representation; government defines a discursive field in which exercising power is ‘rationalized’. This occurs, among other things, by the delineation of concepts, the specification of objects and borders, the provision of arguments and justifications, etc. In this manner, government enables a problem to be addressed and offers certain strategies for solving/handling the problem. On the other hand, it also structures specific forms of intervention. For a political rationality is not pure, neutral knowledge which simply ‘re-presents’ the governing reality; instead, it itself constitutes the intellectual processing of the reality which political technologies can then tackle. This is understood to include agencies, procedures, institutions, legal forms, etc., that are intended to enable us to govern the objects and subjects of a political rationality. (Lemke 2001: 191, emphasis in original)
Policy instruments (whether these are vision statements, rules and regulations, measurement tools, or other techniques) concentrate in governments, international organizations, schools, hospitals, departments, and agencies. However, governmentality is understood (as discussed in Chapter 2) to permeate all domains of life. In this context, policy is one “fundamental ‘organizing principle’ of society” (Shore and Wright 2010: 2) alongside others such as ‘state,’ “childhood,” “population,” and “science.”

Conducting a critical interpretive policy study as an anthropology of policy assumes several underlying commitments and orientations. Feldman argues that a commitment to principles of “contingency” and “displacement” are fundamental to an anthropological critical interpretive analysis of policy (Feldman 2011: 33). Contingency entails the insight that social reality is produced, and therefore could have been (and could be) produced differently. Policy, like all human activity, is understood to be socially produced by a range of human actors through pragmatic and meaningful interactions (whether interpersonal or at a distance) between those most affected by policy as well as those in positions of authority and advantage (Shore et al. 2011; see also Lock and Kaufert 1998; Scheper-Hughes 1992). Displacement points to the benefits of insight generated “through removal from familiar cultural logics” (Feldman 2011: 33). Feldman views fieldwork in unfamiliar cultural sites as an anthropological strategy to achieve displacement, however, he argues that displacement is more critical than unfamiliar cultural sites per se. When pursuing research in familiar cultural contexts, maintaining the commitment to displacement means a commitment to problematizing and situating taken-for-granted discourses (Feldman 2011: 46), a practice that is well established in medical anthropology in western contexts (see especially Ginsburg and Rapp 2013; Lock 2010, 2013, 2015; Martin 1991, 1994, 1997, 2001, 2007; Rapp 2010; Rapp and Ginsburg 2012; Scheper-Hughes 2000).

In the anthropology of policy, specific choices regarding methods and analytic strategies flow from the needs of the study itself (Shore and Wright 2011: 11-14), with three guiding principles worth noting. First, the circulation of policy discourses and instruments makes most ‘policy worlds’ too large to study as a whole. “The challenge is to select small sites that open windows onto larger processes of political transformation” (Shore and Wright 2011: 12). These “sites” are not necessarily geographic, particularly when the policy studied is non-local (Feldman 2011). A particularly useful method for creating such a site is to “track” the flow of an idea, instrument, policy document, or program through time and place (see Shore and Wright 1997; Shore et al.
To be analytically useful, the site(s) selected must facilitate answering the questions: “What does policy mean in this context? What work does it do? Whose interests does it promote? What are its social effects? And how does the concept of policy relate to other concepts, norms or institutions within a particular society?” (Shore and Wright 2011: 8). Yanow’s blueprint for interpretive policy analysis provides a useful, flexible guide to inform methods and materials selection when tracking an idea, instrument, policy, or program:

- Identify the artifacts (language, objects, acts) that are significant carriers of meaning for a given policy issue, as perceived by policy-relevant actors and interpretive communities
- Identify communities of meaning/interpretation/speech/practice that are relevant to the policy issue under analysis
- Identify the “discourses”: the specific meanings being communicated through specific artifacts and their entailments (in thought, speech, and act)
- Identify the points of conflict and their conceptual sources (affective, cognitive, and/or moral) that reflect different interpretations by different communities (Yanow 2000: 22, emphasis added)

Second, in an anthropology of policy, suitable methods make it possible to see how “policy creates links between agents, institutions, technologies and discourses and brings all these diverse elements into alignment” (Shore and Wright 2011: 11). It is therefore necessary that the window selected enable the study of linkages and conflicts. Third, methods must be flexible to change and responsive to the research problem. “One feature of anthropological research more generally is that a research ‘problem’ often only emerges late on in the study…. it is only when the existing empirical and theoretical literature about the issue fails to provide explanations for what is happening empirically that the anthropologist finds the ‘problem’ on which to focus the rest of the fieldwork and analysis” (Wright 2011: 29). Schwartz-Shea and Yanow describe this as an “abductive” analytic approach (Schwartz-Shea and Yanow 2012: 26-34).

4.2 Study Design and Methods

The purpose of this study was to examine how framing national investments in children as a matter of brain development affects incorporation of children whose brain development is considered impaired. Following the anthropology of policy methodology described above, I identified the policy world for this study as the ‘social and political space articulated through relations of power and systems of governance’ surrounding development of the National
Children’s Agenda (NCA). The “field” for this study was conceptualized as relating to national policymaking and discourse as reflected in publicly available documentary sources that were in circulation between 1994 and 2011. The field therefore primarily included federal, intergovernmental (i.e., federal/provincial/territorial), provincial, and local community sources as these intersected with the national policy discourse. The field was also delimited by time, with boundary years identified based on initial mapping of the policy field under study. Specifically, these years are inclusive of the earliest mentions of brain development that I could find as well as the final year of a national program utilizing the neuro-logical model. The study described in this thesis “followed” (see Marcus 1995) two focal issues through this field: 1) the conceptualization of child development truth discourse; and 2) the contestation of this conceptualization on the basis of “disability” inclusion/exclusion.

My study is the result of identifying the research “problem” in the process of conducting the research. I initially conceptualized the work as a study of how the mobilization of a discourse of brain-based investments in child development in Canadian policy delineated aspects of childhood as more or less valuable for the government of the population. The final research problem emerged when I discovered that children with disabilities appeared to be missing while developmental differences in general were in fact pervasive in the NCA (see Prologue and Chapter 1). Thus, the problem became one of identifying and making sense of disability’s location in the landscape of inclusion/exclusion, presence/absence, and visibility/invisibility in the NCA. Here, I describe the design and methods used to study problem.

4.2.1 Selection of Documentary Sources

In this section, I describe the types of source material used in this study, criteria for selection of materials, and selection procedures.

4.2.1.1 Types of Documentary Source Material

All “artifacts” included in this study were publicly available documentary sources. By documentary sources, I mean relevant textual as well as visual sources. Documentary sources were conceptualized as being simultaneously socially produced discursive and material objects; containers of a mix of factual information, factually incorrect information (i.e., errors rather than purposeful misrepresentation), authors’ interpretations, representation, and meaning (including both cultural assumptions and more purposeful constructions); and artifacts that migrate and take
on a life of their own, beyond the intentions of their authors (see Hull 2012; McCulloch 2004; Prior 2003; Scott 1990; Shore and Wright 2011). All sources used in this study were “open” access and “official,” meaning produced with awareness of open availability in the public domain (see Scott 1990).38 Specifically, all sources were either open-archival or open-published. This description follows Scott’s definition of open-archival as documents “lodged in a place of storage that is open to all,” and open-published as printed for public circulation (Scott 1990: 14).39 Sources included officially authored documents from: federal agencies; provincial agencies; intergovernmental (federal/provincial/territorial) committees and councils; House of Commons; think tanks; community organizations; and researchers. Documentary sources included three types based on intended use: publication; transcription; and programmatic. By publication, I mean documentary sources that were produced, likely with a process for official review and approval, for public dissemination. I include books, articles, reports, news releases, newsletters, booklets, pamphlets, newspaper articles, and website content in this category. By transcription, I mean that a written record of an aural source was produced. It is useful to distinguish publications from transcriptions because the latter do not (necessarily) involve review and approval before being made publicly available. Programmatic documents are materials produced to guide implementation of policy programs, and included measurement tools (e.g., the Early Development Instrument), program guides (e.g., instruction manual for administering measurement tools); and similar materials meant to structure and guide programmatic implementation.

4.2.1.2 Criteria for Source Selection

I selected documentary sources based on tracing two focal issues: 1) the conceptualization of child development as a truth discourse; and 2) the contestation of this conceptualization on the basis of “disability” inclusion/exclusion. I attempted to collect all available documentary sources that reflected any of these three issues for inclusion in master library of documentary sources.40 I purposefully sought documentary sources to provide information about communities of meaning, events and timelines, and points of conflict or differentiation (see Yanow 2000: 22). Selection of

38 Scott described four levels of access: “closed,” “restricted,” “open-archival,” “open-published” (Scott 1990: 14).
39 For the purposes of this study, I consider online content to fall into this category.
40 Based on limitations of documentary study discussed in the literature review (see section 3.2.3 and footnote 33), I purposefully aimed to establish an extensive collection of documentary sources to enable me to test my conclusions.
documentary sources using selection procedures described (see section 4.2.1.4 below) led to an extensive digital collection of over 700 documents. This overestimates the unique source documents, because webpages were retrieved and stored by page (i.e., a single “website” could yield dozens of “documents”). A smaller collection of the most relevant sources was maintained as a separate source library of 159 digitized documentary sources and 3 print books (see Appendix D for a list of these sources; see section 4.2.2 for a discussion of data management). These sources represented the neuro-logical model (n=39), disability community perspective (n=11), federal departments and agencies (n=34), and House of Commons committee evidence (n=127; each committee meeting is counted as a separate documentary source). A sub-set of these sources was used heavily in the analysis. This sub-set is listed in the timeline presented in Appendix B. The process of selecting key sources is further described in the discussion of analysis and interpretation in section 4.3.

4.2.1.3 Exemplars

Over the course of my research, it became apparent that a small set of key documents served as “exemplars.” By exemplar, I mean the document provided focused and extensive coverage of one of the two focal issues traced through this study (see section 4.2.1.2 for a list of these foci). Five exemplars identified at the outset of the study provided the basis for articulating the research questions: *A National Children’s Agenda: Developing a Shared Vision* (Federal/Provincial/Territorial Council of Ministers on Social Policy Renewal 1999a), *A National Children’s Agenda: Measuring Child Well-Being and Monitoring Progress* (Federal/Provincial/Territorial Council of Ministers on Social Policy Renewal 1999b), the *Early Years Study: Reversing the Real Brain Drain* (McCain and Mustard 1999), “All Children Means All Children” (Canadian Association for Community Living 2000), and *Agenda for Action: Policy Directions for Children with Disabilities and Families* (Roeher Institute 2000). The first two were produced to communicate the draft NCA to the public and to solicit input. The third document was referenced as the evidence base for information on child development. The fourth document was the first documentation (a website) of the disability response to the NCA’s conceptual model of child development, and the fifth provided a more detailed summary of family feedback in the context of the disability response.

Exemplars are disproportionately represented in the analysis, because of this focused attention to key issues. Additional materials that could fit this definition but were not used extensively for
this analysis are not included in this list (see for example McCain et al. 2007, 2011). The main exemplars discussed in this thesis are listed below, organized by the focus they exemplify:

**Neuro-logical Model**

- *Early Years Study: Reversing the Real Brain Drain* (McCain and Mustard 1999)
- *Early Years Study: Three Years Later* (McCain and Mustard 2002)
- *Developmental Health and the Wealth of Nations: Social, Biological, and Educational Dynamics* (Keating and Hertzman 1999)

**NCA Use of Neuro-logical Model**

- *A National Children’s Agenda: Developing a Shared Vision* (Federal/Provincial/Territorial Council of Ministers on Social Policy Renewal 1999a)
- *A National Children’s Agenda: Measuring Child Well-Being and Monitoring Progress* (Federal/Provincial/Territorial Council of Ministers on Social Policy Renewal 1999b)

**Disability Response**

- “All Children Means All Children” (Canadian Association for Community Living 2000)
- *Agenda for Action: Policy Directions for Children with Disabilities and Families Vulnerable Children* (Roeher Institute 2000)

**Conflicting Interpretations**


### 4.2.1.4 Selection Procedures

Source selection proceeded through an ongoing process of source review, new source identification, source retrieval, confirmation of inclusion or exclusion, and source storage in digital or print collection. This process began by reviewing the first five exemplars (see above).
This process was repeated throughout the duration of data analysis, with several stages of heavy focus on source identification and retrieval followed by later stages of occasional identification of new documentary sources. The procedures followed are described below.

First, identified sources were reviewed in detail to identify key terms, themes, “authors,” and the names of other documentary sources that might be relevant. Identified key terms were used to conduct online searches to identify new sources. Initial key terms and authors included “early childhood development,” “child development,” “early years,” “brain,” “brain wiring,” “neurosculpting,” “early development,” “national children’s agenda,” “early years study,” “investment,” “critical period,” “window of opportunity,” “population health,” “social union,” “Canadian Association for Community Living,” “Ontario Children’s Secretariat,” and “Federal/Provincial/Territorial Council for Social Policy Renewal.” Retrieved sources were reviewed to identify additional key terms, themes, authors, and sources.

Second, a snowballing strategy was used to collect new sources cited in reviewed sources, and websites for authoring agencies were visited to locate lists of agency publications, when available. Publication lists that provided titles, and sometimes descriptions, were reviewed to identify possibly relevant documentary sources. Searches were conducted using the identified key terms and authors on several search tools: the online search tool for Government of Canada Publication; DEVONagent Pro (DEVONtechnologies, LLC Version 3.6 2014), a meta search engine software product for the Mac OS X operating system; and the WorldCat library catalogue.

Third, key websites were reviewed for published content, which was included as documentary source material. PDF copies of relevant website pages were created and stored. Most websites were accessed through the Internet Archive (also known as “WayBack Machine”, https://www.archive.org), a non-profit organization that has archived web pages since the late 1990s. Archived web pages are captured on repeated dates, meaning that a dynamic archive exists for some webpages. For key websites, this tool was used to review content change over time. However, only one date was selected for pagination and storage. The primary website retrieved in the initial stage of document retrieval was the Social Union Initiative website (www.socialunion.gc.ca), which shared information about the NCA and work on other aspects of social union reform. This website also included links to relevant publications, a summary of public response to the NCA, news releases, Speeches from the Throne, and other websites.
Access to multiple archive dates for the Social Union Initiative website on the Internet Archive proved useful, because it provided a way to track changes in language and conceptual organization of policy priorities and programs.\footnote{For example, pages stored on Internet Archive shows that “Early Childhood Development” was added to the site in 2000, followed by “Early Learning and Childcare” in 2003. Information on SUFA was added to the site in 1999, and the NCB was moved to its own site in 2002. In addition, information on NCA policy programs was more frequently expanded than was information on disability policy.}

Fourth, transcriptions of relevant House of Commons (HOC) committee evidence were reviewed for relevant content, which was included as documentary source material (see Appendix E for a page excerpted from my table of inclusion or exclusion for meetings considered). Relevant content was retrieved and stored in digital PDF format. Because the Sub-committee on Children and Youth at Risk (SCYR) was constituted to advise Human Resources Development Canada (HRDC) on the NCA, the full set of available evidence was retrieved and stored. For other committees, I reviewed the online listing of order of business for selected committees between 1994-2004 (http://www.parl.gc.ca/CommitteeBusiness/CommitteeList.aspx?Language=E).

Additional committees and Sub-committees reviewed included the House of Commons Standing Committee on Health (HEAL), House of Commons Standing Committee on Human Resources and the Status of Persons with Disabilities (HRPD), Sub-Committee on the Status of Persons with Disabilities (SSPD). I maintained a spreadsheet listing all meeting dates and the “order of the day” listing for each committee for Parliamentary sessions between 1994-2004. “Order of the day” listings were reviewed to identify meetings to be excluded from further review. For meetings that were not excluded and for which transcriptions of evidence were publicly available, I accessed the transcript online and used the web browser search function to search for key terms. Meetings that did not include relevant content were marked for exclusion based on content. Meetings that did include relevant content were retrieved and stored as PDF documents.

During subsequent review and analysis of documentary sources, I did identify additional relevant HOC committee evidence that was not identified through the strategy described here.
4.2.2 Data Management

Documentary sources were managed by: 1) maintaining a digital and print library collection of all retrieved documentary sources, and 2) maintaining a separate digital and print collection of a smaller set of key documents.

Digital copies were retrieved or created for documentary sources whenever possible. When electronic formats were not available, materials were scanned to PDF. Optical Character Recognition was used to ensure all PDF documents had searchable text. Lengthy sources only available in print were kept in print format. When extended library loan was not available, I made an effort to locate and purchase used print copies. Very few sources were not available in any format. A digital library collection was maintained using DEVONthink Pro for the Mac OS X operating system. DEVONthink Pro Office (DEVONtechnologies, LLC Version 2.8 2014), a database software product, was chosen for management of a master library collection of relevant sources because it offers a rich set of document storage and retrieval tools. First, it is designed to manage very large electronic collections, including multiple file formats. Second, it permits clipping of webpages to PDF through a web browser plug in, and stores these directly to the database. It maintains a live URL link to clipped web content, and stores URL and date accessed information. Third, it enables fixed and dynamic source organization. It permits folder creation, has powerful within-document search functions, automatically indexes words in document with word frequency count, and offers a unique “see also” feature that uses an algorithm to identify closely related documents within the same library. Effective use of a large digital documentary source collection would not have been possible without a robust database capable of dynamic search and retrieval at rapid speed.

A separate digital and print library collection was maintained for the most relevant sources, which included 159 digital and 3 print sources (see Appendix D for a list of these sources). Digital sources were uploaded for search and retrieval into the qualitative data analysis software product NVivo 10 for the Windows operating system (QSR International Pty Ltd. Version 10, 2014). Copies of these materials were retained in the master library collection in DEVONthink Pro Office, resulting in one complete master collection of documentary sources, and one more focused key source collection. Memos, concept maps, and timelines that were generated in the process of analyzing documentary sources became additional data sources, which were maintained in the NVivo research file alongside primary documentary sources. Documentary
sources were accessed through an iterative and repeating process of review, search, and retrieval. This process is described in detail in section 4.3.

4.2.3 Advantages and Limitations of the Study Design

There are several advantages and limitations to the study design. Two important limitations derive from the fact that the study relies on documentary sources alone. First, I was not able to take into account the ways in which nationally formulated policy discourse and programs are implemented in local settings. As discussed in the literature review (see Chapter 3 section 3.2.4), existing literature shows that the national Canadian early years policy is mediated through cultural and practice-based factors during implementation at the provincial or local program level, leading to racialization and individualization of blame that are not evident in the national discourse itself (see especially Pacini-Ketchabaw et al. 2006; McKeen 2007). Ethnographically detailed studies of policy implementation are needed in relation to early years policy and children with disabilities and their families. Second, only some perspectives and conflicts are recorded in the documentary record, limiting the scope of the perspectives that I considered. Although the inclusion of House of Commons (HOC) committee evidence introduced dialogic text and conflicting interpretations of the policy under study, very few community voices were represented in this context. In the materials reviewed, the disability response was primarily represented by disability community leadership who had been invited by the HOC committee. I did not find an example of an invited parent speaker in the HOC committee evidence. Community member perspectives were only represented by political authorities, disability organizations, or published reports. Therefore, the voices of children with disabilities and their families are not represented by this study design. While documentary and archival research are reasonable components of anthropology of policy, ethnographic study is needed to trace the effects of the neuro-logical model to children with disabilities and their families.

Despite these limitations, there are also several advantages to this study design. First, this study is well suited to tracing the neuro-logical model through its points of entry and origin, enabling an analysis of how authoritative translations of neuroscience become attached to policy projects. This is a key component in addressing the critical commitment of anthropology of policy, and the critical stance of a Foucauldian perspective—both of which aim to open new possibilities for action by exposing the contingency of “truth claims.” Second, this study fills a gap in the literature related to the role of neuroscientific knowledge in Canadian early years policy. Despite
an extensive critical literature on Canadian early years policy (see Chapter 3 section 3.2), this literature largely omits consideration of brain-based explanations of early childhood, or includes errors of fact when the neuro-logical model has been considered (see Chapter 3, footnote 34). The anthropology of policy approach to analysis of documentary sources provides a means to address this omission in the literature on Canadian early years policy.

4.3 Analysis and Interpretation

I follow the analytic approach to biopolitics outlined in Chapter 2. In particular, I focus on analyzing the “truth discourses” about the ‘vital’ character of living human beings” (Rabinow and Rose 2006: 197) that “provide cognitive and normative maps that open up biopolitical spaces and define both subjects and objects of intervention” (Lemke 2011: 119-120); and the strategies of power that act upon, govern, and technically manage collective life in the name of the population. In this analysis, the first of these maps specifically onto analyses of the truth discourses pertaining to child development. For strategies of power, I focus my analysis on the strategies of investment and incorporation. In the analysis that I provide, I stay fairly close to the data in describing the truth discourse of child development and the strategy of investment, while “incorporation” is a concept I introduce to capture the ways in which developmental differences are brought into relationship with normal child development.

Within the frame of an analytics of biopolitics, I approached the analytic process using Schwartz-Shea and Yanow’s (2012) treatment of abductive inquiry, and Maxwell’s (2012) description of analyzing through the three tasks of memo writing, categorizing, and connecting. First, Schwartz-Shea and Yanow’s description of abductive inquiry is an excellent explication of an approach that is typical (but not always explicit) in anthropological inquiry. In contrast to “deducing the particular from the universal” or “inducing the universal from the particular” (Schwartz-Shea and Yanow 2012: 26-27), abduction is an iterative-recursive process of sense-making that relies on the forms of displacement and contingency that are central to anthropology of policy (or more precisely, abduction relies on the type of puzzle, surprise, or tension and sense of situatedness that emerge from displacement and contingency). Schwartz-Shea and Yanow (2012: 33-35) suggest that abductive inquiry should entail several features, which are pertinent features for this analysis because of this close affinity between abduction and anthropology of policy:
• Awareness of an unanticipated contradiction, surprise, or tension, which is inherently a contradiction of assumptions
• Reflexivity about the assumptions that enabled the contradiction, surprise, or tension to occur
• Iterative relationship between data and theory that is generative of new concepts and explanations of patterns

These features were integrated into the entire analysis, which was carried out as a repeated process of circling between source review, analysis, building and testing explanations in a non-linear fashion. Maxwell offers a more structured description of three concrete analytic strategies: “(1) memos, (2) categorizing strategies (such as coding and thematic analysis), and (3) connecting strategies” meant to support contextual analysis (Maxwell 2012: 105). I utilized these strategies as part of an abductive approach to inquiry throughout the research process.

In the remainder of this section, I describe my analytic strategies and the basis for rigor and trustworthiness in this study.

4.3.1 Analytic Strategies

I wrote memos throughout the process of reviewing and analyzing all documentary sources. I used memos to capture my evolving thinking and emergent ideas and questions. I distinguished between three types of memos: reflexive, substantive, and theoretical. Reflexive memos provided a way to reflect on my own positionality in relation to the research topic, my reactions to what I was reading, and my values and commitments. Substantive memos documented dates, names, events, and other relevant “facts” I encountered during review of sources (e.g., begin and end dates of Understanding the Early Years Initiative). Theoretical memos captured my evolving analysis, including ideas about how the data might relate to the literature or to new theoretical constructs. Memos were uploaded into NVivo. In addition to textual memos, I created timelines of events, key publications, and mentions of brain development in publications and HOC committee evidence (see Appendices A and B for timelines). Timelines were maintained as separate files, outside of NVivo.

Documentary sources were analyzed at one of three levels of depth based on the collection analyzed. The three collections were: 1) full collection of all documentary sources; 2) key documentary sources (see Appendix D), and 3) exemplars (see section 4.2.1.3). Analysis at each level occurred at various points through the analytic process. First, all documentary sources
collected were reviewed to identify information to inform timelines, further documentary sources, themes, and pivotal terms or phrases in the policy discourse (e.g., “investment,” “neurosculpting,” “window of opportunity,” and “vulnerability”). Second, the first level of analysis led to the identification of a smaller set of key documentary sources (n=162), which I also analyzed at an additional, deeper level (see Appendix D for a list of these key documentary sources). Specifically, I used the NVivo query functions to run searches for key terms and phrases. I mapped codes to identify related clusters. I reviewed a series of queries to establish different perspectives on the data. For example, I used a set of key terms (e.g., “neurosculpting,” “brain wiring,” and “brain development”), to create a “brain” query; I then reviewed the collected sources to understand how reference to the brain was being used. I reviewed query results at the “narrow spread” setting to see the immediate context of phrasing, and at broader spread settings to understand context. I also used the query function to search for key authorities (e.g., Keating), publications (e.g., Early Years Study), policy programs (e.g., Understanding the Early Years Initiative); and instruments (e.g., Early Development Instrument). Third, both levels of analysis contributed to identifying exemplar documents (see section 4.2.1.3 for a description and list of exemplars). Exemplars were reviewed in depth, and I applied several cycles of coding to this set. Specifically, I used Saldaña’s (2013) description of types of coding and coded for: descriptive topics, themes, conflict (i.e., conflict between communities of meaning), values (e.g., goals that policy should pursue), and theoretical constructs (e.g., modes of incorporation, or developmental difference).

I used several “connecting strategies” (Maxell 2012: 105) to support contextual analysis. One strategy was in-depth review of exemplars, which placed key terms into the context of broader narratives. A second strategy was to review sources in meaningful clusters. For example, I reviewed publications across time from a single author/agency, and publications across multiple authors/agencies from a single year. A third strategy was to trace key terms or political actors across time and sources. For example, I read through “brain” query results based on document publication date to build a sense of the “story” of the brain-focused narrative over time. Fourth, I developed timelines and maps to help build a sense of context that was not immediately obvious from the text. I used mapping extensively, and mapped such things as relationships among the stakeholders, events, policy constructs, and themes.
4.3.2  Rigor and Trustworthiness

I adopted several strategies to build rigor. The first three relate to collection and management of documentary sources and fact checking. First, several aspects of how I approached collecting documentary sources supported a rigorous study. Based on insights about limitations in the existing Canadian literature (see literature review in Chapter 3), I purposefully sought source material that extended beyond the ‘policy world’ I had conceptualized. For example, I sought materials from a timeframe that seemed to extend prior to the beginning of the brain-based conceptualization of child development in the NCA, and in so doing, I discovered early mentions of this model. I likewise attempted to extend beyond timeframe on the latter end, but I could not locate a period in which the model was not mentioned in national policy discourse. In another example, I purposefully sought materials from provinces and communities. By doing so, I discovered that the model had extended into many communities. Extending my search for sources helped guard against erroneous conclusions derived from too small a sample. To ensure that the an in-depth study could be carried out, I followed this extension with a narrowing in scope, delimited in scope by the first mentions of the brain-based model, the final year of the national Understanding the Early Years (UEY) Initiative (which used the model; see Chapter 5), and sources that touched national policy (i.e., the community sources included were reactions to national policy, advisory reports to inform national policy, or materials developed as part of the national UEY initiative). Second, I maintained a large, easily navigated, digital collection of as many sources as possible. This provided a material “field” that I could navigate in multiple ways. I spent time exploring this field, providing ample opportunity to encounter information that contradicted my conclusions at each stage of analysis. Third, I sought additional sources of information to verify matters of fact, such as events, timelines, and people involved.

I utilized additional strategies to “test” and challenge my understanding. I found two strategies from Becker (1998) particularly useful for this purpose. First, Becker recommends exerting concerted effort to find cases that do not fit initial assumptions and interpretation made in the research (Becker 1998: 85). Specifically, he recommends applying strategies to maximize the chances that you will encounter them, and to intentionally “identify the case that is likely to upset your thinking and look for it” (Becker 1998: 85-86). This may entail imagining a disconfirming case, and seeking it out. An example of how I utilized this strategy is that when disability appeared missing in the NCA, I examined the possibility that it was included. As a result, I found many instances of developmental difference. This seemed to show that disability
was included. I then examined the possibility that disability was not included, even in the presence of developmental difference. In the context of the abductive approach to analysis, this questioning occurred in the iterative process of reexamining my documentary sources, seeking new sources, and examining the theoretical literature. Thus when I asked whether disability was missing in the context of the pervasive presence of developmental difference, I sought theoretical literature addressing the presence and absence of disability in multiple explicit and implicit ways. I also adopted a second strategy from Becker (1998). Specifically, based on the recognition that processes of making categories and collections entail purposefully leaving some things out (Becker 1998: 112; see also Bowker and Star 1999), he suggests asking questions about what is left out, how inclusion and exclusion are implicated in producing meaningful categories, and to what effect. Becker summarizes:

Put terms into the full set of relations they imply (as ‘tall’ implies ‘short’ and ‘gifted’ implies ‘not gifted’). Then look at the way that set of relations is now organized and has been organized at other times and in other places (as in understanding that not knowing arithmetic has a different meaning and different consequences than it did 150 years ago). And, finally, see how things came to be organized the way they are here and now, and what connections to other social arrangements sustain that set of relations. (Becker 1998: 138)

Together, these strategies supported the rigor of my study and helped to ensure conclusions that are more robust.

4.4 Conclusion

In this chapter, I have described my application of an “anthropology of policy” approach (Shore and Wright 2011; Shore et al. 2011; Wedel and Feldman 2005; Yanow 2011). Anthropology of policy was adopted because it is an appropriate critical interpretive approach to analyzing policy through a biopolitical lens. The two aspects of biopolitics examined in this study were truth discourses and strategies of power (this study did not examine the third aspect of biopolitics: subjectification). I specifically used documentary sources that reflected national policymaking and discourse related to the NCA between 1994 and 2011. Documentary source selection was based on tracing two focal issues through the documentary sources: 1) the conceptualization of child development; and 2) contestation of that conceptualization on the basis of disability inclusion/exclusion. Three collections of documentary sources were maintained: a master collection of all relevant documentary sources (over 700); a sub-set collection of key
documentary sources (n=162), and a further sub-set of exemplars (n=11). Analysis was conceptualized as abductive inquiry, which invites attention to contradictions of research assumptions, reflexivity, and an iterative process of data analysis and theorizing. This was accomplished through activities of writing memos, categorizing data through queries and coding, and exploring context and connections through in-depth review of exemplars, producing timelines, and mapping multiple aspects of the data. This study design has two important limits and two key advantages. First, my study is not able to take into account local implementation. Further study is needed to understand how national discourse is (re)produced or contested in local contexts. Second, only some perspectives and conflicts are recorded in the documentary record, limiting the scope of the perspectives considered. However, this study is well suited to tracing the neuro-logical model through its points of entry and origin, enabling an analysis of how authoritative translations of neuroscience become attached to policy projects. In addition, this study fills an identified gap in the literature related to the role of neuroscientific knowledge in Canadian early years policy.

In the next chapter, I turn my attention to how neuro-logical knowledge entered and became embedded in or operationalized through NCA-related policymaking.

Although the connection between developmental health and economic prosperity appears at first glance to be less direct, our argument is that these effects are equally strong.... [W]e lack detailed analyses that establish the economic value of well-crafted investments in human development. But the role of human and intellectual capital in the innovation dynamic as it plays out in the current situation is likely to be large, perhaps even dominant. (Keating and Hertzman 1999: 339-340)

5 Introduction

While the National Children’s Agenda (NCA) seemed to be about investing in children, it drew upon a rationale for societal attention to childhood that was about investing in the capacity of the brain to develop toward optimal potential. This development, in turn, was framed as critical to optimizing human population development and ensuring global economic competitiveness. This derived from what I will describe as a “neuro-logical” explanatory model, which located the solution to social, economic, and governance challenges through a truth discourse derived from a set of “brain” and “neuro” sciences. This development was inextricably connected to the emergence of expertise in calibrating neuroscientific “truths” to socio-economic realities and policy priorities. Although the linkage of childhood to population health and future economic productivity has a long tradition in western societies, emphasis on early brain development is recent. In Canada, 1999 marked a pivotal point after which an account of the child-population-economy linkage that focused on brain development became a common referent in policy discourse across sites and levels of government. Before the February 1999 signing of the Social Union Framework Agreement (SUFA), it is unlikely the general public would have noticed the emerging relevance of early brain development to social policy. Even the second reading of the Decade of the Brain Act before the House of Commons in 1994 had not occasioned mention of early brain development’s importance to society. By contrast, the claim that early brain development was critical for the vitality of both population and economy was readily found in policy documents and online content from 1999 forward. Between 1994 and 1998, instances of
the linkage among the developing brain, population, and economy began to show up in various policy content: first in relation to population health, and soon after in relation to human resources development. In Appendix A, I have mapped the emergence and spread of the neuro-logical explanatory model in national policy discourse on a timeline, which also serves to illustrate its emergence in health policy followed by a spread into human resources and then cross-sector child policy (see Appendix A). In the context of SUFA and its prioritization of a children’s agenda, brain development took on a new centrality, and a flurry of policy publications in 1999 described healthy early development as a critical ingredient for solving social and economic problems. By tracing the emergence and spread of neuroscientific explanations through national policy, this chapter establishes the contingency and political nature of the neuro-logical model, and by extension of the vision of normal, normalizable, and non-normalizable child development that it cast as scientific truth.

In this chapter, my purpose is to describe how early brain development emerged as a national policy solution. The body of this chapter is organized into two sections. In the first, I describe the policy context for the emergence and spread of the neuro-logical model. In the second section, I trace the emergence, spread, and proliferation of the model as a truth discourse in the national policy context across three time periods: 1994-1998, 1999, and 2000-2011. I conclude that the neuro-logical model was able to proliferate and establish far-reaching connections as an integral part of addressing economic challenges and informing social policy reform. In particular, the promise of a neuro-scientific solution was brought into health policy, human resources development, and finally cross-sector child policy. This chapter provides a foundation for my analyses of the neuro-logical model in Chapter 6, and how it incorporated developmental differences in Chapter 7.

5.1 Background

In this section, I summarize the Canadian policy context when the neuro-logical account was emerging. I first discuss the general national policy context in the 1990s. I then provide an overview of how national goals for child development were being framed in relation to health and human resources policy in the first half of that decade, in order to differentiate the emerging model from the views that characterized earlier policy. Next, I describe the development of a body of neuro-logical expertise among a network of politically well-connected researchers.
5.1.1 Policy Context

The new linkage of brain development to the vitality of the population and economy emerged in the context of shifting approaches to both population health and social policy. In the early 1990s, the health of Canadian populations was viewed through a health promotion lens informed by the Ottawa Charter for Health Promotion (World Health Organization 1986), which brought the social determinants of health to the forefront. Nonetheless, the health promotion model was rooted in an individual lifestyle approach to health (Orsini 2007). At the national policy level, Achieving Health for All (Health and Welfare Canada 1986) reflected this model, and provided a vision for applying a health promotion framework to the new concerns dominating public health: chronic health conditions, mental health, and the reality that health services provision did nothing to address the poor health outcomes associated with socio-economic disparities. A series of publications outlining a population health approach began to alter the discussion on the health of the Canadian population beginning in 1990 (see Evans and Stoddart 1994; Evans et al. 1994). Developed by health economists and epidemiologists, this approach to population health was soon adopted to guide Canadian health policy at the federal level (Orsini 2007). O’Neill and colleagues suggest that, “the key elements of the population health approach…. gained a lot of currency among politicians because they were presented in a kind of economic language by high-profile, politically well-connected scholars of major Canadian universities, whereas health promotion was couched in a social language less popular at that time and promoted by lower profile scholars and practitioners” (O’Neil et al. 2012: 12). Raphael and Bryant also explain that population health “in Canada has come to signify the Canadian Institute for Advanced Research’s (CIAR) analysis of how system-level variables influence the health of populations” (Raphael and Bryant 2002: 189), giving it the same intellectual roots as a neuro-logical model that would be explicated soon after. In addition to framing health in economic terms, the CIAR’s population health approach has been critiqued for under-theorizing power and society, lacking a basis in identified values, reducing health to the absence of illness through the privileging of biomedical and scientific discourse, and decontextualizing the experience of health (Poland et al. 1998; Raphael and Bryant 2002). Raphael and Bryant suggest that this population health approach introduced “a top-down emphasis on expert knowledge” prioritizing application of research to population over a theoretically informed approach to health, society, and equity (Raphael and Bryant 2002: 194).
Beyond the shifts in health policy, the economic and social policy environment in the final decade of the 20th century was shaped by experience of economic recession in the early 1990s and the perception of imminent social and economic changes as the 21st century neared. The emerging knowledge-based economy, rapid technological advancement, and the pace of social and economic change were cited as making policy reform imperative (McLean and Dinsdale 2000). In the meantime, responding to crises related to fiscal pressures and escalating program costs would require modernization of the “network of social policies and programs” that emerged in the post-war years, which came to be referred to as the “social union” (McLean and Dinsdale 2000).42 While such reform was about setting the financial house in order, it was intertwined with implementing a mode of governance that was appropriate to the new global realities. Canada needed to adopt “flexibility” and “adaptability.” Premiers expressed agreement that “a more rational distribution of roles and responsibilities is necessary: to deliver quality government services at an affordable price; to demonstrate that the Canadian federal system is flexible; and, to allow Canada’s economy to compete in a globally interdependent economy” (Annual Premiers' Conference 1997). Reforming social policy and shifting the mode of governance would require negotiating agreements across federal, provincial, and territorial governments. These efforts occurred in tandem through social union renewal.

The Federal/Provincial/Territorial (FPT) Council of Ministers on Social Policy Renewal was formed in 1996 for working across governments to rethink “the design and delivery of social programs.”43 It served as the guiding body for what was referred to as the “social union initiative.” The FPT Council was co-chaired by the new Minister of Human Resources Development, Pierre Pettigrew, and Alberta Minister of Family and Social Services, Stockwell Day, and included representation from all provinces and territories (with Quebec participating in an observer role). The social safety net for persons with disabilities was identified as a policy priority for the social union initiative from the outset, and the Council confirmed its commitment to early childhood development in 1997. In 1998, an initiative website available to the public listed and detailed three more specific policy issues within these two priorities: the “National Child Benefit” (NCB), the “National Children’s Agenda,” and “Benefits and Services for

42 For considerations specific to the Social Union initiative, see Fortin et al. (2003) and Phillips and Orsini (2002).
Persons with Disabilities.”

On February 4, 1999 federal, provincial, and territorial governments (except Quebec) signed onto the Social Union Framework Agreement (SUFA), which the Council described as an “umbrella under which governments will concentrate their efforts to renew and modernize Canadian social policy” in a collaborative, coordinated manner. In 2000, First Ministers signed the Early Childhood Development Agreement (ECDA), which joined the NCB as a component of the NCA. Jenson and Mahon highlight the fact that governance reform was a fundamental aspect of these efforts, noting that, “a central feature of the National Child Benefit…, as well as the Social Union Framework Agreement…, is a commitment to the decentralization of policy choices. The NCB represents an agreement among federal, provincial and territorial governments on the broad parameters of reform, but leaves to each province decisions as to how to design and implement new child benefits and services” (Jenson and Mahon 2002: 3). In Appendix B, I provide a timeline of these, and other, key policy events and publications relevant to the thesis. In this Appendix, sources pertaining to disability are listed below, and those related to childhood above, the timeline, with the 1999 signing the SUFA marking the center divide. Along the bottom of the timeline, the approximate period is shown for development of the social union initiative, development of the NCA, and implementation of programs and initiatives under the umbrella of the NCA (see Appendix B).

While the FPT Council of Ministers on Social Policy Renewal was attributed authorship for publications, news releases, and online content about the social union initiative and the priorities under its umbrella, formulation of the shared visions for childhood and disability was not limited to this council. A national vision for each issue was built on public input, as well as on the legacy of previous federal and intergovernmental reports (as well as the research and discussion that went into these). Committees in the House of Commons (HOC) provided another context for gathering input to inform the process. The HOC Standing Committee on Human Resources and the Status of Persons with Disabilities (HRPD) was positioned to advise Human Resources

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44 The socialunion.gc.ca website was hosted from 1998 through 2011, and is now archived online at Wayback Machine at https://web.archive.org/web/19990427173006/http://socialunion.gc.ca. Information on SUFA was added to the site in 1999. In 2000, “Early Childhood Development” was added to this list, followed by “Early Learning and Childcare” in 2003. The NCB was moved to its own site in 2002.

Development Canada (HRDC).\textsuperscript{46} The HRPD included the Sub-Committee on Children and Youth at Risk (SCYR) from 1997-2003 and the Sub-Committee on the Status of Persons with Disabilities (SSPD) from 1999-2003.\textsuperscript{47} The function of the sub-committees was to compile information to inform policy directions. This function was fulfilled through committee researchers as well as through calling expert witnesses. Interim and final reports were generated by HOC committees and available to the public. Most evidence presented to the committees was also transcribed and publicly available. Because witnesses were invited, evidence represented a selection of what the committee deemed relevant to the policy issue at hand. Reports represented a further synthesis, which did not purport to include all information or perspectives gathered in the process. The SSPD addressed concerns ranging from benefits, to access to employment, to human rights for persons with disabilities. The SCYR gathered evidence relevant for setting a national agenda for children. In addition to governmental and intergovernmental bodies, a number of think tanks and other organizations were actively contributing to the public policy discourse pertaining to the SUFA and the NCA. Some of the think tanks active at the time included the Caledon Institute of Social Policy, the CIAR, the Canadian Policy Research Network (CPRN), and the Roeher Institute (which focused specifically on disability policy). Other think tanks, professional organizations, and community organizations also contributed to the conversation on the NCA. Among these, the Canadian Association for Community Living (CACL) is particularly relevant to this thesis because it represented families of children with intellectual disabilities.

In this section, I have outlined the general political climate and concerns in the early 1990s, which provides the backdrop for the emergence of the entry of the neuro-logical approach. In the next section, I describe how health, human resources, and national goals for child development were being framed at that same time. This will provide a basis for understanding how the neurological model was consistent with and differed from earlier policy conceptualizations of health, human capital, and childhood.

\textsuperscript{46} Human Resources Development Canada (HRDC) replaced Employment and Immigration in 1996. In 2003, HRDC was split into the Department of Social Development and the Department of Human Resources and Skill Development. In 2006 these departments were merged into Human Resources and Skills Development Canada (HRSDC). In December 2013, HRSDC became Employment and Social Development Canada. I refer to HRDC throughout this thesis, despite subsequent changes during the study period.

\textsuperscript{47} The SSPD met once at the end of 1998.
5.1.2 Child, Health, and Human Resources before Neuro-logic

Childhood, the vitality of populations, and human capital have been consistent concerns for modern biopolitics, but over time ideas about what these mean and what must be done to govern them change. In Canada, the truth claims and strategies reflected in the neuro-logical approach to investing in childhood demonstrated both similarities to and differences from those prominent in national policy discourse before the brain focus emerged. Some of these shifts can be discerned in the policy discourse on child poverty across the 1990s. From the beginning to the end of the decade, the themes swung from children’s rights, involvement, and equity to a focus on applying scientific evidence to achieve measurable outcomes. Initially, international attention to early childhood and child poverty was heightened in the context of two United Nations events—the 1989 U.N. Convention on the Rights of the Child and the 1990 U.N. Summit for Children. The Government of Canada announced a Child Development Initiative (CDI) in 1992, in response to commitments made at the U.N. Summit for Children. The 1993 Community Action Program for Children (CAPC), a transfer program to provinces and territories to support community-based projects involving local organizations, espoused guiding principles characteristic of those before the swing to evidence-based practice, namely: “children first, equity and accessibility, community based, strengthening and supporting families, flexibility, and partnerships” (Standing Senate Committee on Social Affairs, Science and Technology 2009: 62-63). The fact that the policy process leading to the CDI was guided more by community involvement than objective evidence was critiqued in 2002 by Boyle and Willms, whose position mirrored the new focus on evidence-based policy and measurable outcomes (Boyle and Willms 2002). Claiming there was lack of compelling evidence that CAPC programs produced beneficial outcomes, Boyle and Willms noted that, “[t]here is very little evidence that ‘evidence’ has played a role in the creation of the 1992 and 2000 child development initiatives. These initiatives arise more from a process of consultation and negotiation than from a critical review of research evidence about the needs of children and interventions that might address them” (Boyle and Willms 2002: 475). 48

The 1995 Health Canada report, Turning Points: Canadians From Coast to Coast Set a New Course for Healthy Child and Youth Development (Health Canada 1995), also sheds light on the shifting discursive landscape, because it was published just as the neuro-logical model was

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48 The ECDA that was signed in 2000 as part of the neuro-logically informed NCA took over the place of the earlier CDI.
beginning to circulate but was not yet a frequent referent in national policy discourse. Specifically, the content for *Turning Points* was developed in the years immediately following the UN Convention and Summit, but preceding development of the neuro-logical model. *Turning Points* drew upon four years of consultation with Canadian leaders, experts, and the public with the aim to articulate national goals for Canadian children’s health and development (Health Canada 1995). A draft report titled, “The Vision of Health for Children and Youth in Canada” was released in 1991 and 1992 versions to facilitate public discussion (Health Canada 1995: 22). In *Turning Points*, the development of national goals was framed in the context of the 1989 U.N. Convention of the Rights of the Child. Acknowledging the same kinds of social and economic change that later animated the social union initiative, the report echoed the sentiment that “[n]ew approaches are needed to ensure Canada’s over-all prosperity and to maintain a quality social environment for our children” (Health Canada 1995: 3). Perhaps reflecting the influence of the developing model, *Turning Points* suggested that “major advances in knowledge regarding both the factors that influence healthy child development and the negative effects of inadequate social environments on healthy development,” taken in conjunction with social and economic changes, made it necessary to adopt new approaches in order to improve child outcomes (Health Canada 1995: 3). Such new approaches seemed to require building “the capacity of communities”; pursuing “collaborative, cost-effective strategies to achieve measurable improvements”; and reducing the poverty of children and families (Health Canada 1995: 16-17). Thus this report bore much in common with subsequent policy publications that centralized the neuro-logical model insofar as it set national goals for early childhood within the context of new social and economic realities, while drawing upon recent evidence in child development and invoking the importance of community capacity, collaboration, and cost effectiveness.

Despite these similarities, *Turning Points* conveyed a different overall narrative than later publications that were dominated by the neuro-logical approach. I suggest that this distinction stemmed from the presence of key themes that eventually took a backstage to those in the neuro-logical model rather than from the absence of reference to the developing brain per se. For example, in *Turning Points* children and their families were framed primarily through the lens of citizenship and human rights. If healthy development of the child mattered, it was because the child had a “right to survival” and because “the best interests of the child should always be a primary consideration” (Health Canada 1995: 3). Consequently, a key orientation was to “value children and youth for their own sake” (Health Canada 1995: 6). This value was explicitly
inclusive of diverse ways of being a child. For example, the report noted that, “[w]e often cannot overcome biological disadvantages that children are born with, but children with disabilities and their parents have taught us that approaches which emphasize and capitalize on ability can have major positive effects on development” (Health Canada 1995: 9, emphasis in original). While public health mattered, health was described primarily as an attribute of individual people rather than of the population per se. By extension the focus on “population health” that was coming to displace attention to health promotion was not yet evident in this report. Instead, one of the national goals was to prioritize health promotion and prevention, aiding individuals to experience good health. The social determinants of health were referenced throughout this report, and would remain a key theme in the population health approach. However, health-promoting individuals were at least as prominent in *Turning Points* as the aggregate population, and by extension, the individual benefits of addressing social determinants of health were highlighted. For example, addressing child poverty would allow all children to enjoy “full and equal participation” (Health Canada 1995: 15). Children and youth with disabilities should likewise be able to enjoy full participation in community activities. The report explained that, “[a]bout one in twenty children in Canada has a disability of some kind. Many people with developmental and other disabilities have successful careers, and more would do so if given a fair chance” (Health Canada 1995: 14). A final theme that played out in *Turning Points* was the need for support, and the role the federal government plays in providing it. All children, families, and communities were repeatedly discussed as needing support. Communities and governments in turn were sources of support. In this case, support did not imply financial supports, but rather offering a facilitative and supportive presence that would enable collective progress on the national goals.

Although *Turning Points* told a story that was in many regards distinct from the one that was on the cusp of dominating the policy discourse on child development, in other ways it foreshadowed—or at least set the stage—for what was to come. In particular, the final chapter focused on concepts and goals that were consistent with the later neuro-logical account. In this chapter, Health Canada identified departmental priorities to move the report’s agenda forward:

The first priority is to enhance public understanding of the determinants of healthy child development — including recent findings that demonstrate the importance of new strategies to improve outcomes for children and youth.

The second target is to translate this understanding into a new way of thinking and responding. The emphasis here will be on “new generation” strategies that:
• focus on promotion and prevention rather than treatment, and are results oriented, with particular attention to providing fair opportunities;
• promote community-based planning, decision-making, and evaluation;
• enhance inter-sectoral and inter-disciplinary coordination;
• link priorities for support of children with the social and economic health of Canada; and
• allocate resources to the initiatives that produce the best outcomes. (Health Canada 1995: 19-20, emphasis added)

In this sense, Turning Points marked the “turning point” between two narratives about healthy child development and how it mattered for Canadian society: one in which the child was framed prominently as a subject of rights, and one in which the child was framed more prominently as a biological human being during a critical early stage of brain development.

While Turning Points provided a convenient reference point for the shifting discursive terrain in health policy, there is no single publication that provides a similar reference point for labour policy. However, a general review of HRDC’s online content, news releases, and reports at this time is instructive. In this content, there is a clear focus on adult workers, unemployed adults, adult learners, and youth learners. On the HRDC website in 1996, Canadians were represented as preparing for the workforce, participating in the workforce, changing careers, serving as employers and community members, growing old, having families and children, and possibly being members of a minority group. References to younger Canadians were evident in such terms as “student,” “higher education,” “student loans,” “youth internship,” and “student summer job action”—terms that clearly established a focus on the soon-to-be-worker. Younger children and childcare were primarily referenced in relation to the need of parents to work. The federal department responsible for workforce at this time was concerned with the citizen-worker, which included the out-of-work-, unable-to-work-, learning-to-work-, and balancing-work-with-parenting-citizen. Notably, the HRDC website’s references to “human resource investment” and

49 To identify sources from the early 1990s, I utilized the web archives at http://web.archive.org/ to search the site http://www.hrdc-drhc.gc.ca/hrdc/menu-en.html. I utilized the oldest capture for this site, dated November 6, 1996, to search for news releases, reports, and priorities. Materials available through this search includes news releases from April 1994, speeches from January 1996, a listing of departmental initiatives current at the date of capture, lists of funded provincial projects as of September 1996 (beginning dates for projects not listed),

“social policy renewal” had not introduced a focus on childhood as of 1996. These examples of the limited attention to early childhood and the extended focus on relationship to work status reflect the argument (discussed in Chapter 3) that the adult worker was the ideal-typical Canadian citizen before the NCA (see Jenson 2000; Lister 2003).

In the HRDC context, themes associated with SUFA and the NCA began to join the mix of topics from around 1996 onward. For example, the idea of “major transformation” in social and economic circumstances was evident, and the Minister of HRDC introduced the SUFA prioritization of disability in an October 1996 address to the CACL. The importance of early child experience also began to emerge alongside the existing story of the citizen-worker, though there was not yet mention of the more specific (and subsequently ubiquitous) “brain development,” “brain wiring,” and “neural sculpting.” For example,

[i]he welfare of children and young adults is strongly influenced by their early experiences. There is substantial evidence to link education performance and many other aspects of young people’s development to what happens in early childhood. These links have often been used to support the general case for early interventions such as pre-school education. For such interventions to work well it is not enough to know that there are links between early disadvantages and later problems. The precise nature of these links must be understood if programs are to be well-designed and targeted. The National Longitudinal Survey of Children and Youth will eventually be able to examine in detail the earlier experiences of young people who subsequently experience difficulties.

Likewise, a section of the HRDC website titled “Growing Up in Canada” summarized HRDC’s lead with Statistics Canada on the National Longitudinal Survey of Children and Youth (NLSCY), which was identified as part of Canada’s Child Development Initiative.

Thus far, I have described the policy context in order to highlight how the emergent neurological model mobilized ideas of childhood, health, and human capital that were both similar to and distinct from policy discourse in the early 1990s. I have illustrated that the dominant story being told about the child, health, and human resources in the early 1990s was different from the


story of investing in early child development that became prominent alongside the NCA. Yet, at
the same time, the key social and economic problems for which brain development would appear
as a solution were evident during the early 1990s. Moreover, the direct linkage of the developing
brain, population vitality, and economic development was being made in Canada by 1994, and
was beginning to enter discussions and publications related to the population’s health from 1994
onward. In Appendix A, I list key national policy sources that mentioned the importance of brain
development, organized along a timeline by date of publication. The purpose of this timeline is
to provide a visual guide to the emergence of references to brain development within national
policy discourse in particular. Therefore, it is limited to publications from the federal
government or intergovernmental (federal/provincial/territorial) bodies, HOC committee
evidence and reports, key national policy initiatives, and other policy documents that showed
very clear evidence of being used widely in national policy discourse (e.g., versions of the Early
Years Study, which were initially commissioned by the Ontario’s Children’s Secretariat).
Sources related to health are shown below, and sources related to human resources above, the
timeline. Of the latter, those most focused on cross-sector child policy are placed at the top. This
arrangement reveals that the pattern of circulation began in health policy, and that more
widespread and sustained circulation was associated with human resources policy (see Appendix
A).

In this section, I described the concepts of health, human resources, and childhood that were
circulating in national policy discourse just as the neuro-logical model was beginning to be
introduced into this context. In the next section, I describe the CIAR program that launched the
neuro-logical model and produced the body of “expert,” authoritative knowledge upon which it
relied.

5.1.3 Neuro-logical Policy Expertise

Efforts to apply brain-centered views of human development to social and economic concerns
were obvious in the 1990s in both Canada as well as in the United States (Carnegie Taskforce on
Meeting the Needs of Young Children 1994). In the Canadian context, the neuro-logical model
that eventually entered national policy discourse had its intellectual roots in the CIAR, whose
affiliated faculty had been instrumental in developing the population health approach. In the
early 1990s, the CIAR included three “social” programs: Population Health, Economic Growth
and Policy, and Human Development, which were begun in 1987, 1991, and 1992 respectively
The Population Health Program documented its approach to population health in an edited collection of papers published in 1994: *Why Are Some People Healthy and Others Not? The Determinants of Health of Populations* (Evans et al. 1994). The neuro-logical model developed in the Human Development Program, which similarly developed a book-length overview of its approach in the 1999 publication *Developmental Health and the Wealth of Nations: Social, Biological, and Educational Dynamics* (Keating and Hertzman 1999). In many ways, the Human Development Program bridged the other two programs’ foci on population and economy, with human development being understood from the outset as the development of human capital that cut across the ideas of physical health, social wellbeing, and economic growth.\(^53\)

The Human Development Program was initiated with the aim to “‘create an integrated framework of understanding of the factors influencing human development from early life through to old age and the linkage among the different periods in development and their effects on learning and health’” (Canadian Institute for Advanced Research 1993, cited in Brown 2007: 174). After a year of program development, a second statement of the Human Development agenda was prepared in January 1994:

‘Modern societies increasingly face difficult new challenges as they seek to cope with global economic competition, the need to educate for new competencies in the population, and the provision of opportunities for health and well-being for each citizen. Planning for these societal necessities increases in complexity as the rate of social change accelerates. This is the dilemma that Canada, along with most other developed countries in the contemporary world, must confront.’

(Canadian Institute for Advanced Research 1994, cited in Brown 2007: 175)

In order to articulate what a learning society must be in this context, the Human Development Program-affiliated researchers adopted objectives

‘to analyze and integrate existing knowledge, and more important, to reconceptualize the dynamics of collective and individual human development in modern societies…. We anticipate that such an effort will transform the ways in which we view the fundamental processes of human development, and, in turn, offer a better opportunity for guiding social change away from negative outcomes

\(^53\) The CIAR programs were designed for intellectual cross-pollination, and external reviewers encouraged the three social programs, in particular, to work together (see Brown 2007).
Connections were established between the Human Development Program and national and provincial policy efforts from the outset. One of the earliest connections was to the HRDC’s work to create a longitudinal data set on children. By 1994, insights and conclusions from the developing “framework of understanding” were being discussed in national policy discourse (specific publications mentioned below will be discussed in greater detail in subsequent sections of this chapter). The 1996 publication *Growing Up In Canada: National Longitudinal Study of Children and Youth* (Human Resources Development Canada and Statistics Canada 1996) included an introductory chapter by Keating and Mustard (the Founding Director of the Human Development Program and the Founding President of CIAR, respectively). In 1999, Mustard likewise co-authored the *Early Years Study* (McCain and Mustard 1999), which would become the social policy publication most prominently and recognizably associated with what I refer to as the neuro-logical model. The Human Development Program also published an edited book, *Developmental Health and the Wealth of Nations* (Keating and Hertzman 1999), which synthesized both research supporting and governmental implications stemming from a neuro-logically based approach to population-level human development. This book, taken together with peer-reviewed articles by the Human Development Programs’ associates, seems to have covered a broader range of evidence, disciplines, and qualifiers than the content provided in policy discourse itself.

CIAR-affiliated researchers established a framework for understanding human development (what I call the “neuro-logical” model) that aimed to link scientific evidence to social policy implications. In the next section, I trace the emergence, proliferation, and spread of the neuro-logical model as a truth discourse in the national policy context.

## 5.2 Neuro-logic in Canadian Social Policy

Although the framework that explicated connections among developing brains, population vitality, and the economy was developing and circulating outside national policy discourse, in this section I maintain a focus on how the neuro-logical model materialized in and circulated through federal, intergovernmental, and other national policy discourse. This overview is divided into four sections. In the first, I describe the source of the neuro-logical model in the Human Development Program of the CIAR. The next three sections address the emergence and
circulation of the neuro-logical approach across three periods. Between 1994-1998, references to brain development were infrequent, but worked to establish the presence of scientific evidence that could explain the biological pathways that determine population-level outcomes. In 1999, a series of publications across levels and departments of government linked the importance of early brain development to national social and economic wellbeing. A comparison of these sources demonstrates that the neuro-logical model operated as part of the solution to perceived fiscal and social crises. From 2000-2011, the emergent neuro-logic was embedded in program implementation, linked to new data collection instruments, and spread nationally and internationally.

5.2.1 1994-1998: Stimulating Connections

References to the importance of early brain development began to enter federal and intergovernmental policy discourse beginning in 1994, first in relation to health, and later in relation to human resources development (see the timeline provided in Appendix A). In each case, the first mentions of brain development occurred in relation to the social and economic concerns that characterized the 1990s: how to establish governance that was coordinated, collaborative, and cooperative across levels of government; how to govern cost effectively and ward off ongoing fiscal crises; and how to ensure a national population with the flexibility, adaptability, and cognitive capacity to be competitive in the new globalized and knowledge-based economy.

In this national policy context, the earliest references to how early brain development was connected to creating such a population and economy were in the intergovernmental publication Strategies for Population Health: Investing in the Health of Canadians and in evidence presented to the HOC Standing Committee on Health (HEAL) beginning in 1995. In the latter case, expert witnesses were called to provide evidence to inform the committee’s “study on preventative strategies for healthy children;” evidence about the importance of early brain development was subsequently reflected in a report compiled from the research and evidence: Towards Well-Being: Strategies for Healthy Children (Standing Committee on Health 1997). Strategies for Population Health resulted from the work of the Federal/Provincial/Territorial

54 In the earlier cases of brain development being emphasized, the information is coming from researchers affiliated with the Canadian Institute for Advanced Research (CIAR), founded by J. Fraser Mustard, who also serves as co-author of the Early Years Study.
Advisory Committee on Population Health (AFCH), which was charged by the FPT Conference of Deputy Ministers of Health “to identify broad population health strategies on which the provincial, territorial and federal governments could collaborate and achieve significant results. The overall role of the Advisory Committee is to advise the Conference of Deputy Ministers on national and interprovincial strategies that should be pursued to improve the health status of the Canadian population and to provide a more integrated approach to health” (Federal/Provincial/Territorial Advisory Committee on Population Health 1994: preface). In these early occurrences in health policy, references to the brain were fleeting. Nonetheless, in each case the importance of early brain development to population health outcomes was presented as a matter of established scientific evidence. For example, Towards Well-Being pointed out, “[t]here is also increasing evidence that adult brain structure can be strongly influenced, sometimes in an irreversible way, by experience in early life” (Standing Committee on Health 1997). Likewise, Strategies for Population Health stated that:

One witness referred to a possible physiological base for positive outcomes for children, pointing to research in neuroscience and brain development and research on the neuroimmune system and its responsiveness to early experiences. He suggested that “people familiar with this literature are using phrases like neurosculpting, where individuals’ experiences create specific kinds of networks and pathways at the neural level that have tremendous impacts on health.” (Federal/Provincial/Territorial Advisory Committee on Population Health 1994: no page)

Together, these reports began to link questions of proper governance for 21st century realities to a body of scientific evidence that included the “truth” of determinative lifelong impacts of early brain development. Although these two reports mention the brain when Turning Points (Health Canada 1995) had not, all three reports gave the clear sense of being part of a single policy conversation. In the context of a common set of social and economic challenges, this conversation addressed how knowledge of child development would play a central role in helping Canada solve these policy problems. Turning Points concluded with a chapter titled “Moving the Agenda Forward,” which stated:

Greater understanding of the determinants of healthy development, coupled with efforts to link innovative efforts across Canada, will help to change traditional practices and shift the primary focus of our efforts. We are moving from a focus on costly remediation of problems to a focus on prevention of risk, and promotion of improved health and well-being for all children and youth. Increased awareness
will also reinforce for Canadians the vital link between investing in the next generation and the social and economic health of the nation. (Health Canada 1995: 19, emphasis added)

Here, there is a “vital link” between knowing what makes child development healthy and knowing how to make the future population and economy healthy. Gathering the knowledge was simply a matter of filling in the details.

In 1996, the collection of data through the NLSCY was described as being one source of just such knowledge (Human Resources Development Canada and Statistics Canada 1996). Growing Up In Canada, published jointly by Statistics Canada and HRDC, brought together nine chapters utilizing data from the first cycle (1994-1995) of the NLSCY. Unlike the earlier instances of the brain discussed in national health policy, here the developing brain—and the neuroscience that reveals truths about that brain—was front-and-center. An opening chapter by Keating and Mustard explained why both the NLSCY and the developing brain were “essential element[s] for building a learning society in Canada” (Keating and Mustard 1996: 7). In this way, the linkages among the developing brain, population, and economy were used to frame the collection of chapters. In addition, the authors referenced a broader set of literature that likewise situated the developing child in relation to meeting the governmental challenges posed by a changing world. Referenced titles included “Social economic factors and human development” (Keating and Mustard 1993), “The learning society in the information age” (Keating 1995), and “Technology, information and the evolution of social policy: The chips for neurons revolution and socio-economic change” (Mustard 1996).

If the NLSCY was an important source of knowledge, it was because Canadians would “need reliable information about how the population is doing as we traverse this new territory” (Keating and Mustard 1996: 10). Population data alone, however, was not sufficient to make sense of the “new territory” itself. A “new framework of understanding” (Keating and Mustard 1996: 10) was needed to put the data in context and to put it to good use. Child development played a key role in that framework. Poor aggregate child development indicated that society was not coping well with social and economic change, and poor child development likewise caused “long-term effects on individuals’ performance in the education system, their behaviour in adult life and their risks for chronic disease in adult life” (Keating and Mustard 1996: 7-8). The key to social-emotional adjustment, learning, and health was thus child development.
[There] is an emerging conceptual framework that encompasses the full story of human development: individual biological and behavioural processes; the longitudinal consequences of how these processes operate in varying social environments; the population patterns arising from individual life courses; the effects on health and well-being; and the impact of changing social and economic structures on these population indicators and on societal functions. (Keating and Mustard 1996: 8, emphasis added)

Monitoring “critical periods in early development” would be particularly important (Keating and Mustard 1996: 11).

While children’s development was vital, it was research on the brain and on the “mind-body relationship” that provided the two critical lines of evidence needed to elucidate the “biological pathways” through which early experience shaped individual and collective outcomes (Keating and Mustard 1996: 9). The chapter contained one call out box (labeled “Table 1” in that publication), which highlighted the relevance of the brain.55

Table 1. Neuroscience and children

- Brain development before age 1 is more rapid and extensive than previously realized.
- Brain development is more vulnerable to environmental influences than suspected.
- The effects of early environment are long lasting.
- The environment affects the number of brain cells and the way they are “wired.”
- We now have evidence of the negative impact of early stress on brain development and function. (Keating and Mustard 1996: 9)

The final references to brain development found in public policy materials before 1999 came from evidence presented to the HOC HRPD on June 11, 1998 (during the 36th Parliament, 1st Session). The witness providing evidence was Mustard, co-author of the framework chapter just overviewed. Because the evidence was consistent with this chapter, I do not review it separately here.

55 The table cites the source as Mustard (1996).
Taken together, early introductions of brain development to national policy demonstrated only a scattering of references, yet they pointed to a coherent story and authoritative evidence—at the ready to inform government on how best to govern in light of new social and economic problems. Throughout, there were variations on the theme, but no significant alteration to the basic reference point, which was well represented by the opening chapter of *Growing Up In Canada* (Human Resources Development Canada and Statistics Canada 1996).

### 5.2.2 1999: Connecting to Solutions

While 1994-1998 established the impression that neuro-scientific “truth” was poised and ready to inform good governance, the year 1999 placed an exclamation mark on this realization. In health policy, reference to the brain-population-economy linkage seems to have peaked with several publications in 1999 (see Appendix A for an illustration of this peak). 1999 was also a notable year because the emerging neuro-logical model was linked to the NCA, and by extension to SUFA. This had several implications. First, it occasioned production of extensive content (publication and websites) describing the vision of the NCA for a public audience. This meant dissemination of the discourse extended beyond the typical audience of content experts, policymakers, and policy think tanks. Second, public input was invited, opening the door for the disability community to collect and document its concerns over the ensuing years. Third, the policy discussion about SUFA and the NCA—as reflected through the sources included in the present study—occupied an inter-sectoral and intergovernmental space, offering a more obvious home base for neuro-logical model than could be provided within health policy or human resources development alone. Finally, SUFA, the NCA, and the children’s policy initiatives that were eventually included under the NCA umbrella served as intergovernmental agreements to collaboratively solve the social and economic problems already discussed. In this context, the brain-population-economy discourse emerged as a *solution*, or at least a critical part of the solution.

In 1999, six key policy documents identified early brain development as part of the solution. The publications varied in the extent to which they discussed brain development. However, unlike some of the examples from the years 1994 and 1998, each of these publications explicitly identified a neuro-scientific knowledge base as an important component in addressing social and economic challenges. Moreover, each contributed to articulating the actual place of brain development in governing aspects of population. These documents were released by five
different federal, provincial, and intergovernmental sources: Health Canada, HRDC, two federal/provincial/territorial bodies (AFCH and the FPT Council of Ministers on Social Policy Renewal), and the Ontario Children’s Secretariat. In this section, I introduce each document in context, explain its overall aims, and describe how brain development was positioned in relation to these aims. In order of publication, the documents reviewed in this section include Investing in Children: Ideas for Action (Human Resources Development Canada 1999), Early Years Study: Reversing the Real Brain Drain (McCain and Mustard 1999), A National Children’s Agenda: Developing a Shared Vision (Federal/Provincial/Territorial Council of Ministers on Social Policy Renewal 1999a), Investing in Early Child Development: The Health Sector Contribution (Federal/Provincial/Territorial Advisory Committee on Population Health 1999a), Toward a Healthy Future: Second Report on the Health of Canadians (Federal/Provincial/Territorial Advisory Committee on Population Health 1999b), and Healthy Development of Children and Youth: The Role of the Determinants of Health (Health Canada 1999). For the purposes of this overview, the documents are grouped based on their focus on cross-sector children’s policy, human resources development, or population health. I begin with the two documents that addressed children’s policy: Early Years Study and A National Children’s Agenda. Of all of the publications included here, these likely received the most widespread national, public exposure. Moreover, in different ways each of these policy documents represented significant interjections of the neuro-logical account into policy discourse. The Early Years Study—co-authored by CIAR Founding President, Mustard—served as the primary articulation of the neuro-logical model and the place of early brain development in the new population health approach (McCain and Mustard 1999). A National Children’s Agenda reflected how federal, provincial, and territorial governments attached this model to a national approach to children’s policy (Federal/Provincial/Territorial Council of Ministers on Social Policy Renewal 1999a, 1999b). The other publications presented below represent comparable ways in which governments identified an alignment between the model and health, human resources, and social welfare policy.

Taken together, these documents reflect the threshold that was crossed in 1999, as a scattering of references to brain development was replaced by more pervasive exposure across departments and levels of government. It also shows that a coherent neuro-logical model was readily available, and seemingly able to be applied to a range of governmental needs. In all cases, the
model was utilized alongside an approach to population in the same economic and scientific
terms consistent with those of the new population health approach, discussed above.

5.2.2.1 Children’s Policy

The Early Years Study: Reversing the Real Brain Drain was published in April 1999 (McCain
and Mustard 1999). It was commissioned by the Ontario Children’s Secretariat with the mandate
to “provide options and recommendations with respect to the best ways of preparing all of
Ontario’s young children... for scholastic, career and social success” (McCain and Mustard 1999: 1). Like Investing in Children (Human Resources Development Canada 1999), the Early Years
Study referred to rapid and significant social and economic changes. The Early Years Study went
further in basing its conclusions and recommendations on the critical importance of connections
among population, economy, and brain development. The preface to the report established this
focus as foundational to the report’s purpose and process:

Purpose

New understanding of brain development in the early years and its effect on
subsequent learning, behaviour and health for individuals has led a number of
governments and other organizations to take steps to provide better
circumstances in and outside the home for early child development....

Process

We began by building a synthesis of the new knowledge base from
neuroscience, developmental psychology, human development, sociology,
pediatrics, and the determinants of health, learning and economic growth
from work in Canada, the United States and Europe to establish a framework of
understanding with respect to the early years of child development and the effects
on learning, behaviour and health throughout the life cycle. (McCain and Mustard
1999: 1)

Anchoring this focus to the shared concern with human capital development, the preface went on
to explain,

Why Ontario Should Act Now

We know now that development of the brain in the early years of life, particularly
the first three years, sets the base of competence and coping skills for the later
stages of life. Improving the prospects for the next generation of Ontarians – with
respect to school performance, health and quality of life, and success in the labour
market – will improve the future for all of us. The entrants to the workforce of
2025 will be born next year. From this generation will come *a key factor in determining the wealth base of Ontario in 25 years*…. Ensuring that all our future citizens are *able to develop their full potential* has to be a high priority for everyone. It is crucial if we are to reverse “the real brain drain” (McCain and Mustard 1999: 2, emphasis added)

Invoking the national concern over “brain drain” caused by the migration of skilled, educated workers from Canada to the United States, in this policy document the failure to invest in early brain development was presented as the *real* brain drain. The *Early Years Study* aimed to synthesize a diverse body of scholarship and explain how it should inform social policy. The final report was meant to provide the knowledge base for Ontario’s reforms to the structure, funding, and delivery of family and children’s social services. In subsequent editions of this report published by Mustard with other co-authors, it became clear Mustard was not convinced that the report’s knowledge base and recommendations had been applied as intended.

Nonetheless, the *Early Years Study* went on to be cited frequently by other individuals and reports as evidence of the importance of brain development to society.56 One of the study’s authors also presented a version of the work at the World Bank Conference “Investing in our Children’s Future.”57

One month after public release of the *Early Years Study*, the FPT Council of Ministers on Social Policy Renewal released two short booklets describing the intergovernmental vision for investing in children: *A National Children’s Agenda: Developing a Shared Vision* and *A National Children’s Agenda: Measuring Child Well-Being and Monitoring Progress* (Federal/Provincial/Territorial Council of Ministers on Social Policy Renewal 1999a, 1999b). In efforts under the social union renewal umbrella, priority was placed on the development of collaboration and coordination guided by a “shared vision.” These brief summaries were intended to share the developing vision in order to initiate public dialogue and feedback.

56 At the national level, the *Early Years Study* was presented and reviewed at the 1999 annual meeting of Premiers, as well as at the September 2000 meeting of First Ministers, from which the intergovernmental Early Child Development Agreement was developed. For examples of *The Early Years Study* being cited as evidence, see the following primary data sources analyzed in this thesis: HEAL 36th Parliament, 2nd Session, 16 November 1999; HRPD 36th Parliament, 2nd Session, 23 November 1999; SCYR 36th Parliament, 1st Session, 4 May 1999; SCYR 36th Parliament, 2nd Session, 22 March 2000, 11 May 2000, and 14 Jun 2000; SCYR 37th Parliament, 2nd Session, 25 Apr 2001; Human Resources Development Canada (1998); FPT Advisory Committee on Population Health (1999a); FPT Council on Social Policy Renewal (1999a); Canadian Institute of Child Health (2000).

57 This conference was held on 10 April 2000 in Washington, DC. The early years paper appears as a chapter in the edited volume released from the conference (Young 2002).
Although the booklets’ content had been foreshadowed by information posted to the social union initiative website in 1998, the online content was minimal. Developing a Shared Vision and Measuring Child Well-Being and Monitoring Progress presented the NCA as an opportunity for different sectors and levels of government to work together on the shared concern of “children.” Like others publications described thus far, children were represented as Canada’s future, and the early years of childhood played an important role in shaping that future.

In 1998, the social union initiative website provided this brief summary of the issues:

There is strong evidence, including scientific research, that what happens to children when they are very young shapes their health and well-being throughout their lifetime. Science has proven what we have intrinsically known all along - healthy children grow into healthy, successful adults, who will shape our future. There are some children who are particularly vulnerable in today's changing world…. Many people and levels of government already work every day to give Canada's children the best possible opportunity to develop their full potential as healthy, successful and contributing members of society.58

Expanding on this summary, Developing a Shared Vision (Federal/Provincial/Territorial Council of Ministers on Social Policy Renewal 1999a) provided the primary description of the national vision, while Measuring Child Well-Being and Monitoring Progress (Federal/Provincial/Territorial Council on Social Policy Renewal 1999b) provided a brief rationale for children’s wellbeing, possible indicators, and ways to share information about best practices to facilitate the uptake actions that would positively impact outcomes.59 Developing a Shared Vision opened by underscoring two things: the opportunity for collaborative, cooperative government, and the identity of Canada as a caring society in which children are a collective concern and shared responsibility. While the document offered an invitation for all Canadians to help shape the NCA vision, the publication provided a comprehensive conception of child development based in “recent human development research” (Federal/Provincial/Territorial

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59 While the NCA was a national intergovernmental initiative, it did not include Quebec. The publication explains, “Quebec agrees with the objectives of the National Children's Agenda. However, the Government of Quebec has decided not to participate in its development because it wishes to assume full control over programs aimed at families and children within its territory. Furthermore, Quebec has not signed the Social Union Framework Agreement. Consequently, any references to joint federal-provincial-territorial positions in this text do not include Quebec” (FPT Council of Ministers on Social Policy Renewal 1999a: no page)
Council of Ministers on Social Policy Renewal 1999a: 2). Here, as in the other 1999 publications discussed above, the malleability of the brain during early child development was cited as an opportunity as well as a source of risk to individual and collective futures. Moreover, the earliest influences on child development would have a permanent impact. However, in contrast to the *Early Years Study* (McCain and Mustard 1999), development was also described in stages progressing up through adolescence and transition to adulthood (2 out of 37 pages were dedicated to describing development from 0-18), meaning that the focus was not exclusively on the earliest years in this document. Finally, an appendix provided a description of things that each province and territory was already doing that reflected the emerging vision of the NCA, further emphasizing the sense that early child development was already a shared concern and commitment among Canadians. Publication of these NCA vision documents was accompanied by mechanisms meant to enable community members to provide feedback and raise concerns.

### 5.2.2.2 Human Resources Development

*Investing in Children: Ideas for Action* (Human Resources Development Canada 1999) summarized proceedings of the National Research Council’s “Investing in Children” conference held October 27-28, 1998. As a published report, it was released in 1999 (month not listed) through HRDC’s Applied Research Branch (Human Resources Development Canada 1999). The report stated that, “[t]he objectives of the conference were to showcase the most recent NLSCY research on Canadian children and families, and to engage researchers, practitioners, and policy-makers in discussion on the application of these findings to policy and program development” (Human Resources Development Canada 1999: 1). The report itself was intended to summarize the conference’s workshop content, including the “ideas for action generated at the workshop discussions” (Human Resources Development Canada 1999: 1). As such, the publication likely drew the attention of the same pool of researchers and policymakers for whom the conference was designed—in other words, an expert, rather than public, audience. Workshop topics ranged from parenting, family, and school to health, work, community, and vulnerable children. In addition to summarizing specific workshops, the report framed the social and economic relevance of each topic. The opening salvo was to the emerging, globally competitive knowledge-based economy and the fact that children today are the “human resources” upon which future national success would depend in the new economy (Human Resources Development Canada 1999: 2). The NLSCY was situated in this context as a mechanism for tracking national child outcomes over time. Although workshop summaries did not focus on the
brain, the report established a clear link between the conference themes and the importance of brain development. For example, *Investing in Children* described the conclusions drawn at the closing plenary of the conference:

J. Fraser Mustard provided a comprehensive synthesis of the conference findings, touching on several of the many important themes that were discussed at the conference. **He stressed that brain development occurs largely before the age of five**, although problems often do not appear for many years. A lack of intervention and prevention strategies for children leads to much higher social and economic costs later on. However, in Canada, we invest less financially in the early years than in the later years. Mustard urged Canadians to demonstrate to the government the **importance of investing early in children not only because of social good that this does—but the economic payoff is equally large**. (Human Resources Development Canada 1999: 4, emphasis added)

The format of the conference also paired workshop presentations with group discussion to generate “ideas for action,” and references to the brain were introduced here. Specifically, the “ideas for action” for two out of the eight workshops referred to brain development. These explained that “optimal child development” was particularly shaped through experiences from conception through age five through such exposures as attachment quality, breast milk, maternal nutrition level, and pregnant women’s healthy or “unhealthy lifestyles” (Human Resources Development Canada 1999: 74, 88). Exposures during this period of brain development could lead to negative outcomes (e.g., “brains that are physically different”, aggression, future criminal activity, poor social integration, and the loss of “full potential”), or to positive outcomes (e.g., self-confidence, healthy sense of self, competence, ability to learn, language skills, ability to cope with stress, and positive relationships) (Human Resources Development Canada 1999: 74, 88). *Investing in Children* also referred to the *Early Years Study*, which was commissioned before the conference and was co-authored by Mustard (Human Resources Development Canada 1999: 119).

### 5.2.2.3 Population Health

The FPT Advisory Committee on Population Health (ACPH) reflected the emerging neurological model in two publications in 1999—*Investing in Early Child Development: The Health Sector Contribution* (Federal/Provincial/Territorial Advisory Committee on Population Health 1999a) and *Toward a Healthy Future: Second Report on the Health of Canadians* (Federal/Provincial/Territorial Advisory Committee on Population Health 1999b). The ACPH
was created in 1993 after the Deputy Ministers of Health restructured the health advisory committees. The new advisory committee replaced the previous Advisory Committee on Community Health, but also assumed new expanded responsibility for overall coordination and strategic planning for health goals (McKay 2001: 16). The ACPH was an intergovernmental hub for an emerging population health framework, which it had already articulated in 1995 in *Strategies for Population Health: Investing in the Health of Canadians* (Federal/Provincial/Territorial Advisory Committee on Population Health 1994). Mirroring the influence of CIAR researchers in the development of the *Early Years Study* (McCain and Mustard 1999), McKay noted that, “*Strategies for Population Health* was a public endorsement of the work of the Canadian Institute for Advanced Research, a think tank that created the concept of population health through a series of meetings and writings in the late 1980s and early 1990s” (McKay 2001: 18). Just as the social union initiative online content foreshadowed the importance of early childhood without detailing the linkages to early brain development, *Strategies for Population Health* (Federal/Provincial/Territorial Advisory Committee on Population Health 1994) mentioned the mounting evidence on the lifetime impact of healthy child development without fully introducing the brain-population-economy discourse.

ACPH’s 1999 publications, *Investing in Early Child Development* and *Toward a Healthy Future*, both maintained the population health emphasis and elaborated on the connections among population, the developing brain, and national economic wellbeing. *Toward a Healthy Future* drew upon available measures of health status and socio-economic status to summarize the health of Canadians. Children in the early years were identified as a “key population group” experiencing decreased opportunity for wellbeing, alongside youth and Aboriginal people (Federal/Provincial/Territorial Advisory Committee on Population Health 1999b: xii). “Healthy child development” was likewise identified as one of six determinants of health. The others were: socioeconomic environment, physical environment, personal health practices, health services, and biology and genetic endowment. A chapter on healthy child development and another on biology and genetic endowment both detailed the role of brain development. In the former case, the linkage between early life experiences, the brain, learning, and health was established in the opening line of the chapter: “[i]n the last decade of the 20th century, new evidence on the effects of early experiences on brain development, school readiness and health in later life has sparked a growing consensus about early child development as a powerful determinant of health in its own right” (Federal/Provincial/Territorial Advisory Committee on
Population Health 1999b: 71). Likewise, a section outlining “Highlights” for the chapter set the stage by introducing the determinative power of early brain development, and the centrality of the social environment to the brain’s formation: “[t]he foundation for healthy growth and development in later years is established to a large degree in the first six years of life. Experiences from conception to age six have the most important influence of any time in the life cycle on the connecting and sculpting of the brain’s neurons. Positive stimulation early in life improves learning, behaviour and health into adulthood” (Federal/Provincial/Territorial Advisory Committee on Population Health 1999b: 73). The chapter on biology and genetic endowment began by discussing the expansion of scientific understanding of DNA over the preceding 50 years. While biology was said to provide an initial endowment, the chapter clarified that what happened to the brain determined what would happen to that endowment, hinting at the role of the brain as a biological pathway between endowment and outcomes: “research in biology, epidemiology and social science is beginning to expand our knowledge about the links between biological pathways and the determinants of health. For example, exciting new research on brain formation has shed new light on how stimulation in a baby’s environment interacts with biology to influence healthy child development in earliest infancy” (Federal/Provincial/Territorial Advisory Committee on Population Health 1999b: 158). Linking the summary of Canadians’ health to this knowledge about what determines health, the report charted “priorities for action” for each determinant of health. Thus, it outlined what was known about the nature of human vitality, how Canadians were fairing, and what the nation must do in light of this knowledge.

Investing in Early Child Development focused specifically on how the health sector could contribute to the more narrow area of healthy child development, in light of the population approach to health. Through this focus, the health sector contribution to the NCA would also be clarified (Federal/Provincial/Territorial Advisory Committee on Population Health 1999a: 2). The emphasis in this report was the proper alignment of sectors and services around the life of the child and family to support optimal child development at a population level. While the impact of experience during early child development was discussed, brain development was not emphasized. Nonetheless, a set of referents was established that situated the publication in the landscape of the neuro-logical model. For example, in the section “Context for this Report,” two quotes reflected this model were highlighted in a call out box, which is shown in Figure 4 (Federal/Provincial/Territorial Advisory Committee on Population Health 1999a: 3). The report began with three premises: that healthy childhood was determinative of life span health as well
as societal health, prosperity, and productivity; that family responsibility for raising healthy children should be bolstered by coordinated cross-sectoral action; and that government had an obligation to measure and monitor child development (Federal/Provincial/Territorial Advisory Committee on Population Health 1999a: 1). The basis for the report was identified as research knowledge—specifically, evidence that early childhood experience created protective attributes and resistance to the harmful impact of risk factors (Federal/Provincial/Territorial Advisory Committee on Population Health 1999a: 3). The NCA was identified as a vision that was galvanizing public interest, engagement, and support for a collective commitment to take action on child development.

“The foundation for healthy growth and development in later years is established to a large degree in the first six years of life.”

*Toward a Healthy Future: Second Report on the Health of Canadians*  
F/P/T Advisory Committee on Population Health (1999)

“There is powerful new evidence from neuroscience that the early years of development from conception to age six, particularly for the first three years, set the base for competence and coping skills that will affect learning, behaviour and health throughout life.”

*Early Years Study*  
McCain and Mustard (April 1999)

**Figure 4. Reference to Neuro-logical Model in Investing in Early Child Development**

*Healthy Development of Children and Youth: The Role of the Determinants of Health* (Health Canada 1999), which was released in December of 1999, was a product of Health Canada’s Health Promotion and Programs Branch. The publication described the “health status” of the population, with a focus the ages eight through eighteen. The population health approach was used as a framework, and attention was concentrated on the broad social determinants of health. These were presented as interacting with development. Child development was distinctly positioned in an intermediary role between all determinants of health, on the one hand, and “population health status,” on the other. This positioning was suggested from the opening passage of the foreword: “Strategies to influence population health status must address the broad range of health determinants in ways that are both comprehensive and integrated. While, in its own right, healthy child development was a crucial determinant of future health and well-being of the population, it was also influenced by each one of the other major determinants” (Health
Canada 1999: iii). While the early years of development were not the primary focus of this publication, the document did detail development across three stages over the course of one and half pages—one full page of which was dedicated to the early years. This description of early child development placed a clear emphasis on brain development. The following long passage is excerpted from a call out box on that page:

How the Brain Develops

Recent research on the development of the brain has reinforced the belief that the first few years of life are vitally important to healthy development, and that impacts felt early on may well have consequences throughout life.

By the time a baby is born, it will have approximately 100 billion brain cells and will have the ability to learn through the general pathways connecting regions of the brain. If development goes well, so does the ability to learn.

The baby’s neurons begin to form a dense network of interconnections, with each cell sending messages out to other brain cells and receiving input from others. With the help of special chemicals, they travel from cell to cell, creating connections. Repeated activation of these networks strengthens the connections so that by the time the child reaches age 2 or 3, each neuron has formed an average of 15,000 connections. This network of connections provides the child with built-in flexibility, allowing her to respond successfully to stimuli in her environment. For example, in order to learn language, a child must be physiologically ready for sound structures and grammar.

Children retain these neural connections until about age 10 or 11, after which time pathways that have not been repeatedly stimulated will gradually atrophy and die. Various factors — for example, disease, toxic substances and alcohol — can place a child’s developing brain at risk. Social experience is also critical to the process of development; the workings of the brain are profoundly shaped by children’s experiences, in particular, their relationships with family and peers. (Health Canada 1999)

Taken together, these policy sources from 1999 show that a coherent neuro-logical model was readily available, and seemingly able to be applied to a range of governmental needs. In all cases, the model was utilized alongside an approach to population in the same economic and scientific terms consistent with those of the new population health approach, discussed above. 1999 was a threshold year between a policy context in which the neuro-logical model might be referenced and one in which it was taken as a foundational truth, even if its was only mentioned briefly (see Appendix A). 1999 also marked just the beginning of HRDCs mobilization of the
neuro-logical framework, which not only lasted over a decade, but also involved funding (voluntary) program implementation across Canada, and the widespread use of the new Early Development Instrument (EDI) to assess early child development (see Connor and Brink 1999). I discuss this programming and measurement in detail in the next section.

5.2.3 2000-2011: Proliferating Connections

In this final period, the neuro-logical account was solidified as a legitimate base of evidence for social policy, and established a greater set of connections to local communities. References to the early years and the importance of early brain development were frequent in national and intergovernmental policy discourse from 1999 onward. The HOC SCYR (which began in 1997) in particular provided an opportunity for ample and ongoing discussion of brain development through its last year, in 2003. Because this sub-committee was charged with compiling information to assist HRDC determine policy directions, the nuances of the linkages between developing brains and the vitality of the population and economy could be explored in detail.

While references to the neuro-logical account in policy discourse from 2000 onward were frequent, many of them were brief and lacked detailed explanations of the explanatory model. The defining characteristic of these references, however, was they assumed that evidence about the importance of brain development was well established. Just as in the years leading up to 1999, a fleeting mention both carried the weight of evidence and invoked a coherent neuro-logical conceptual model, even when the model was not covered in detail. Publications and testimony to committees of the HOC referred to what “we now know” about early brain development. The experts and key publications that advanced the neuro-logical approach were cited routinely. While Developmental Health and the Wealth of Nations (Keating and Hertzman 1999) and other CIAR-affiliated publications were cited, the Early Years Study (McCain and Mustard 1999) in was frequently cited as a key source for the newest evidence on early childhood and brain development. Follow up versions to the Early Years Study, which were released in 2002, 2007, and 2011 (McCain and Mustard 2002; McCain et al. 2011; McCain et al. 2007), built upon the 1999 report and provided an opportunity to assess policy implementation against the neuro-logical vision. Unlike the 1999 report, these were released by community organizations rather than the Ontario Children’s Secretariat, and were infrequently cited in national policy publications. Overall, the proliferation of references, even when fleeting, served to amplify the neuro-logical message.
This period was also characterized by extensive data collection on child development. The primary strategies for generating data on development were the NLSCY and the EDI. The NLSCY was a national longitudinal study of children and youth development conducted by Statistics Canada and Human Resources Development Canada that began in 1994 and collected data through 2009. The NLSCY collected longitudinal data, and added age cohorts to each data collection cycle, therefore it was particularly useful for comparing the same children across points in time. A set of instruments was utilized to collect data on several domains of participating children’s development and health. The EDI was developed by a CIAR-affiliated researcher in tandem with development of the neuro-logical model, and was designed to aggregate measurement of children’s development to generate a measure of developmental outcomes for the community’s population of children as a whole. The EDI was utilized primarily in the HRDC’s Understanding the Early Years (UEY) initiative. Begun with a pilot in 1999, the UEY initiative combined the previous two forms of data collection with community-level data collection through mapping community attributes and resources.

The UEY initiative provided the programmatic means for the neuro-logical model to spread from 1999-2011. UEY provided funding for community coalitions to work with researchers to: collect aggregate data on child development indicators in the kindergarten year using the EDI, compile data on community environmental indicators, complete community mapping that matched aggregate “early development” levels to the geographic distribution of community assets, and develop a community plan of action that could improve early development levels over time. The UEY initiative included 48 communities (see Appendix C for the list of participating UEY communities), fostering an increase in reference to the critical role of early brain development to societal wellbeing. During implementation of the UEY initiative, participating communities developed and disseminated posters, fact sheets, community resources guides, newsletters, online content and community research reports that communicated the neuro-logical model to community members. In some instances, these materials included images of neurons (see Figure 5), graphs of developmental trajectories aligned to critical periods (see Figure 6), or explanations of the neuro-science underlying child policy, all of which are seen in the Red Deer UEY newsletter in Appendix F. Appendices G and H show a poster and newsletter from a three-county UEY region in Nova Scotia. Posters were individualized for each UEY community and used for community outreach. Although these did not leave room for extensive descriptions of the neuro-logical account, the Nova Scotia poster referred to the “research”
evidence supporting the work (see Appendix G). The community’s UEY newsletter (see Appendix H) elaborated on the science behind the understanding the early years. Every UEY community disseminated community data and resource reports. In Appendix I, data on community resources was disseminated through a parent resource guide, which likewise included the graph of developmental trajectories aligned to critical periods. Appendices J and K show the kinds of data figures that were used in community reports. These examples from Kings County, Nova Scotia and the Dixie Bloor community in Toronto show how neighborhood’s aggregate EDI scores, socio-economic status, and programs and services were mapped, allowing factors to be aligned with one another and onto the space of the community. While the programmatic implementation funded through UEY ended in 2011, the EDI and the community-based strategies for mapping early development, community assets, and community risks were carried forward in research and implementation in Canada, the United States, and internationally (see Curtin et al. 2014; Einboden et al. 2013; Geddes et al. 2014; Underwood and Frankel 2012).

Figure 5. Brain Development Depicted and Described in an UEY Community Newsletter
Overall, the period from 2000-2011 was characterized by the neuro-logical model being accepted as the scientifically grounded, evidence-based, and true account of human development within Canadian policy discourse. As such, it was linked to new data collection instruments and policy programs under NCA. Through its truth discourse as well as these measures and programs, the model circulated widely both nationally and internationally.

Figure 6. Critical Periods of Brain Development from an UEY Family Resource Guide

5.3 Conclusion

A neuro-logical model for understanding the social and economic nature of human development emerged and gained solid footing in tandem with the social policy renewal of the 1990s in Canada. Politically, there was an imperative for a new, “rational distribution of roles and responsibilities” that was able to “deliver quality government services at an affordable price,” manifest flexibility in the face of social and economic change, and “allow Canada’s economy to compete in a globally interdependent economy” (Annual Premiers' Conference 1997). Socially and economically, there was an imperative for evidence. The claim that “critical review” of evidence was needed more than public consultation (Boyle and Willms 2002: 475) resonated with a sentiment that saturated neoliberal governmentality. However, experts of “critical review” were needed, because the scientific evidence did not translate directly to policy: evidence, like
the “priorities for support of children,” had to be calibrated to the “social and economic health of Canada” (Health Canada 1995: 19-20, emphasis added).

Conveniently, the CIAR-assembled network of multi-disciplinary experts was guided by at least a few researchers who aimed to translate scientific “truth” into policy-relevant evidence. On the heels of launching the “population health” model, the CIAR Human Development Program began to link and calibrate neuro-scientific truths to their policy implications. A neuro-logical linkage among brain-population-economy was established that was simultaneously a product of Canadian innovation and a replication of comparable brain-policy innovations being generated in the US and the UK (see Bruer 1999; Macvarish et al. 2014). As they worked to coordinate their programmatic innovations in human development with those in population health, they introduced their burgeoning neuro-logical “cognitive and normative map” (Lemke 2011: 119) into policy, first into health policy, and later into human resources policy discourse (see Appendix A for a timeline of references to brain development in key sources).

The neuro-logical model emerged and took root over the course of a decade or more, with the NCA and SUFA offering a rooting point for rapid proliferation in the 2000s. Between 1994-1998, references to brain development were infrequent, but this period nonetheless established the impression that neuro-scientific “truth” was poised and ready to inform good governance. In the context of SUFA and its prioritization of a children’s agenda, brain development took on a new centrality, and a flurry of policy publications in 1999 served as vehicles for establishing the policy presence and arousing public response (see Appendix A). Between 2000-2011, the neuro-logical account was solidified as a legitimate base of evidence for social policy. Programmatic implementation operationalized the neuro-logical model and propelled its knowledge, strategies, and instruments into communities across the country (see Appendix C for a full list of UEY communities). The new brain sciences, apparently, offered objective, scientifically true knowledge of child development that seemed, likewise, to speak to policy problems in the face of rapid social and economic change.

In the next chapter, I turn my attention to the neuro-logical truth discourse that was mobilized in the NCA, and address the question of how child development was attributed value for governing population.
Chapter 6:
“Mismatch of Opportunity and Investment”: Neuro-logical Strategies for Human Capital Development

To summarize this, the critical, sensitive periods of brain development are late in utero and the first five to six years. The first three years are critical… That sets up a whole set of patterns for the future…. Remember, economic growth is entirely dependent upon the quality of your population. That's an extremely important thing to remember. (Dr. J. Fraser Mustard, Founding President, Canadian Institute for Advanced Research, *Evidence*, House of Commons Standing Committee on Human Resources and the Status of Persons with Disabilities, 11 June 1998)

6 Introduction

In this chapter, I demonstrate that neuro-logic located the investment opportunity for society in the capacity of the brain to develop to its (natural) potential. In the process, a domain of differences from normal brain development and normal potential was of necessity taking shape. The development and rise to prominence of the neuro-logical explanatory model was not simply a matter of introducing scientific evidence into the policy context. Instead, it was a framework for understanding the nature of the human population in its relationship to the economy and society. In many ways, the “truth” of early childhood relayed by these experts seemed to reflect continuity with both the developmentalism and social valuation of childhood that characterized the twentieth century as a whole. Viewed in terms of continuity, evidence from what was described as the brain sciences simply clarified and substantiated what developmental psychologists and society already assumed about the development and value of children. Nonetheless, use of neuro-evidence was also part of telling a distinct story about the child. This story covered three key domains: the nature of the human being, the relationship between that human being and the economy, and the implications of this for the proper government of human life. Although there was certainly an effort to sell policymakers and the public on this view, the overwhelming characteristic of this narrative of human development was that it claimed to uncover and relay the objective, natural truth of human development. Any limitations in the availability of evidence meant that more evidence was needed, but did not constitute a challenge
to the truth that human potential was neurodevelopmental potential, and that economic development was human (neuro-)development.

The truth that was discovered was that the critical window of opportunity for social-economic investment was the capacity for optimal brain development in the first few years of life. Normal brain development unfolded in the context of adequate and appropriate stimulation and led naturally to optimal human development. Yet, the social environment posed a continuous threat to development, because it was the source of most factors thought capable of thwarting brain development and thereby diminishing potential. Brain wiring was a biological pathway for how early exposures to shape lifelong outcomes in physical, mental, and social health and wellbeing, for both the individual and the population as a whole. Optimizing early brain development was a particularly key investment in reducing social problems and their costs while producing a competitive population for a new knowledge-based economy. Therefore, it was logical to align social investment to this opportunity for growth—growth that relied on rooting the potentiality of childhood to the potentiality of the brain to develop to its potential. My position in this thesis is that this articulation of development, potential, and investment established the conceptual landscape and terms for positioning children with disability in the National Children’s Agenda (NCA).

The body of this chapter is organized into two sections. In the first section, I establish that human development was understood in terms of brain development, in which brain development provided neuro-biological pathways between individual trajectories and population patterns and the early years served as a critical stage of human development. In the second section, I examine how the social value of early development was then cast in neuro-logical terms, establishing individual trajectories of brain development as the biological basis for population human capital development. This way of understanding and governing value in human life has important implications for the place of developmental differences (including disabilities) in social policy, which I explore in Chapter 7.

6.1 Knowledge of Human Development

In this section, I describe the neuro-logical knowledge of human development, which paid particular attention to early child development—or what was more routinely referred to as the “early years” or “early development.” I first explain how normal child development was constituted in terms of the natural capacity of the brain to develop to its potential, and the
Simultaneous susceptibility of the brain to detrimental environmental stimuli. I next analyze a key theme of the neuro-logical model—namely, that normal brain development was a biological pathway to individual and population outcomes. Finally, I describe how the early years were cast as a particularly critical stage of human development. This neuro-logical knowledge of human development provides the foundation for framing the value of early childhood and how to optimize it, which I will discuss in the subsequent section.

### 6.1.1 Normal Child Development

Both 20th century developmental psychology and the new brain sciences provided the knowledge base for understanding normal child development in the neuro-logical model. However, this knowledge was translated for policy purposes. McCain and Mustard explained that developmental psychology had established a good understanding of how children “grow and learn” across developmental stages, however, they claimed that before evidence from the brain sciences was added to the account in the 1990s, “findings about the importance of early child development and its possible long-term effects did not catch public attention” (McCain and Mustard 1999: 26). The “explosion of knowledge from neuroscience”—which included neuroscience, brain imaging, and “neurobiology”—seemed to provide publicly compelling evidence for conclusions drawn by developmental psychologists (McCain and Mustard 1999: 26). Neuro-scientific evidence was not presented as the sole basis for understanding normal child development, however, it was privileged as the most compelling explanatory model. The conceptualization of normal child development that emerged was likewise heavily weighted toward the nature of brain development, having the effect of reducing much of normal child development to a (biological) neuro-developmental process.

Telling the story of “normal” child development thus meant telling the story of normal brain development. The *Early Years Study* (McCain and Mustard 1999), which positioned itself as a synthesis of all the scientific evidence relevant to understanding child development and its policy relevance, told the most detailed story of early development through the neuro-logical lens. Typically, subsequent sources that mentioned the importance of early brain development for social policy directions would cite the *Early Years Study* as the most definitive synthesis of evidence on child development rather than retell the story. Therefore, much of the description of normal child development provided in this section is drawn from the *Early Years Study* (see McCain and Mustard 1999: 25-52). In keeping with the new focus on the brain, this story of
normal development began with formation of the neural tube two weeks after conception, leading to formation of the brain and spinal cord from the neural tube. Rapid brain cell proliferated, and neurons migrated “to the correct locations and form their connections” (McCain and Mustard 1999: 26). By four to seven months of fetal development, “billions of neurons” were produced, forming “[m]ost of a human’s lifetime supply of brain cells” (McCain and Mustard 1999:26). Once birth occurred, the sense organs channeled input from stimuli in the baby’s environment, causing neurons to establish synaptic connections. This process of brain wiring was subject to “an important process of pruning away [of] neurons, synapses and even entire neural pathways that are not being stimulated” (McCain and Mustard 1999: 27).

In order to understand the nature of the child and what s/he would become, it was necessary to understand the nature of the brain and its development. The brain, explained McCain and Mustard, was a set of neurons, synaptic connections, chemical processes affecting brain wiring, and electrical activity. Through the gateway of the sense organs, this brain served as the primary interface between the human being and the external, stimuli-generating world. This intermediary function of the brain was illustrated through a chart juxtaposing old thinking and new thinking about the brain (see Figure 7). While this chart was meant to show the change in thinking about the brain in particular, it is notable that replacing most instances of the word “brain” in this chart with the word “child” likewise illustrates the difference between the old thinking and the new neuro-thinking about child development.

Brain development unfolded “properly” or normally in the presence of appropriate stimuli (McCain and Mustard 1999: 28). Although birth initiated a more intensive period of sensory input, stimuli began in utero, with the mother’s body providing the first environment for brain development. Hence, good maternal nutrition during pregnancy and infant nutrition after birth were considered an integral foundation for proper development. After birth, caregivers became sources of environmental stimuli, providing the input that enabled the brain to development to unfold normally. Given sufficient stimulation, the brain was able to develop in dynamic interaction with its environment, leading to development of its potential. The brain was not, in this view, a vessel to be filled. Instead, brain development was primarily a set of chemical, electrical, and social interactive processes that formed the brain’s structure. At each stage of

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60 The original source for the chart is Shore (1997: 18).
development, this brain structure provided the foundation for receiving and channeling subsequent stimulation.

**Figure 7. Old and New Thinking about the Brain**

Because the brain was the primary interface between the individual and the external world, brain development was very vulnerable to environmental stimuli, particularly in their social forms (e.g., social interactions, nurturing, neglect, and stress). Much of the story of brain development was told in relation to the abundant environmental risk to normal development. In particular, brain development was “adversely affected by either an absence of stimulation or chaotic, traumatic stimulation” (McCain and Mustard 1999: 34). Such insufficient or negative stimuli led to “underdevelopment” (McCain and Mustard 1999: 35) or “unsatisfactory development of the brain” (McCain and Mustard 1999: 31). While all brain development was vulnerable to the environmental context of development, some parts of the brain retained a degree of plasticity beyond critical periods while others became fixed early in life. McCain and Mustard noted that, “[i]t appears that once the regulatory systems (emotional regulation and arousal in the limbic and midbrain areas) are organized early in life, it may be difficult to modify these systems” (McCain and Mustard 1999: 30). In the next section, I consider how this dynamic interaction between
brain development and environmental stimuli provided a potent explanatory model for understanding individual and population outcomes.

6.1.2 Developing Brain as Biological Pathway to Outcomes

A central theme running through the neuro-logical model was the positioning of the brain as a socially important biological pathway. This reflected the idea that the brain was a biological pathway between not only early experience and lifelong outcomes for the individual, but also between individual trajectories and population patterns. The earliest reference to brain development in policy discourse identified the brain as a pathway by which life experiences could affect health outcomes across the individual life course. In this 1994 example, the brain was described as one among several biological pathways:

There are complex relationships between individual experience and the development and functioning of key body systems. For example, an earlier section of this paper described how limited options and poor skills for coping with stress increase vulnerability to various diseases, through pathways that involve the immune and hormonal systems. There is also increasing evidence that adult brain structure can be strongly influenced, sometimes in an irreversible way, by experience in early life. (Federal/Provincial/Territorial Advisory Committee on Population Health 1994: 20, emphasis added)

The particular way in which the brain served as a biological pathway was through “neurosculpting,” or the shaping of the connections among neurons. The Director of the Canadian Institute for Advanced Research (CIAR) Human Development Program, Keating, elaborated on this mechanism and its health impact in evidence presented to the HOC HEAL in 1995:

One of the things that I want to emphasize that's coming out of the research literature in the last decade, in particular, is that this connection between early childhood experiences and development and subsequent health during childhood, the adolescent period, and throughout adulthood - we're beginning to understand the mechanisms of that much more deeply, particularly the research in neuroscience and brain development, and the research on the neuroimmune system and its responsiveness to early experiences. People familiar with this literature are using phrases like neurosculpting, where individuals’ experiences create specific kinds of networks and pathways at the neural level that have tremendous impacts on health. (Professor Dan Keating, Director,
Thus far, I have presented examples that make it clear early brain development was viewed as having an impact on health over the life span. However, brain wiring was likewise portrayed as a biological pathway to cognitive, behavioural, and social-emotional outcomes, as illustrated through the following passages:

> There is now substantial evidence that the quality of early childhood experiences has long-term effects on individuals’ **performance in the education system**, their **behavior in adult life** and their **risk for chronic disease in adult life**. (Keating and Mustard 1996: 7, emphasis added)

Language that is part of human caring and interaction **activates the brain**. As **these pathways become well used, a baby develops the ability** to understand and use language. Pictures of the brain cortex show that babies who are not exposed to a lot of verbal stimulation have **fewer connections and less activity in the brain**. This **translates into difficulties in communicating** as a young child and **a reduced readiness for school**. (Federal/Provincial/Territorial Advisory Committee on Population Health 1999b: 163, emphasis added)

When parents, caregivers and babies have a loving, secure relationship in the first 18 months of the child’s life, the infant forms a “secure attachment.” This **attachment helps to establish positive connections in the brain that allow the child to develop** trust, self-esteem, emotional control and the ability to have positive relationships with others later in life. (Federal/Provincial/Territorial Advisory Committee on Population Health 1999b: 179, emphasis added)

Early brain development not only played an important mediating role between early experience and individual outcomes, but was also implicated when other biological pathways impacted health: “…exciting new research on brain formation has shed new light on how **stimulation in a baby’s environment interacts with biology** to influence healthy child development in earliest infancy” (Federal/Provincial/Territorial Advisory Committee on Population Health 1999b: 158, emphasis added). A different publication explained in more detail how genetic endowment and environmental risks interact with the developing brain to shape vulnerability to poor outcomes:

> We are learning more and more about how the environment affects brain development. For instance, sophisticated scanning technologies are increasingly shaping our capacity to visualize the way the **brain is “wired.” This has shed new light on the vulnerability of brain development to environmental...**
influences — it is more so than we ever suspected (Guy, 1997, p. 6). While heredity and genes do play a role, the subtle interplay between genes and the environment means that the developing brain of a fetus is susceptible to damage from environmental factors ranging from maternal malnutrition, drug abuse, toxic substances (alcohol and environmental tobacco smoke), metals, and chemicals (pesticides) to viral infections. (Health Canada 1999: 187, emphasis added)

In another example, the endocrine system is described as a biological pathway impacting physical and mental health outcomes, because “a poor response to challenges” leads to hormone levels that hinder proper body functioning and increases risk for poor health outcomes, and “recent observations have created a better understanding of the mind-body relationship and of how the development of competence and coping skills in early life can influence a wide variety of causes of death in adult life, including suicide, accidents, some cancers and cardiovascular disease” (Keating and Mustard 1996: 9, emphasis added). To explain the mind in the “mind-body relationship,” neuroscience and early brain development was emphasized:

Neuroscience research… is shedding light on how the billions of neurons in the brain cortex differentiate and develop their specific functions in early life. This part of the brain and its close connections are key in sensing, cognitive capacity, behavior, competence and coping skills. Therefore, its development in early life has a profound influence on how well we function in later life. The quality and quantity of the stimulation that undifferentiated neurons receive during such sensitive periods established many of their basic characteristics in later stages of life. (Keating and Mustard 1996: 9)

Elsewhere, other biological pathways were themselves cast in neuro-logical terms. For example, in an excerpt included above, Keating discussed, “research in neuroscience and brain development and research on the neuroimmune system and its responsiveness to early experiences” (Dan Keating, Evidence, Standing Committee on Health, December 5, 1995, emphasis added). This statement, originally shared in a meeting of the House of Commons (HOC) Standing Committee on Health (HEAL), was also included in Strategies for Population Health (Federal/Provincial/Territorial Advisory Committee on Population Health 1994: no page). Here, the immune system is likewise cast as a neuro-biological pathway.

The neuro-biological pathway between early experience and later outcomes likewise meant that parenting affected children’s development because it affected child brain development.
These neurons undergo most of their differentiation as the brain develops during the late stages in utero and during the early years of life. It appears to be difficult in later life to overcome neural function defects that result from poor stimulation in early life. The quality of the social environments in which children are brought up—especially through interaction with peers and adults—is a major influence on the quality of stimulation in early life and, therefore, on competence and coping skills in later life. (Keating and Mustard 1996: 9)

Similarly, A National Children’s Agenda: Developing a Shared Vision noted that, “[i]n this period [prenatal to eighteen months], the ‘basic sculpting’ of the child's brain takes place, and children are both most dependent on, and vulnerable to, their caregivers,” and then goes on to explain that “more complex cognitive emotional and behavioural abilities” were made possible by the “brain pathways” that result from this sculpting (Federal/Provincial/Territorial Council of Ministers on Social Policy Renewal 1999a: 34, emphasis added). In a final example, intimate parenting experiences such as breastfeeding and reading to a toddler seem beneficial because of the effect they have on the brain itself:

A young child's brain develops through stimulation of the sensing pathways (e.g. seeing, hearing, touching, smelling, tasting) from early experiences. A mother breastfeeding her baby or a father reading to a toddler on his lap are both providing essential experiences for brain development. This early nurturing during critical periods of brain development not only affects the parts of the brain that control vision and other senses, it influences the neural cross-connections to other parts of the brain that influence arousal, emotional regulation and behaviour. A child who misses positive stimulation or is subject to chronic stress in the first years of life may have difficulty overcoming a bad early start. (McCain and Mustard 1999: 7, emphasis added)

The excerpts presented thus far, drawn from multiple sources across several years, paint a representative picture of how the developing brain was represented as a biological pathway between various early inputs (i.e., social environment, physical environment, and genetics) and long-term outcomes in the life of an individual.

However, the neuro-logical model also conveyed the idea that the developing brain served as a biological pathway between individual life trajectories and population patterns. As discussed above, “the full story of human development” told through the neuro-logical conceptual model also included “the population patterns arising from individual life courses,” and “the impact of changing social and economic structures on... population indicators and on societal functions”
over time (Keating and Mustard 1996: 8). Knowledge of early brain development mattered because population outcomes mattered. This connection was clear in *Growing Up In Canada*, which provided one of the earlier examples of the neuro-logical model in national policy discourse (Human Resources Development Canada and Statistics Canada: 1996). Here data collection through the NLSCY was presented as “an essential element for building a learning society in Canada” (Keating and Mustard 1996: 7) because it would permit monitoring human development outcomes at “critical periods in early development” (Keating and Mustard 1996: 11). In addition to making the case that such data would be useful in the context of emerging neuro-scientific knowledge, Keating and Mustard explained the connection to population outcomes throughout their introduction to *Growing Up In Canada*:

> [W]e identified two dominant issues facing countries like Canada during this period of profound social and economic change: to build the new kind of economy that can create wealth from ideas; and, during a period of profound economic change with diminished resources, to sustain a healthy social environment that is best for human development. A key component of our ability to meet these two challenges is to ensure that our human resources—population health, coping, competence and well-being—are adequately supported. (Keating and Mustard 1996: 7)

In light of the increasing evidence about the important effects of early childhood on an individual’s competence, coping skills, and health and well-being as an adult, it is important to examine what, if anything, can be done to reduce the risks of poor early development in inadequate social and family environments. (Keating and Mustard 1996: 9)

Because families with young children are particularly vulnerable in periods of rapid social and economic change, we must factor in these critical or sensitive periods in early life. To the extent that social, economic and demographic changes increase developmental risk factors, particularly in early childhood, the long-term consequences for a population’s human resources may be severe and very expensive in both human and economic terms. (Keating and Mustard 1996: 11)

The intricacies of the developing brain played an important role in setting national social policy. This was also reflected in the fact that *A National Children’s Agenda: Developing a Shared Vision*, which was a very short booklet intended to share and solicit input on the emerging vision for a children’s agenda, found it relevant to discuss brain wiring (see Federal/Provincial/Territorial Council of Ministers on Social Policy Renewal 1999a: 34). The spotlight on neurosculpting and its policy importance was not restricted to reports focused on
childhood per se. References to brain development and sculpting scattered throughout *Toward a Healthy Future: Second Report on the Health of Canadians* (Federal/Provincial/Territorial Advisory Committee on Population Health 1999c) demonstrated that understanding population health required understanding early brain development. For example:

**In this first stage, the basic “sculpting” of a child’s brain takes place** and children are most dependent on their parents and caregivers. Pre-birth factors such as maternal nutrition and the use of alcohol and tobacco during pregnancy can **permanently influence a child’s development**. After birth, an infant’s relationship with caregivers has an **important influence on how connections are made among the brain cells**. These connections may affect a child’s immediate and future cognitive, emotional and behavioural development. (Federal/Provincial/Territorial Advisory Committee on Population Health 1999b: 75, emphasis added).

The neuro-logical account reflected in policy discourse identified brain wiring as a biological pathway that could account for long-term cognitive, behavioural, and social-emotional outcomes in individual lives as well as in the population. It also accounted for the relationship between individual trajectories and the population as a whole. In the next section, I discuss how specific early years of brain wiring were identified as a critical period.

### 6.1.3 Early Development as Critical Stage of Human Development

The discussion thus far has also begun to introduce a second key theme running through the neuro-logical account: that the first three to six years of life are a “critical period” in brain development. Here, the construct of critical periods was borrowed from developmental psychology rather than from “new” neuroscience. In fact, the idea of critical periods has a long history in developmental psychology. A definition drawn from that field explains that, “critical periods are marked by a biological onset, the rapid learning of some specialized function or ability, and a biologically timed closure. The acquisition of a special function or ability is seen as indispensable to development and often facilitates other changes that occur later. Failure to acquire the critical ability at the proper time also implies both that it cannot be acquired later on and that the individual will be, to some extent, developmentally impaired” (Green and Piel 2002: 50).

As defined through developmental psychology, the construct of critical periods conveyed several ideas that were carried into the neuro-logical framework. First, development of some milestones is limited to a specific window of time. Failure to develop a function or ability during a critical period would result in permanent impairment of that function/ability. Second, critical
periods are early in development. Third, some aspects of development cannot occur until other developmental milestones have been attained. This is a core idea of developmentalism more generally. Fourth, failure to develop a function or ability during a critical period also means that other aspects of development may therefore be hindered.

In the neuro-logical model, the idea of critical periods functioned to attach the basic ideas of early, time-critical, progressive, and determinative development to early childhood in the policy context. The following evidence shared by Mustard is characteristic of how these ideas were applied:

…basically you only have eight sensing pathways, and they are the pathways through which love, nurturing, and everything else help form the connections in the brain. **The critical period for these connections to form is in the first six years of life, particularly the first three**, and this includes the late *in utero* period…. they learned in experiments on cats that if you block the signals passing from the eye to this part of the brain in the animal at birth of the kitten, the connections will not form in this part of the brain for the animal to see in his brain what the eye sees. When they release the block on the signals going from the eye to the brain when the animal reaches maturity, the **stimuli coming in at this late stage cannot cause the wiring to occur. So in effect the animal is deficient in his capacity** to see what the eye sees. **We're reasonably comfortable that all sensing pathways develop through the same critical, sensitive periods of wiring.** (Standing Committee on Human Resources Development and the Status of Persons with Disabilities June 11, 1998, emphasis added)

Here, the ideas underlying critical periods were attached to the understanding that brain wiring was the biological basis, or pathway, for cause and effect. If early brain wiring did not go well during the critical stage, the brain would be “physically different” (Human Resources Development Canada 1999: 74) and subsequent development would be hindered.

The neuro-logical model utilized animal sensory deprivation studies to make a strong case for early development as a critical stage, however it simultaneously extended the application of critical periods far beyond the evidence cited. This is apparent in the excerpt above in two ways: by applying critical periods to all aspects of development; and by extending the specificity of a critical period to a broader, more vague period of time. The first way in which the developmental psychology construct of critical periods was extended can be seen in the passage above, in which Mustard expressed “reasonable comfort” that all sensing pathways are subject to the same
mechanism of critical periods in brain wiring found in the animal study about vision. This confidence would therefore extend to all “eight sensing pathways” mentioned by Mustard, which were the means “through which love, nurturing, and everything else form the connections in the brain.” The second way the meaning of critical periods was extended was by turning the entirety of early childhood into a critical period, “sensitive period,” or “window of opportunity.” Across policy sources reviewed, it was common to refer to the early years as a critical stage. However, the critical window of time was vague. In some cases, the critical period was cited as “the first six years” or “conception to age 5.” In other instances, the first two or three years were identified as the critical period. In this example from the *Early Years Study*, both conception to six and the first three years are highlighted:

> It is clear that the early years from conception to age six have the most important influence of any time in the life cycle on brain development and subsequent learning, behaviour and health. The effects of early experience, particularly during the first three years, on the wiring and sculpting of the brain's billions of neurons, last a lifetime. (McCain and Mustard 1999: 7, emphasis added)

Both ways of extending the meaning of critical periods is evident in *Investing in Children* (Human Resources Development Canada 1999), which implied that birth to age five was a critical period for *any skill* that is developing during this time:

> Conception to age 5 is a sensitive and critically important time for brain development. Children at this stage develop **language skills** and the **ability to learn**, to **cope with stress**, to **have positive relationships with others**, and to **have a healthy sense of self**” (Human Resources Development Canada 1999: 74, emphasis added).

The reference to “critical periods” and animal sensory deprivation studies invoked scientific evidence to support governmental concern for the early years, however, the research presented did not provide evidence to support the entirety of early childhood being considered a critical period across all developmental domains.

The critical stage was an important concept, alongside the idea of brain development providing an important neuro-biological pathway. While lack of appropriate stimulate in the critical stage could be said to lead to developmental impairment, it was the risk of lost potential that was explicitly invoked. This emphasis on potential is evident in the following passage from *Investing in Children*:
Different aspects of brain development occur at particular periods during these early years. **If these sensitive periods pass without the appropriate stimulation, the child’s full potential is lost.** Children who lack optimum conditions for brain development during this period have **brains that are physically different** from those of children who have had these conditions. (Human Resources Development Canada 1999: 74, emphasis added)

A similar, though more moderate, statement about lost potential was made in Health Canada’s *Healthy Development of Children and Youth*:

There is widespread agreement that the first two years of life represent a ‘window of opportunity’ for providing the stimuli for certain kinds of brain development. **If this crucial period passes, the full potential for certain aspects of brain development may be lost…”** (Health Canada 1999: 105, emphasis added).

Managing the development of potential was a key concern, which entailed understanding the critical stage as an investment phase. I address this theme in the next section.

### 6.2 Optimizing the Development of Human Capital

In this section, I describe how the neuro-logical model provided a means to view the societal value of early childhood development in neuro-scientific terms. Based in the availability of “new” scientific evidence, the early years of brain development were framed as a critical stage and an investment phase for human development, when governments could either invest in—or fail to maximize—future potential for population health, wellbeing, and productivity. The notion of “investment phase” relied on the brain-based “critical stage” for its specific logic. To document this view, I describe two key themes undergirding the neuro-logical approach: childhood as good investment, and the critical stage as investment phase in an economically informed social policy. I conclude that examining the policy conceptualization of early childhood development makes visible that the value and utility of life were increasingly located in brain-based potential, particularly during the early years of development.

#### 6.2.1 Childhood as Having Investment Value

A key theme running through the neuro-logical discourse was a linkage between the opportunity to shape early child development and economic value. Unlike the other themes discussed in this chapter, this theme was central but not exclusive to the emerging framework. A cost-benefit analysis was frequently applied to early childhood in evidence presented to HOC committees and
in policy publications, across the years covered in this study. The following statement reflected many of the components that would be included in such references, including early years spending as a way to reduce future expenditures, early childhood programs as offering a long-term return to society, and childhood as a key focus for population health:

There is a growing body of evidence about what makes people healthy. These are identified as the determinants of health. I know the committee has already had some discussion around them. They include income and social status, social support networks, education, employment and working conditions, physical environments, biology and genetic endowments, personal health practices and coping skills, and healthy child development and health services. Many of the programs under the child development initiative are focused on reinforcement of the determinants of healthy development. They can have a profound and positive long-term effect on the lives of children. These programs offer the best prospect of influencing the long-term future of society. The child development initiative is a good example of population health strategies. Members will recall at main estimates that population health strategies are a main business line for our department. Investment in early intervention strategies for children is known to be one of the best investments society can make. It has been estimated, and we have data from the Senate subcommittee report on poverty in 1991, that the return on investment in such strategies is $7 for every $1 invested. Health Canada has a large and ongoing investment in community-based programs directed at young children, particularly those in disadvantaged conditions, including aboriginal children. (Ms. Kay Stanley, Assistant Deputy Minister, Health Promotion and Programs Branch, Health Canada, Evidence, Standing Committee on Health, 2 November 1995)

While applied to early childhood in particular, it must be noted that it was routine for cost-benefit analyses to be applied throughout policy. In the following instance, the economic calculus was applied to programming surrounding the child and family more holistically. I suggest that this demonstrates that while topics were frequently discussed in economic terms, it cannot be assumed issues were therefore reduced to their economic aspect:

We've outlined a model that consists of three components. The first is family resource centres; the second is child care services, and this is a whole range of child care services; and the third is a home visitation program. We really see these three components of our model linking very closely together and operating from a hub where communities will actually define what these core services look like. We believe this will pay big dividends in the long run. It's not a short-term
investment; it's a long-term investment, and a significant one in terms of the funds we're asking for. But it has all kinds of implications in health, in justice, in social services, and in education, with savings down the road, not to mention the enormous savings in human terms.” (Ms. Lois Yelland, Medical Health Officer, East Health Unit, Vancouver/Richmond Health Board, *Evidence*, Standing Committee on Human Resources and Persons with Disabilities, 11 June 1998)

The claim that money spent on the early years would reduce later cost was frequent, often with an associated calculation of savings on the dollar. Explaining a program that provided nutritional supplementation for mothers and encouraged breastfeeding, one witness explained that, “[i]n our cost benefit studies, we have determined that for each dollar invested, eight dollars are saved” (Ms. Marie-Paule Duquette, Executive Director, Montreal Diet Dispensary, *Evidence*, Standing Committee on Health, 30 May 1996, emphasis added). In *Strategies for Population Health*, it was likewise noted that, “…researchers conclude that over the lifetime of the participants, the preschool program returns to the public $7.16 for each dollar invested” (Federal/Provincial/Territorial Advisory Committee on Population Health 1994: 25, emphasis added).

Future cost was measured in actual financial expenditure, but cost also extended to future social ills and remediation efforts, as evident in the following passages:

Research shows that health-related services for children at risk, such as those provided through our Community Action Program for Children, provide significant savings. It is demonstrated that every dollar invested in the health of a young child can result in a saving of $7 down the road in reduced social expenses, including reduced welfare and criminal justice costs. (Ms. Kay Stanley, Assistant Deputy Minister, Health Programs and Services Branch, Health Canada, *Evidence*, Standing Committee on Health, 4 May 1995, emphasis added)

There's also a great deal of research—I know many of you are aware of this—on what we've learned over the last five to ten years in terms of the importance of early childhood and in terms of laying down the pathways for learning and cognitive development, etc. Investments in early and through childhood really are some of the most successful in terms of what they can achieve. It’s often much more advantageous than trying to undertake remedial action later on. (Ms. Margaret Biggs, Special Adviser to the Assistant Deputy Manager, Strategic Policy, Department of Human Resources Development, *Evidence*, Standing Committee on Human Resources and the Status of Persons with Disabilities, 18 November 1997, emphasis added)
[T]here is a lot of remedial activity that could be prevented if we got in, as it were, ahead of the cycle. The question is, what is the capacity in society to be able to rethink the investment process so that we're perhaps not thinking so much investment into remedial systems—for instance, hospitals, court systems and so forth—and in effect getting ahead of the curve? (Ms. Phyllis Colvin, Director, Health Policy Division, Policy and Consultation Branch, Department of Health, Evidence, Sub-Committee on Children and Youth at Risk, 11 May 1999, emphasis added)

In addition to reducing future costs (whether fiscal, social, or both), investing in early childhood held out the promise of developing precisely the kind of population needed for the future, and would produce “social and economic dividends” for society as a whole:

Children are at the forefront of the government's agenda. Investments in our children today will result in social and economic dividends for all Canadians in the future. (Hon. Pierre Pettigrew, Minister of Human Resources Development, Evidence, Standing Committee on Human Resources and the Status of Persons with Disabilities, 2 December 1997, emphasis added)

Over time, investing in our youngest citizens will also bring major benefits to Canadian society. We will be raising a healthy population that is optimally prepared to deal with the challenges of a global economy and a changing society in the new millennium. (Public Health Agency of Canada [no date], emphasis added)

A recent Canadian economic study calculated that $2 could be gained in future benefits for every dollar invested now in high quality early childhood care and education services, mostly in enhanced child development. You could think of this as the “readiness to learn” benefit. (Ms. Martha Friendly, Coordinator, Childcare Resource and Research Unit, Centre for Urban and Community Studies, University of Toronto, Evidence, Standing Committee on Human Resources and the Status of Persons with Disabilities, 11 June 1998, emphasis added)

The government has stated that the future strength of our society will depend on the investments made in families and children. It is these early investments that provide the greatest potential for achieving a population that is adaptable, resilient and ready to learn throughout life. (Ms. Claire Morris, Deputy Minister, Department of Human Resources Development Canada, Evidence, Standing Committee on Human Resources and the Status of Persons with Disabilities, 23 November 1999, emphasis added)
The population benefit of investing in the early years was a key tenet of the NCA. This was reflected the Governor General’s Speech from the Throne on October 12, 1999, which discussed the NCA, the National Child Benefit, and the developing intergovernmental early childhood agreement that became part of the NCA in 2000:

Because of the changing nature of the world economy, the prospects for a high quality of life in any country will depend - as never before - on having a population that is adaptable, resilient and ready to learn throughout life. The foundation for this is laid in the very early years. No commitment we make today will be more important for the long- term prosperity and well-being of our society than the commitment to invest our efforts in very young children. Parents and families have the primary responsibility for the care of their children. But all of society must work together to ensure that our children develop the abilities to succeed. (Speech from the Throne 1999)

In a policy environment that reflected an economization of social and health policy, it was common for analysis of costs and benefits to accompany a range of policy issues raised. This was true across a wide range of sectors and stakeholders. Simultaneously, the notion that investing in early childhood in particular could produce returns was evident, pointing to the potentiality routinely attached to the figure of the child (see Castañeda 2002). Linking the potentiality of the child to the requisite economic calculus did not preclude variation in the other values and claims attached to this basic pairing. For example, the following passage includes the idea of partnering with community that was not typical of the neuro-logical discourse—in fact, such a focus of community consultation in setting policy priorities was identified by Boyle and Willms as a barrier to basing policy on sound scientific evidence (Boyle and Willms 2002):

In order to build strong communities, children, youth, families and caregivers must be included as issues are being identified, as decisions are being made, and as strategies are being planned. As members of the community, they should be partners in all aspects of development and implementation of policies, interventions, and strategies. Healthy children are the result of healthy communities, communities that work together to challenge issues of isolation, poverty, and inequality. There is a need to adopt a life cycle strategy. There are critical points in the development of children where risks may arise, opportunities be apparent, or interventions be particularly effective. The risks, opportunities, or interventions will hinder or help not only in the present, but can also put children and youth on a pathway to the future, be it positive or negative. We recommend we adopt a strong stand for children.
Society must be mobilized to recognize the needs of children and the gains to be obtained for society if they are given priority. **Well-nourished, healthy, and cherished children are more likely to be healthy and well-integrated adults.**

(Dr. Graham Chance, Chair, Canadian Institute for Child Health, *Evidence*, House of Commons Standing Committee on Health, 5 December 1995, emphasis added)

This section has presented the theme of the child as a good investment in the general economic calculus that was applied in public policy at this time. In the next section, I consider the final key theme running through the neuro-logical model, which was the critical stage was an investment phase in an economically informed social policy.

### 6.2.2 Critical Stage as Investment Phase of Population Development

The idea of critical stage was based in the construct of “critical period” borrowed from developmental psychology, as well as in the notion of “windows of opportunity” for affecting the trajectory of development. This window of opportunity was both individual, and societal. By this, I mean, first, that during the window of opportunity afforded by the critical stage, optimal conditions or remediation could affect the future course of individual development. Second, there was a collective corollary. There was always a portion of the population passing through a critical stage, and this constituted a window of opportunity for societal investment. In several cases, the critical stage was explicitly identified as an “investment phase,”61 as in this passage from *Toward a Healthy Future*:

> Studies in neurobiology have confirmed that when **optimal conditions** for a child’s development are provided in the **investment phase** (between conception and age 5), the **brain develops in a way that has positive outcomes for a lifetime…**” (Federal/Provincial/Territorial Advisory Committee on Population Health 1999b: xii, emphasis added).

The investment phase was specifically tied to critical early years, which provided developmental opportunity not afforded in later stages of development. This distinction is made clear in the following passage from *Healthy Development of Children and the Determinants of Health*, which distinguished an “investment phase” (conception to age 5) from an “enhancement phase”:

> 61 The phrase is also in *Healthy Development of Children and Youth* (Health Canada 1999), which cites the source as Hertzman (1994), and in *Building a National Strategy for Healthy Child Development* (Federal/Provincial/Territorial Advisory Committee on Population Health 1998).
The period between ages 6 and 18 is referred to as “the enhancement phase,” during which physically, socially, intellectually, psychologically and emotionally young people develop their own values, attitudes, beliefs and behaviour patterns and strengthen their sense of identity. **During this phase, intervention may be required** if problems arise (Health Canada 1999: 187, emphasis added)

Any trajectory short of “positive outcomes” would cost in remediation during the “enhancement phase,” which was less effective and efficient than intervention during the “investment phase.” A visual representation of investment and enhancement phases (see Figure 8) was likewise used in *Building a National Strategy for Healthy Child Development* (Federal/Provincial/Territorial Advisory Committee on Population Health 1998: 6).

Figure 8. Illustration of Investment and Enhancement Phases of Human Development

In the neuro-logical model applied within national policy discourse, the *malleability* of the brain during early development constituted the investment opportunity for society:

…the brain's malleability is most dynamic during the period from conception to age three. The symptoms that arise from a shortfall in brain development kick in later on, and we run a whole host of what we call repair shop functions, including health care, that kick in later on with rather sizeable expenditures. In Ontario we do not have substantial expenditure in the pre-school period. So that's a mismatch in our report. (Dr. Fraser Mustard, Founding President and Bell Canada Fellow, Canadian Institute for Advanced Research, *Evidence*, Sub-Committee for Children and Youth at Risk, 4 May 1999, emphasis added)
Figures used in the *Early Years Study* (McCain and Mustard 1999: 122) and *A National Children’s Agenda: Developing a Shared Vision* (Federal/Provincial/Territorial Council of Ministers on Social Policy Renewal 1999a: 2) provided a graphic representation of how the critical stage for brain wiring was significantly mismatched to public expenditure (see Figure 9). These images are also interesting in that both the absence of metrics and the presence of variation between the curves in each version demonstrate that they were meant to be evocative rather than to accurately present scientific evidence.

**Figure 9. Illustration of Mismatch Between Opportunity and Investment**

A number of publications reiterated the message that because governments had focused attention on later childhood, higher education, and health care, they had failed to match investment to the opportunity represented by early brain malleability. The following examples are characteristic:
Traditionally, communities, governments and the private sector have invested more time and money in the later years of childhood than they have in the first six years of life. Given the importance of this stage of development on future health and well-being, and the current time and economic pressures on young parents, we need to make at least the same investment in the early years. (Public Health Agency of Canada [no date], emphasis added)

Investments in the early period of life are as important as investments in education, post secondary education, and health care. (McCain and Mustard 1999: 19)

This is an area policy-makers must turn their attention to. The well-being of our children has its roots in this early developmental stage, particularly in the first three years of life. (Human Resources Development Canada 1999: 109, emphasis added)

Importantly, the suggestion was never made that investment during early brain development was valuable because children could be better than normal. Instead, appropriate and optimal conditions permitted child development to reach its “full potential.” That potential was consistently portrayed as a natural, innate potential. The impression given was that if a developing brain did not encounter negative exposures and detrimental conditions, it would follow its natural course of development. The aggregate result of successful individual development would be a population that had developed its natural capacity to be competitive and functional in the context of 21st century realities. A mismatch of social expenditure to developmental opportunity, by contrast, meant permanent loss of potential at both the individual and population levels, and by implication a prolonged burden caused by over-expenditure during the “enhancement phase” or other equally ineffective remediation phases.

6.2.3 Brain Development as Biological Basis for Human Capital

In many ways, the two themes discussed above made the same point: investing in early childhood pays off for society. Yet these two themes were also distinct insofar as the notion of “investment phase” relied on the brain-based “critical stage” for its specific logic. I do not think this distinction is trivial. Instead, I think the neuro-narrative and evidence that were advanced in national social policy provided a solution to the problem of how to rationalize the investment value of early childhood, utilizing biological and scientific truth. As mentioned in Chapter 5, the Human Resources Development Canada (HRDC) website in 1996 noted that, “it is not enough to know that there are links between early disadvantages and later problems. The precise nature of
these links must be understood…”\footnote{Web archive available at http://web.archive.org/web/19970206194647/http://www.hrdc-drhc.gc.ca/hrdc/corp/stratpol/arbsite/publish/backgr_e.html accessed on April 6, 2015} In the neuro-logical model, brain development was discovered as the biological basis of linkages between early experience and later outcomes, or—in other words—the neuro-biological pathway between human development and human capital development. Based on the research conducted for this thesis, it would be impossible to draw meaningful conclusions about whether this desire for more precise understanding emerged before or in tandem with the means to obtain it. It seems likely in this particular example that the need and the solution were emerging in tandem, since the excerpt goes on to discuss NLSCY data collection, and 1996 analyses of first-cycle of NLSCY data in *Growing up in Canada* (Human Resources Development Canada and Statistics Canada 1996) highlighted the neuro-logical framework. What is clear, however, is that during the 1990s, the emergent neuro-logical truth discourse satisfied an appeal to base governance on precise understanding of the pathway between early experience and later outcomes.

The neuro-logical account found the answer in a process that seems inherently individual: brain development and other processes viewed in neuro-logical terms (e.g., the “neuroimmune” system). However, its application in social policy was for the government of the life of the species body, not the individual. That is, the truth claims about the nature of individual life were deployed in order to regulate life in its aggregate form (the biopolitics of population), not in order to regulate individual bodies (as in anatamo-politics). Brain development seems to have been a potent explanatory model, providing a concept of human development that unified individual and population, economy and health, present and future. Willms called this a “human development view of early life” (Willms 2002: 22), and its unifying capacity was clearly illustrated in diagrams, like the one in Figure 10, that were utilized in neuro-logical accounts. In this diagram from the *Early Years Study: Three Years Later* (McCain and Mustard 2002: 43), early childhood development is shown as connecting to education, health, social capital, and equality, which in turn converge on economic growth. Together, this becomes a “human development” model. In the source cited, the diagram is titled “From ECD [early childhood development] to Human Development.” The unifying potential of the neuro-logical human development view was reflected through several characteristics reflected in the above consideration of key themes. First, it described a biological pathway that could account for both
individual and population levels of human development. Second, it showed how that pathway was a single causal explanation for all manner of (individual and population) outcomes in terms of health, cognitive capacity, social functioning, and productivity. Third, it identified a critical stage that—while a temporary stage in the life of an individual—was a stable window of opportunity in population development, since some portion of the population was always in the critical stage. Fourth, it therefore also showed which stages of early development provided, in the present, the opportunity to invest in order to maximize the return on investment (desired human development outcomes) in the future. The basis for the “formation, growth, accumulation, and improvement of human capital” (Foucault 2008: 229) was thus located in brain development.

The neuro-logical approach to social policy did not call for extra-ordinary development per se. It is more accurate to say that “optimal” development is represented in the neuro-logical model as something that occurs when social-environmental factors don’t impede. The model is more directly calling for efforts to ensure that optimal conditions are provided for the healthy course of brain development. If extra-ordinary measures are called for, they seem to be in work undertaken to gain knowledge of, and act upon, the multiple environments of child development in order to approximate optimal conditions. The neuro-logical account emphasizes the many ill effects that result when the natural course of brain development is hindered. Presumably, if optimal

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63 In Figure 10, “ECD” stands for Early Childhood Development.
conditions are provided, a normal course of brain development will unfold. The investment phase was a critical window for both providing optimal conditions to enable normal potential to develop, and for remediating any diminishment of normal potential that has already accumulated.

6.3 Conclusion

In this chapter, my purpose has been to substantiate my conclusion that in the neuro-logical discourse, governing population vitality meant investing in the potential of the brain to develop to its natural capacity. The neuro-logical model was introduced in the historical context of the shift from health promotion to population health, concerns over the federal deficit, and looming social and economic changes of the 21st century. Matching investment to opportunity would mean investing in the early years of childhood. Although the economic calculus applied to childhood was also typical of social and health policy in general, childhood carried a particular sense of flexibility and potentiality for shaping future population vitality and productivity. There was broad agreement that investing in the early years, in particular, would have the most significant return on investment. The neuro-logical model was unique in that it provided an explanatory model that located the potentiality of childhood directly in the potentiality of brain development. The neuro-logical model served as the “truth discourse about the ‘vital’ character of living human beings” (Rabinow and Rose 2006: 197, emphasis added) and the system of knowledge that “provide[d] cognitive and normative maps that open[ed] up biopolitical spaces and define both subjects and objects of intervention” (Lemke 2011: 119). A set of researchers from medicine, psychology, population health, neuroscience, and economics, who calibrated knowledge from the brain sciences to population policy through the neuro-logical model, served as an “array of authorities considered competent to speak that truth” (Rabinow and Rose 2006: 197, emphasis added). The fact that this constituted authoritative knowledge in this context, as discussed in Chapter 5, is reflected through the rapid and broad uptake of the neuro-logical model.

The neuro-logical model articulated the connection between brain development and population through the concepts of biological pathway, critical period, and investment phase. The developing brain was presented as a biological pathway that could account for how a range of individual experiences and exposures translated into the health, social, and intellectual attributes of a population. However, if the “pathway to the future” was a neuro-biological pathway, it specifically cut a path through a very narrow swath of years. The earliest two to six years were
the critical stage, which offered society a logical, (seemingly) scientifically based investment phase for acting upon the attributes of the population itself. Graphic representations translated evidence into something more rhetorically compelling, which would speak directly to how “new” neuroknowledge could be utilized to govern the population. A learning society would govern by applying the proper economic calculus to population health and productivity, which meant matching investment to opportunity. Opportunity was unambiguously located in the malleability of the developing brain, and its natural capacity for optimal development. The potential of childhood was precisely the innate capacity of the brain to develop to its potential. The close affiliation between the brain and potentiality I identified here resonates with the literature (see Castañeda 2002; Pitts-Taylor 2010; Taussig et al. 2013; see also Martin 2013). In the policy context, neuroscientific explanations continue to be found compelling (Wastell and White 2012; Stooke 2003), authoritative (Cheeseman 2014; Mavarish et al. 2015), and useful (Broer and Pickersgill 2015; Edwards et al. 2015; Lowe et al. 2015a, 2015b; Pitts-Taylor 2010; Stooke 2003). In the case studied here, neuroscience (or at least its translation for policy purposes) seems to have been viewed as all of these: compelling, authoritative, and useful. In this study, I found that this appeal, authority, and utility were attached to the seeming capacity of neuroscience to reveal vital truths to guide human capital investments for a knowledge-based economy and emergent social and economic challenges. What did this truth mean for children whose brains were considered permanently impaired by cognitive and other “disabilities”?

In the next chapter, I address the question of how developmental differences were incorporated in this truth discourse.
Chapter 7:
“Two Categories of Children”: Incorporating Developmental Difference in Neuro-logical Governmentality

As for the focus here, I think, we know it's about “early” and it's about “children”, but the critical point of measurable outcomes, the piece that we are being challenged on, is about development. But immediately you have two categories of children: those with disabilities and those without. (Mr. Rey D. Pagtakhan, Winnipeg North—St. Paul, Lib. Evidence, joint meeting of the Sub-committee on Children and Youth at Risk and the Sub-committee on the Status of Persons with Disabilities, 7 June 2000)

7 Introduction

In this chapter, I describe and analyze the incorporation of developmental differences in the neuro-logical model that undergirded the National Children’s Agenda (NCA). Both official response to the NCA by the disability community and subsequent re-articulations of the neuro-logical model reveal the limits to the discursive inclusion of “disability” in Canada’s agenda in invest in brain development potential during the early years. Although the NCA was actually an initiative to address children who were at-risk and living in poverty, it was publicized as an agenda for all children, and the disability community insisted that all children should mean all children. The fact that the NCA vision utilized this model was not evident until the spring of 1999, when draft vision statements were published and public response was invited. At that time, the disability community raised concerns that the NCA vision excluded children with disabilities. Their conclusion was based on two things: the fact that children with disabilities weren’t explicitly mentioned, and the fact that the conceptual model of child development (and the outcome measures that stemmed from it) positioned disability exclusively as something to be prevented. The absence of children with disabilities was accentuated by the Social Union Framework Agreement (SUFA)’s prioritization of disability and childhood, which helped expose the absence of children with disabilities in each policy priority area. This omission was a continuation of a longstanding division between child- and disability-related policymaking. In response to having this omission challenged, the NCA vision and initiatives under the NCA umbrella were subsequently described in a way that explicitly mentioned the value of including
children of all abilities. While the NCA and Early Childhood Development Agreement (ECDA) added inclusive language, there is little indication that the underlying conceptual model was altered.

To demonstrate the limits of incorporating children with disabilities in the NCA, I convey the story of how members of the disability community, policy makers, and proponents of the neurological model grappled with the meaning of disability. I draw out the theoretical implications of this story by using the typology of incorporation/exteriorization (see Chapter 2) to diagram how, through the process of grappling with the issue of disability inclusion, developmental differences were shuffled and ordered in relation to one another and in relation to normality. Through an analysis of what could not be admitted into the neurological model, I further develop the argument that the possibilities for incorporating children with disabilities into the NCA were molded by the neurological model undergirding it. The disability community sought progressive inclusion, and argued against differential inclusion of vaguely defined “children with disabilities.” The neurological model focused on inclusion of “vulnerable children” (see section 7.2 for definition and discussion) through normalization, and accounted for the inclusion of children with permanently disabling impairment with inclusion through assistance. These forms of inclusion reflect distinct rationales and modes of incorporation, as described in Chapter 2. In brief, **progressive inclusion** acknowledges the right of each to seek remedy for discrimination that inhibits incorporation. This form of incorporation, however, can only occur on the basis of an underlying equality among claimants, though this could be shared citizenship or claim to common humanity/human rights. **Inclusion through normalization** attempts to recuperate difference to normality. Under biopolitics, normalization is a limitless process of generating norms, identifying deviations from norms, and applying an incorporative logic that presses difference toward alignment with normality (see Figure 2). **Inclusion through assistance** holds sway among differences that are deviations, but are “useless” and by implication not inherently worthy of recuperation to normality. Under neoliberal governmentality, social assistance is offered to the extent—and only to the extent—that integration through assistance benefits the social system as a whole (see Chapter 2 section 2.2). Finally, **differentiated inclusion** comes into play when differences are seen as inherently different from normality and not normalizable. These differences do not rise to the level of profound threat, therefore they are not “exteriorized” as other, but can be incorporated through separate identity, space, or forms of management.
The main body of this chapter is organized into four sections. In the first, I describe the initial disability community response to the NCA, which challenged the exclusion of children with disabilities. In the second section, I move forward two years to relay the story of vulnerable children, as told by the neuro-logical community through a key publication. This story took the disability response into account, and identified a place for “children with disabilities.” In the third section, I circle back to the disability community to describe its alternate diagram, and describe three key values that varied in compatibility with the neuro-logical diagram. In the fourth and final section, I explore the story of brain-based potential, and what it cannot include.

7.1 The Disability Response to the NCA

Release of the NCA vision documents initiated a period for public response, which provided the context for the disability community to voice concern about the positioning of disability in the developing NCA. Non-governmental disability organizations and policy think tanks played the role of synthesizing community input, extracting key policy implications, and conveying these to the federal and intergovernmental policymaking community. This was conveyed through reports, position statements, and evidence presented to House of Commons (HOC) committees (see Battle and Torjman 2000; Evidence, joint meeting of the Sub-committee on Children and Youth at Risk and the Sub-committee on the Status of Persons with Disabilities, 7 June 2000; Roeher Institute 2000, 2002; Torjman 1999; Valentine 2001). In each case, a small set of voices presented and represented the voices of a self-selected collection of families within limited space and time. The Canadian Association for Community Living (CACL) solicited input from families of children with disabilities in different parts of the country. Concerns raised, while surely not representative of all families raising children with disabilities in Canada, exposed a range of barriers to including children with disabilities in the NCA’s policy discourse. The disability community framed these barriers in relation to a broader disability response, and then carried this into the public domain through such means as publications and evidence to HOC committees. Critiques of the NCA from a disability standpoint were also offered by the Roeher Institute, a non-governmental policy think tank with a focus on inclusion and equality for persons with intellectual and other disabilities.

Elaborating on consultations with families, the CACL’s Director of Policy and Programs shared the fear that the NCA’s developing vision positioned disability solely as something to eliminate:
[W]e brought forward what the national children's agenda, at least at that point, in
draft form, looked like. The response we had from families was, “This is really
excluding our children.” So we began to make the case that not only were
children with disabilities not named, identified, or mentioned in the strategy,
but when they were, it was in the form of: how do you actually prevent a
child from being born with a disability? It was not in the more generic sense of
how you actually develop a children's agenda that would be inclusive of all kids,
and those with a disability in particular. (Ms. Connie Laurin-Bowie, Director,
Policy and Programs, Canadian Association for Community Living, Evidence,
joint meeting of the Sub-committee on Children and Youth at Risk and the Sub-
committee on the Status of Persons with Disabilities, 7 June 2000, emphasis added)

These voices from the disability community emphasized two barriers to the inclusion of children
with disabilities: that they were not present or evident in the policy vision, and that the
conceptual model of child development excluded them. This implied that not only were children
with disabilities absent from the draft agenda, but its conceptual foundations did not provide for
their inclusion within the NCA vision.

While public response elevated awareness of disability as one of the omissions of the draft NCA
vision, the absence of children with disabilities was not new to the NCA, or to SUFA. National
policymaking on children and disability followed parallel tracks, with little direct attention to
children with disabilities (see also Prince 2002, 2004). SUFA actually provided an opportunity to
accentuate any policy absence of children with disabilities, because childhood and disability
childhood and disability had been adopted as its only two policy priorities. While a range of
specific policy initiatives were pursued under the SUFA umbrella over time, all were framed as
pertaining to either childhood or disability. For each of these areas in turn, the Sub-committee on
Children and Youth at Risk (SCYR) and Sub-committee on the Status of Persons with Disability
(SSPD) served as the House of Commons Standing Committee on Human Resources
Development and the Status of Persons with Disabilities (HRPD) subcommittees soliciting,
reviewing, and compiling evidence to inform policy directions. In the SCYR, little attention was
given to children with “disabilities,” insofar as disability referred to significant physical,
cognitive, or other developmental impairments. In the November 23, 1999 report on the
subcommittee in the HRPD, no specific mention was made of children with disabilities. In the
SSPD, attention was focused on adults, employment, eligibility for disability benefits, and
Employment Insurance, which was likewise reflected in the SSPD’s report no its work to the
HRPD on December 2, 1999. In reality, the policy foci under SUFA were, as these
subcommittees reflected, children in poverty, where the concern was with the “human resources” impact of early impoverishment, and adults with disability, where the disability was defined in relation to program eligibility.

Consideration of children with disabilities was largely absent in national policy discourse. Even in disability policy, the presence of children’s issues relied on precariously few voices, and once included there was no assurance that action would be pursued, as assistance to address special needs was susceptible to being sidelined in the face of fiscal constraints. This reality was conveyed through an experience with policy development relayed by a representative from the disability community:

When I heard about your two subcommittees holding a joint meeting, I must say it won my heart. To this point, I had felt that the Sub-Committee on the Status of Persons with Disabilities had ignored children, and the Sub-Committee on Children and Youth at Risk had ignored disabilities.

Briefly, to elaborate on that, of course there was the seven-year national strategy for the integration of persons with disabilities, but that didn't say anything about kids at all. Now there's the In Unison agreement. I had a chance to participate in the hearings on the current strategy, and frankly I felt quite isolated, since I seemed to be the only person back in 1995 addressing issues concerned with very young children with disabilities and their families. It seemed that attention was being focused on supports for employment of adults with disabilities on rehabilitation, and just possibly on transition to employment. It wasn't that I felt patronized or really left out by my listeners; it was just that the issues regarding very young children with disabilities and impacts on their families weren't even on the agenda at that time.

Just to prove that point, as I recently re-read one of the documents related to the development of the In Unison strategy, I was surprised and really pleased to find there was a statement in there about young kids. It wasn't perfect, I thought. It left out family economic well-being, but it did say the things we wanted said about being in there from the beginning, and being in child care programs with everybody else.

I wondered who else had testified about young children with disabilities. So I went to the back of the book to find out who it was—and it was me. I laughed a little bit, but it brought me back to earth, realizing that the issue of very young children and their families had received little or no attention from the subcommittee at that time....
Back in 1993 when the social security reform hearings were held...[t]he committee's recommendation did include one about children with disabilities: that a further portion of federal child care financing be allocated for the needs of children with disabilities, so that they may take advantage of opportunities for full participation in the community. But as you know, the debt and deficit crisis of 1995 effectively ended any progressive social reform of this type for the next several years, until now. (Ms. Sharon Hope Irwin, Executive Director, SpeciaLink, National Centre for Child Care Inclusion, *Evidence*, joint meeting of the Sub-committee on Children and Youth at Risk and the Sub-committee on the Status of Persons with Disabilities, 7 June 2000, emphasis added)

A joint meeting of the SCYR and SSPD was held in June 2000 to provide both subcommittees the occasion to consider the NCA in light of children with disabilities. In addition to subcommittee members, the meeting included witnesses representing Health Canada’s Population Health Directorate (including the Program Officer for the Childhood and Youth Division) and Human Resource Development Canada’s sections on Children’s Policy and Social Policy Development. Four witnesses provided non-governmental perspectives: Sherri Torjman, Vice-President of the Caledon Institute of Social Policy; Connie Laurin-Bowie, Director of Policy and Programs with the CACL; Sharon Hope Irwin, Executive Director of SpeciaLink, National Centre for Child Care Inclusion; and Dawn Walker, Executive Director of the Canadian Institute of Child Health. The Chair of the SSPD, who co-chaired the joint meeting with the Chair of the SCYR, launched the meeting by stating,

> As in so many of these things, *there's the what we want* and the *how we're going to get there*, and I hope we will be able to share all of that this afternoon.... I think we felt very strongly that we didn't want children left out of a disabilities plan and we didn't want children with disabilities, or families with disabilities, left out of a children's agenda” (The Co-Chair, Ms. Carolyn Bennett, St. Paul's, Lib., *Evidence*, joint meeting of the Sub-committee on Children and Youth at Risk and the Sub-committee on the Status of Persons with Disabilities, 7 June 2000, emphasis added).

The Co-Chairs invited members to make progress on the issues during the remainder of the summer in preparation for presentations by the subcommittees in the winter of 2000. As it turned out, HRPD business through the remainder of session (the last HRPD meeting was October 22, 2000) and at the outset of the next session (the first HRPD meeting was February 20, 2001) focused on post-secondary education, student loans, and a bill addressing Employment
Insurance, so the subcommittees’ report on the joint work to HRPD was not provided until April 26, 2001. During that meeting, there seemed to be agreement with the value of inclusion for people with disabilities and of inclusion of children with disabilities in the NCA. Several members of Parliament in attendance also identified the issue as personally relevant, as they had children with disabilities themselves. Nonetheless, little time was dedicated to discussing how to include children with disabilities in the NCA vision, nor how programs under the NCA umbrella might affect children with disabilities and their families. One of the few discussions of an issue specific to children with disabilities was on the matter of indicators and measures. It was brief, and highlighted the possible limits of the work that had been carried out through the joint meeting because of turnover in the subcommittees:

**Mr. John Godfrey:** …concerning recommendations to the main committee, our work has just begun as a subcommittee, or begun again, and we have pretty much a new cast of players. I think only Ms. Davies and I were on the previous committee. So part of the task of the committee right now is recovering its institutional memory so we can remind ourselves where we've come from and where we're going…. (Mr. John Godfrey, Don Valley West, Lib. Evidence, Standing Committee on Human Resources and the Status of Persons with Disabilities, 26 April 2001)

The question of how children with disability were to be reflected in the NCA, and in associated indicators and measures, did not receive sustained attention. While children with disabilities were not discussed in any great depth in the sub-committee reports to the HRPD, written descriptions of the NCA and the ECDA did begin to mention them. One example of this was in the report on public response to the NCA, which was published on the social union initiative website under the title “Public Dialogue on the National Children's Agenda—Developing a Shared Vision.” This report highlighted six public responses to the NCA vision documents, one of which was, “[t]he vision must embrace all children, including those with disabilities and special needs, newcomers to Canada, children in official language minority communities and children living in urban, rural and remote communities.” The ECDA, which was an agreement on early childhood investments reached between First Ministers at their September 2000

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meeting, included the statement that, “[e]arly childhood development programs and services should be inclusive of children with different abilities.”

However, the concerns raised by the disability community went beyond this basic presence. In particular, they expressed the sentiment that whether disability was present, and how it was represented, gestured toward whether and how people with disabilities would be included in whatever stemmed from the policy. Torjman expressed this dual concern:

To be honest with you, at one point we were very worried that children with disabilities were being left out of the children's agenda. For one thing, they weren't mentioned on the children's agenda in anything we had heard or seen. And second, some of the language that was used in some of the descriptive documents appeared to be exclusionary, even though it was not deliberately so. We were quite concerned that it could have been exclusionary by virtue of the fact that it discussed certain things, such as outcome-based measures, that could leave out children. (Ms. Sherri Torjman, Vice-President, Caledon Institute of Social Policy, Evidence, joint meeting of the Sub-committee on Children and Youth at Risk and the Sub-committee on the Status of Persons with Disabilities, 7 June 2000, emphasis added)

Mentioning the inclusion of children of all abilities worked to address the first concern: omission. However, these simple changes in vision statements did not address the underlying, neuro-logical conceptual model used in the NCA. Here, the meanings attributed to children, child development, and disability were understood to have significant impacts on later experiences of inclusion and exclusion. Defining child development in a way that did not reflect the realities of children with disabilities themselves was another form of omission that mattered a great deal. Laurin-Bowie articulated this idea in 1998 evidence to the HRPD, the year before the NCA vision documents were released:

We know from years and years of experience, as does this committee and those of you around it who participated in other forums, that how you define the issue determines who gets in and what you do. We know, on the issue of disability, that if you set it aside and add it on at the end of the day, the system you build will not be inclusive, no matter what your intentions are… I’d like to reflect on that in terms of the way disability has been defined at the federal level and then speak specifically about children. When it comes down to

operationalizing it and putting it in place in the form of policy, **what it actually means is many people get defined out before the program is even developed, particularly people who have a disability, and even more so people who have an intellectual disability.** (Ms. Connie Laurin-Bowie, Coordinator Government Liaison, Canadian Association for Community Living, *Evidence*, Standing Committee on Human Rights and the Status of Persons with Disabilities, 11 June 1998)

In this section, I have described the initial disability response to the NCA, which, according to the disability community, excluded children with disabilities because it failed to mention them and because it adopted a conceptual model that seemed exclusionary. In the next section, I move forward to 2002 to relay the story of vulnerable children, as told by the neuro-logical community through a key publication. I draw on the typology of incorporation/exteriorization to consider how developmental difference was split between vulnerability, a normalizable developmental deficit caused by failure to provide optimal conditions, and disability, a permanent ‘impairment’ that was differentiated from normalizable difference.

### 7.2 Neuro-logical Incorporation of Developmental Differences

Following the period of public response on the NCA, proponents of the neuro-logical model continued to articulate its constructs and implications through policy publications, edited collections of papers, and peer-reviewed articles. In some of these, the place of disability was discussed very explicitly, often with reference to the critiques that the NCA excluded children with disabilities (see for example McCain and Mustard 2002; McCain, Mustard, and Shanker 2007; McCain, Mustard, and McCuaig 2011; Willms 2002). Because these sources were able to take the disability critique into account, they are particularly interesting in providing a clear picture of how the neuro-logical model intended to position disability in relation to other developmental differences. In fact, Willms (2002) makes explicit mention of the disability critique when articulating his vision of “vulnerability,” how this is distinct from disability, and how each should be situated in relation to governing and investing in early human development.

I advance the argument that the diagram offered by the neuro-logical model reflects two qualitatively different kinds of developmental difference, and that each kind was purposively linked to a different mode of social incorporation (for a full consideration of modes of incorporation, see Chapter 2). First, “vulnerable children” had a marked, but mutable, negative deviation from normal development caused by exposure to insufficient conditions for optimal
brain development. Second, some children were recognized to have relatively permanent disabilities, impairments, or “mental or physical handicaps” that increased the need for ongoing support, services, or financial assistance (Willms 2002: 364). Although the disability community and families saw exclusion of children with disabilities when they looked at the draft NCA, the neuro-logical approach actually provided for the social incorporation of both vulnerable children and those with disabilities. However, the proper mode of social incorporation for vulnerable children was through normalization, while the appropriate mode of social inclusion for the permanently impaired was through assistance. Moreover, proper government of the human population and economic investments, as demonstrated below, required prioritizing normalization. It was deemed necessary that social assistance for special needs like disabilities be secondary and subordinate to efforts to invest in and normalize developmental potential. Vulnerability and permanent impairments were incorporated differently (see discussion of incorporation/exteriorization in Chapter 2), with vulnerability aligned to inclusion through normalization (a way to recuperate normality), and permanent impairment aligned to inclusion through assistance (a weak form of minimal social assistance for the benefit of the social system as a whole).

In the following sections, I relay the story of each kind of developmental difference as told through publications by proponents of the neuro-logical model.

7.2.1 Vulnerable Children

In 2002, “vulnerability” was offered as a construct to capture the idea that social-economic factors could hinder development, causing deficits in human capital formation during the early years (Willms 2002). The construct was evident as early as 1996 (see Keating and Mustard 1996; see also Federal/Provincial/Territorial Council of Ministers on Social Policy Renewal 1999a), but was developed in depth in Vulnerable Children: Findings from Canada’s National Longitudinal Survey of Children and Youth (Willms 2002), an edited collection analyzing first-cycle NLSCY data and published jointly by Human Resources Development Canada and the University of Alberta. This account explicitly connected vulnerability to the neuro-logical truth discourse (see for example Willms 2002: 21, 106, 181, 331, 363-364). Willms introduced Vulnerable Children by stating that, “we can begin with the empirical observation that a child has a significant problem in some developmental domain. We have decided to refer to children who are experiencing an episode of poor developmental outcomes as vulnerable” (Willms 2002:
3, emphasis in original). Vulnerability is the presence of a measurable difference from the norm; specifically, it is applied to the bottom tenth percentile of a population (Willms 2002). One notable aspect of this definition is that “vulnerable” is applied to children who are measured to already show “poor” developmental outcomes. Given Willms’ careful attention to construct development, the choice of a word that likewise conveys susceptibility seems likely intentional. This supposition is supported by the descriptions in this same text of child development as susceptible to social-environmental risks. Although vulnerability was explicitly a significant negative deviation from normal development, I argue that what truly distinguished “vulnerability” were three key attributes. Namely, “vulnerability” had to be a socially caused, mutable, and biopolitically relevant developmental difference.

First, Willms cast vulnerability as a socially caused difference. Vulnerability was explicitly, and specifically, related to the range of family, school, or community factors that could negatively affect developmental outcomes. While the physical environment and a range of genetic and other causes of developmental difference were also acknowledged, they were either positioned as a context for development or they were represented as providing a biological endowment to be shaped by social factors through the biological mechanism of brain wiring. Vulnerability was directly linked to the neuro-logical model in this as well as subsequent publications (see for example McCain and Mustard 2002). The primary focus on certain social environments was evident in illustrations from Building a National Strategy for Healthy Development (Federal/Provincial/Territorial Advisory Committee on Population Health 1998: 4) and Developmental Health and the Wealth of Nations (Keating and Hertzman 1999: 30), which showed the individual trajectory of human development moving through several levels or domains of social environment (see Figure 11). In the top diagram, the life trajectory of the developing human being crossed through four key social environments across the life span: family, childcare and school, neighborhood, and the social-economic environment of society as a whole. The physical, ecological environment was set as a backdrop for this passage through social environments. In the second diagram, the human life cycle is shown passing through three nested social systems: the national socio-economic environment, civil society. Child development was “susceptible” and “exposed” to the social factors that it encountered along this developmental trajectory (Willms 2002: 45).
Second, vulnerability was by definition mutable difference. Vulnerability was meant to imply that circumstances could “improve through children’s own efforts and with the support of their families and others in their community,” (Willms 2002: 46) and accomplishing this improvement was precisely the point. In the *Early Years Study: Three Years Later*, McCain and Mustard acknowledged the ongoing reality of childhood disability, but redirected attention to the more pervasive reality of vulnerability, which is amenable to change:
Doug Willms has combined measures of ECD from the NLSCY… into a “vulnerability index”. This shows that vulnerable children live in families in all socioeconomic sectors, not just in low income families (poverty). As stated in the Early Years Study, this information has major policy ramifications that point to the need for ECD and parenting programs available for all families with young children, not just those who have identified special needs or are considered at-risk by the usual criteria. (McCain and Mustard 2002: 16)

Finally, vulnerability implied biopolitically relevant developmental differences. Vulnerability involved differences that mattered to the government of population vitality and productivity. In his overview of vulnerability, Willms rationalized that, “[s]ocieties derive economic and social benefits from investing in people” (2002: 369), and social-economic policy needed to prioritize the pervasive problem of poor, but alterable, developmental outcomes. He explained:

> We are entering a new era in Canadian social policy. At all levels of government, there is a growing awareness that social policy and economic policy are inextricably linked: improving the quality of life of a nation’s citizens requires sustained economic growth, but this in turn requires investments in human and social capital. The ‘human capital’ of a society—embodied in the knowledge, competencies and health of its members (Alexander, 1997: Becker, 1993)—requires investments in education, health, and nutrition. (Willms 2002: 359)

Analysis of cycle 1 data from the National Longitudinal Study of Children and Youth (NLSCY) suggested that 1 in every 4 Canadian children was vulnerable from the neuro-logical point of view, effected by “behavioural, emotional, or psychological disturbances … sufficiently serious to warrant concern for their present functioning and future developmental health” (Willms 2002: 18). Identifying the prevalence and distribution of vulnerability was important precisely because it located areas of need and opportunity to recuperate human capital potential. In Figure 12, I provide a visual representation of the prevalence of vulnerable children as a subset of full set of all children possessing the capacity to develop to full neuro-developmental potential. This is the beginning of a diagram of normality and difference, to which I will return in the next section.
Interestingly, the first analyses from the NLSCY found that vulnerability was spread equally throughout communities across the country. McCain and Mustard highlighted the fact that while a greater proportion of children in lower socio-economic status (SES) families were vulnerable than in higher-SES families, the greater quantity of vulnerable children was in middle-income families (McCain and Mustard 2002). In the neuro-logical view, it followed that intervention in human development and vulnerability must be universal rather than targeted (see McCain and Mustard 2002, Willms 2002). Although proponents of the neuro-logical approach to social policy made clear statements that children with disabilities could, and when appropriate should, participate alongside other children, the proper government of human development was not a matter of targeted intervention for the most developmentally or socio-economically challenged. Investments in developmental potential should be made universally, wherever developmental potential could be found. In 2002, McCain and Mustard made this point in the following critique of Ontario’s Early Years Centres, which purported to follow recommendations from the 1999 Early Years Study:

The Early Years Centres seem to have a focus on targeted and so called at-risk families. This tends to exclude the middle class where the largest number of vulnerable children in the 0 to 6 age group are located (more than 160,000 children). This group has needs and initiatives that exclude them and weakens the commitment of society to invest in ECD. (McCain and Mustard 2002: 33)
Interventions to address the needs of children with diagnosed, specific disabilities can improve the quality of life for these children but these targeted programs will not have an impact on the large number of vulnerable children. (McCain and Mustard 2002: 20)

In this section, I have considered how one form of developmental difference—vulnerability—actually served as a partial foundation for the neuro-logical approach to social policy. The other part of the foundation was developmental potential. In Chapter 6, I showed that the neuro-logical model identified potential for optimal brain development as the best social investment. In this section, the (specifically) social-economic diminishment of that potential is identified as a problem in need of collective response.

In the next section, I turn my attention to how the neuro-logical model positioned the developmental impairments that it distinguished from vulnerability.

7.2.2 Incorporating Disability

My discussion of the concept of vulnerability thus far demonstrates that children with “disabilities” were not altogether missing from the neuro-logical model. In this case, what I mean by “disability” is the set of “special needs” and “handicaps” that the model separated from vulnerability. As discussed in the previous section, the primary distinction in neuro-logical reasoning was between mutable and permanent developmental deficits, therefore I use “permanent impairment” to refer specifically to the set of “disabilities,” “special needs,” and “handicaps” that neuro-logic set apart from vulnerability. I continue to use the term “disability” when discussing the disability response.

In the closing chapters of Vulnerable Children, Willms elaborated on the proper place of permanent impairment when he directly addressed the critique that disability had been excluded in the NCA (Willms 2002). He advanced the position that the primary, proper purpose of social policy was to invest in early human development while attempting to reduce vulnerability. Special needs were recognized in the sense that some individuals would have permanent impairments. Willms also conveyed that it was acceptable for society to adopt some responsibility for assisting those in the most need, including the permanently impaired. As reiterated by other proponents of the neuro-logical framework, such disabling impairments merited “specific interventions” (McCain and Mustard 2002: 18), which could be “worthy” programs for governments to fund (Coffey and McCain 2002: 19). Willms acknowledged that
development of “children with mental or physical handicaps… depends critically on sustained, continuous effort to support their education and social development throughout early childhood and the schooling years” (Willms 2002: 364). “From a social policy perspective, this direction allows us to recast the… debate as a call for action: we need to ensure that all children have the best possible start, while ensuring that those who have chronic difficulties, or who encounter difficult experiences later in life, receive the support they need” (Willms 2002: 365). In this view, universal investment could raise the waters for all, while targeted services could be left to meet the extraordinary needs of the few.

It was critical, however, that there be no confusion between vulnerability (as the ubiquitous social diminishment of developmental potential that could be recuperated through social investment) and disability (as the permanent impairment that merited societal assistance to directed toward individual need). Attending to disability needs posed no problem as long as it was recognized as a specific and targeted service delivery, and was situated in a governmentally appropriate place to fill this role. The worthiness of assistance did not alter the stance that social policy should be designed to optimize human developmental potential, and the provision of assistance must not disadvantage provision of human development investments. Assessing Ontario’s use of funds transferred through the Early Childhood Development Initiative (ECDI) under the NCA, Coffey and McCain found fault with allocation of a portion to disability-specific needs and services. For Coffey and McCain, the investment in early childhood should follow the universality proposed by the neuro-logical model, while the proper place for disability services was under health. “Ontario earmarked $20.7-million of its share for the prevention of neural tube defects, infant hearing and autism. While worthy, these programs are more properly covered under health, not child development” (Coffey and McCain 2002: 19).

McCain and Mustard elaborated on the nature of this ‘error’ in the Early Years Study: Three Years Later:

The provincial government has now bundled together the Early Years Centres ($30 million), Early Years Challenge Fund ($15.4 million), and the remaining $69 million for 2001 - 2002 allocation from the federal government agreement on ECD, into the provincial Early Years Plan. This Plan includes allocations of about 30 individual projects and services that are mostly existing services provided by the Ministry of Health and Ministry of Community, Family, and Children’s Services for children at-risk and those with very special needs. Some of the programs are for children with very special needs (e.g. autism, developmental
disabilities, sensing defects). Many of these important programs belong in the Ministry of Health as part of our health care system. The scattered activities and streaming of new financial resources into targeted services and existing programs fragments and does not build community capacity for ECD and parenting programs or equality of opportunity for the children of all families. (McCain and Mustard 2002: 31-32)

Again, there was no suggestion that such “very special needs” should be overlooked by society or by government. Services and programs addressing special needs were “important.” What was also important, however, was that universal and targeted programs be placed in proper relation to one another and to funding structures. In this particular case, it was suggested that programs for special needs could be properly positioned in the health care system. I would argue that the critical aspect was not that disability be a matter or health care, per se, but rather that the capacity to universally develop human capital not be undermined. Moreover, it was critical that funding allocated to addressing “special” needs not be misleadingly counted as investments in early childhood, reflecting once again that investing in developmental potential was fundamentally distinct from providing services to the permanently impaired.

The centrality of universal investment in developmental potential, wherever it was to found, is well illustrated in Willms’ discussion of social exclusion and its ills. Willms opened the discussion by making a strong case for the importance of the issue:

> Taken together, the findings in this volume convey a powerful message for social policy: we need to tackle social exclusion head on. The term “social exclusion” (or its opposite, “social inclusion”) has roots in the movement towards integrating children with physical and mental handicaps, but it has recently become popular in Europe to encompass people who are marginalized from society for whatever reason. I am using it in this general sense, but am concerned in particular with ways that certain children, especially those who are vulnerable, are segregated in certain neighbourhoods and schools, or among classes within schools. (Willms 2002: 372)

Willms went on to advance the position that those experiencing poor developmental outcomes should not be segregated. For Willms, segregation denoted the separation, clustering, grouping, or other artificial or social-economically mediated distribution of disadvantaged development. If vulnerability were left where it occurred, it would be equally dispersed in the population and across communities. However, “powerful social, economic, and political forces…move us
inexorably towards a more socially exclusive society for our children” (Willms 2002: 373).

Although Willms couched this discussion in terms of the “need to tackle social exclusion head on,” his stated rationale had less to do with social participation than with the impact of segregation on the proper government of human development potential. Segregation that diminished societal capacity for investment occurred when a school “did not enroll a representative proportion of children with learning disabilities, mental and physical handicaps, and behaviour disorders” or when the affluent clustered in one neighborhood. This left the socially, economically, or developmentally disadvantaged to disproportionately cluster elsewhere. The over-representation of vulnerable children in some settings would strain educators and leave vulnerable children with fewer “children who served as role models for acceptable behaviour and engagement in academic pursuits” (Willms 2002: 373). Willms described how disproportionate clustering of vulnerable children in specific classrooms, schools, or neighborhoods strained the capacity of the social context to foster development for all children. While Willms finds “social exclusion” intolerable, he argues against it based on the fact that pursuing inclusion instead can diminish vulnerability.

While vulnerability was carefully distinguished from permanent impairment, it was thought that these could co-occur in the same child. When vulnerability occurred in conjunction with disability, the same opportunities for normalization of “vulnerable” development seemed to obtain. Addressing any mutable developmental deficits would help reduce the burden and drain caused by the need for long-term services and supports:

A small proportion of vulnerable children have specific identified disabilities that are tied to their genetic inheritance. Others have identified congenital disabilities that are related to their prenatal or earliest environment perhaps combined with particular genetic predispositions. For example, approximately one in every 500 children is estimated to be autistic. This means approximately 1,800 preschool children in Ontario. There will always be a small proportion of children with identified specific special needs who will require specific interventions but the vast majority of the vulnerabilities we see in Ontario’s children can be reduced through environments that promote optimal ECD. Helping these vulnerable children through specialized interventions later on in the school system is difficult and expensive. It is important that children who do have specific special needs not only benefit from specialized interventions early in life but should, wherever possible, also be when appropriate included in an ECD parenting program. In other words, good ECD and parenting programs help all families…. A rough
estimate of the cost for special education programs for vulnerable children and children with special needs in Ontario is about $1.2 billion per year. Investment in quality ECD and parenting programs could reduce the number of vulnerable children entering the school system and reduce the need for special education programs for the vulnerable children. (McCain and Mustard 2002: 18)

In Figure 13, I expand Figure 12 to include the positioning of permanent impairment in relation to developmental potential, expanding my reading of the diagram being offered by the neurological model.

![Diagram]

**Figure 13. Permanent Impairment in Relation to Investment and Inclusion**

As in Figure 12, vulnerable children comprise 25% of the population of children. Vulnerable children are contained within the box denoting normal developmental potential, which I mean to refer to the model of child development described in Chapter 6. I use the irregular outline that contains permanent impairment, vulnerable children, and normal developmental potential to designate the full set of all children (the age range included would depend on the policy document, since there is variation in the ages covered in different cases). All children were
included in the neuro-logical diagram. Along the top, investment is aligned to this normal developmental potential (see Chapter 6). Permanent impairment is clustered in its own distinct box. The vertical lines marking vulnerability and the horizontal lines marking permanent impairment reflect the distinction between these two kinds of developmental difference in the neuro-logical model. A portion, but not all, of permanent impairment co-occurs with vulnerability. Vertical and horizontal lines remain, but overlap. Along the bottom, I indicate that vulnerability was targeted for normalization in order to recuperate potential diminished by social-economic factors. I indicate that permanent impairment was aligned with social incorporation through assistance. Further reflecting the neuro-logical account, vulnerability is not intended to include permanent impairment per se, therefore a portion of permanent impairment is shown extending outside the boundaries of vulnerability.

In this section, I have provided an overview of how the neuro-logical model incorporated children with disabilities. The overriding characteristic of this incorporation was that developmental deficits associated with social vulnerability were distinguished from permanent impairments. While any vulnerability could be included through normalization, permanent impairment was discussed in terms of inclusion through assistance, which is the minimal assistance offered through social assistance programs. Because neuro-logical social policy was meant to govern through investing in human capital development, it was imperative that this assistance not displace investment in developmental potential. Moreover, mingling assistance with investment by directing some ECDI moneys to assist with permanent impairment was thought to diminish the early child development investment. Children with permanent impairment could readily and properly be incorporated in the neuro-logical approach to social policy through conditional inclusion, but this inclusion was outside the limits or boundary of normal developmental potential, because there was a firm, definitional distinction between permanent impairment and impaired potential, which could be recuperated.

In the next section, I circle back to the initial disability response to the NCA in order to tell the story of how the disability community delineated and arranged developmental differences and governmental priorities to provide an alternate diagram. By returning to the disability response after exploring the neuro-logical diagram, my intention is to make it easy to see what was compatible and what was incompatible with the neuro-logical model.
7.3 Inclusion, Value, and Difference through the Disability Lens

In this section, I describe several key stories that I discern in the disability response to the NCA. These stories begin to highlight the contours of an alternative to the neuro-logical diagram, which is rooted in a vision of inclusion, human value, and cognitive and bodily difference as viewed through a disability lens. First, I describe how representatives of the disability community laid claim to progressive inclusion for children with disabilities and their families. Next, I describe how the disability community offered a diagram in which all children have equal value. This diagram took shape through three key themes. First, unlike the neuro-logical model, which emphasized categories that deviated from normal developmental potential, this alternate vision described shared citizenship and shared humanity as bases for emphasizing the sameness of all children, regardless of ability. Second, need for differentiated support was described as being applicable to all children. Third, rooting value to the child was offered as an alternative to rooting value in specific developmental outcomes. In a final storyline, the disability community suggested that measurement should be directed at systems held accountable for including all children and families, as opposed to measuring children’s development against normative ideals of child development.

7.3.1 Laying Claim to Progressive Inclusion

According to the disability response, thinking about children in terms of the progress they could make or their potential as a human capital investment drew attention away from inclusion. In all of the sources that applied a disability lens to the NCA or to alternate visions for a children’s agenda, inclusion was a primary, foundational value upon which to build policy. In this case, inclusion meant participation in the range of spaces and activities that were accessed by those without disabilities. Moreover, inclusion meant participation not only by children with disabilities, but also by their family members. Irwin, Executive Director of the SpecialLink National Centre for Child Care Inclusion, relayed a story of participation in childcare, which reflects the unique meaning of participation or inclusion for each child, as well as the multiple values that routinely stand in the way of participation:

Let me give you a quick little story on that one. Our day care centre…had been including children with disabilities for a long time, and although we worked very hard to help other Cape Breton child care centres include kids with disabilities, we usually had a long waiting list for such spaces. When a space came up, we'd hold a committee meeting about who would get it. I was the director of the centre, and
my policy was “next is first”, meaning the next child on the list gets in. But there were so many kids waiting for those spaces.

Anyway, we had a committee. We had an accountant and a school board member, along with me and the resource teacher, a group of therapists, and a lot of parents. The accountant had another idea. He asked, what child would benefit most from this integrated placement?

Several people answered. The school board member said, you've told us that kids who spend three years in your program usually go into less intensive school placements. The kids who would have gone into TMH classes—that's what they called those classes then—usually go into the next level up, which they call the MH classes, and the kids who would usually have gone into the EMH classes usually go in the auxiliary classes, and the kids who would have gone into the auxiliary classes often go into the regular classes. That saves the school board money and brings the kids closer to the mainstream, which is what you say you care about. Which of the kids on this waiting list fit this picture?

The various therapists spoke about different children and how much input of their therapies would make a difference in terms of the kids getting ready for less intensive, less specialized, less costly placements in school.

I knew where I stood. If a decision was made based on anticipated outcome rather than “next is first”, I'd quit. But we're a democratic group, and discussion triumphed. I didn't have to threaten to quit, and sense prevailed.

So Sonia was accepted. Sonia was multiply handicapped, one of those profoundly involved kids of whom they say, “Does she really know she's there?” or “Does she have any consciousness of her surroundings?”

Sonia's parents weren't looking for miracles from us. They didn't expect us even to learn how to tube-feed or to do most of the physiotherapy exercises that kept her from developing scoliosis and further spasticity. As her dad said, we just want to feel that for the mornings, Sonia is a child among other children, with their games and their laughter and their songs. And so that's where she was. (Ms. Sharon Hope Irwin, Executive Director, SpeciaLink, National Centre for Child Care Inclusion, Evidence, joint meeting of the Sub-committee on Children and Youth at Risk and the Sub-committee on the Status of Persons with Disabilities, 7 June 2000)

Although Sonia’s father did not mention the impact of her childcare placement on his own participation in employment, caregiver full participation was likewise a concern for advocates sharing a disability lens on child policy. Children were viewed as part of a family system, such
that family participation and wellbeing were discussed as often as child participation and wellbeing. In another passage from the joint SCYR-SSPD meeting, Irwin shares another story that speaks to this issue:

I tell you this story because I want you to look at children with disabilities as kids first, and then to look at what other supports they need to participate equally in our society. I also want you to think about those young children within the context of their families, where lack of services such as child care and sensitive employment policies all too often make it impossible for their parents to remain employed. In a society where almost all parents need employment income to provide adequately for their families, parents of children with disabilities often end up in a special welfare ghetto, labelled “parents of kids with disabilities”.

(Ms. Sharon Hope Irwin, Executive Director, SpeciaLink, National Centre for Child Care Inclusion, Evidence, joint meeting of the Sub-committee on Children and Youth at Risk and the Sub-committee on the Status of Persons with Disabilities, 7 June 2000)

Parents who provided input through CACL community conversations likewise expressed diminished access to employment, childcare, and a safe school environment for their children. The resources and services that were typically available to families were less accessible when raising a child with a disability. This finding was relayed to the joint committee by Laurin-Bowie:

Once we made our point [to policymakers] and had a few people unhappy with us about what exactly we meant when we said [children with disabilities] were excluded [in the NCA vision], we realized we had some homework to do in terms of actually going back and talking to families and to parents and saying “What are the real issues and what would an inclusive agenda look like for your families and for your children?” ….

What we heard from families was incredibly compelling. They started in every place by saying “What we want for our kids is exactly what every other parent wants for their kids. We want them to be safe, we want them to be loved and happy and accepted, we want our families to have an adequate income that they can support their children with, and we want a family life that's like everybody else's family life.” They want to function, and they don't want the disability a particular child has to define the child and in turn the family, and in turn their place in the community. They expressed those feelings very compellingly in a number of different ways and identified different things that stood in the way of getting there….
They really expressed to us that while every family had a series of struggles in terms of either being in the labour market or meeting the needs of their kids and making their children's lives what they wanted them to be, what they dealt with that was very different from most other families was that they were the only ones taking full responsibility for the lives of their children.

That meant that while most families could trust that an education system would be there for their kids, these families couldn't even trust that their children would be safe in a school and not be abused. They couldn't trust that a child care centre would have the kinds of supports available for their children. It wasn't that they wanted separate safe places for their children; they wanted people to share responsibility with, as other parents have the opportunity to do, so other systems available for kids would take on some of the onus they were bearing solely.

That responsibility took the form of financial issues that have been alluded to in terms of one of the policy implications. It was also around coordinating numerous kinds of systems, advocating within both the generic and the disability-specific systems, and coordinating that kind of support....

Parents who have children with disabilities need the same kind of support as other parents. I read recently, in a Down's syndrome society newsletter, an article about breastfeeding a child with Down's syndrome. It was really quite astounding to me that families who had children with Down's syndrome would not get access—and this was clear in the article—to the kind of support a new mom would get for breastfeeding a child without a disability. Yet the child with Down's syndrome would likely benefit more than many other children from that kind of nurturing from their mother. (Ms. Connie Laurin-Bowie, Director, Policy and Programs, Canadian Association for Community Living, Evidence, joint meeting of the Sub-committee on Children and Youth at Risk and the Sub-committee on the Status of Persons with Disabilities, 7 June 2000)

The pervasive experience of lack of access to general resources, services, and programs intended for children and parents meant that achieving access to these was an important building block in any approach to social inclusion. From the disability lens, children’s policy should be built to enable participation, should not preclude participation, and should not enact differentiated inclusion. This had direct implications for the programming to be placed under the NCA, as reflected in this comment by Laurin-Bowie:

So what does it mean?.... I think Sherri's right. You need a statement right at the outset about what you mean by inclusion of children with a disability, not
just including children with a disability, not how we want a separate parenting centre for the issues relating to parenting a child with a disability. If you're doing parenting centres, we want to make sure they're accessible to families who have a child with a disability. (Ms. Connie Laurin-Bowie, Director, Policy and Programs, Canadian Association for Community Living, Evidence, joint meeting of the Sub-committee on Children and Youth at Risk and the Sub-committee on the Status of Persons with Disabilities, 7 June 2000)

Agenda for Action: Policy Directions for Children with Disabilities and Families (Roeher Institute 2000), likewise addressed the common experience of lack of access to social institutions and services intended for everyone. Again speaking directly to the draft NCA vision, this publication made an explicit effort to tie participation back to the framework that valued children for their potential to contribute to society. Specifically, it situated lack of participation as a “threat” to “potential” and children’s “future contributions:”

Children with disabilities face physical and social barriers to inclusion in schools, recreation and the life of their communities. Social isolation often begins at a very young age for children with disabilities.

As a result, their developmental potential is threatened. The future contributions they can make, with all the value that can bring, is placed at risk. (Roeher Institute 2000:7)

Yet even in this case, the foundational goal was inclusion and participation, not investment in human capital development, as reflected in a passage from this publication that pressed for the NCA:

…to make the principle of inclusion the prime value in the process for selecting issues for the Centres of Excellence. This would ensure that the voices of those who celebrate the lives of people with disabilities are heard and that all people with disabilities will be included and valued as full citizens of our communities. (Roeher Institute 2000: 12)

Overall, the disability community sought a form of progressive, social inclusion that would remove the barriers to equitable access. Differentiated inclusion, which offered similar but separate, was to be avoided. Here, I am using differentiated inclusion in the sense offered by Ravaud and Stiker (2001) and discussed in detail in Chapter 2. In this usage, differentiated inclusion refers to the incorporative mode of exclusion through segregation. By contrast, the disability response offered a vision of universalized differentiation with individualized
accommodation (see discussion of this point in section 7.3.2.3). In the latter case, difference was a universal trait of all children, which makes it very akin to Davis’ (2013) description of “diversity,” in which we are all the same because we are all different. This is fundamentally distinct from “differentiated inclusion,” which identifies a set of differences that cannot be normalized. Differentiated inclusion comes into play when differences are seen as inherently different from normality, and thus require a separate identity, space, or forms of management. At the same time, these differences do not rise to the level of profound threat, which would require expulsion and exteriorization rather than incorporation.

In this section, I have summarized how progressive inclusion and participation served as the foundational purpose for policy through the disability lens, which stood in contrast to the foundational purpose of investing in human capital formation in the neuro-logical framework. In the next section, I describe how the disability community offered a model in which all children have equal value.

7.3.2 Value all Children

In various ways, the disability response conveyed the conviction that all children should be valued by virtue of being children, irrespective of differences in developmental outcomes. This conviction incorporated a number of ideas, including the sameness of all children, the shared difference of all children, and honoring every child’s potential without attributing hierarchies of value to developmental differences. In some cases—particularly in the evidence shared at the joint meeting of the SCYR-SSPD—these ideas were explicitly juxtaposed to core principles of the neuro-logical model. In the following excerpt, Irwin, Executive Director of the SpeciaLink National Centre for Child Care Inclusion, challenged the view of children as reduced to future workers. To Irwin, this application of an “calculus,” particularly when applied to disability, would mean overlooking the “inherent value” of all children, “as children:”

While we focus on normative outcome measures and evaluation, and design policies and funding streams that give us the biggest bang for the buck… we have to think clearly about two things: first, that our ability to figure out what to measure and how to measure is in its infancy; and secondly, if we get involved in that kind of disability calculus, we're likely to miss some points about the inherent value of all our children as children, not just as potential wage earners. (Ms. Sharon Hope Irwin, Executive Director, SpeciaLink, National Centre for Child Care Inclusion, Evidence, joint meeting of the Sub-committee on
In this view, locating value in the potential for future productivity cannot permit a full valuation of “all our children as children.” In the following sections, I consider how this theme of valuing all children carried ideas of sameness, difference, and potential, each of which had implications for an inclusive children’s agenda or child policy.

7.3.2.1 Claiming Equal Status as Citizens and Human Beings

The idea that all children were “the same,” and should be valued equally, was pervasive in HOC evidence shared by those representing the disability community, as well as in publications that challenged the absence of children with disabilities in national social policy discourse. In some cases, the “sameness” of all children was invoked very explicitly on the basis of a shared claim to citizenship or human rights. In other words, children were all the same in terms of being citizens, and children were all the same in terms of being human children. For example, this idea of sameness was invoked by a parliamentary member of the SSPD who identified as a parent of a child with a disability:

…what parents ask for is a commitment that this government will guard the human rights of their children. I see that the directions we are moving in will not in fact be guarding our children's human rights.

Of course they're all the same—your child, my child. All children, with whatever abilities, have the same citizenship. I have great regard for our need as a national government to set the standards and set them high. How do we do that? (Ms. Wendy Lill, Dartmouth, NDP, Evidence, joint meeting of the Sub-committee on Children and Youth at Risk and the Sub-committee on the Status of Persons with Disabilities, 7 June 2000, emphasis added)

While not always explicitly discussed in terms of either human rights or citizenship, the idea of sameness was a pervasive undercurrent. Moreover, the idea was consistently invoked as an appropriate basis for policy development. In other words, policy visions should be founded on the assumption of sameness instead of differentiation. In many respects, an ideal of sameness seemed to provide a productive foundation for inclusion. Referencing her previous work at Health Canada, Walker shed light on the implications of building policy on an assumption of sameness rather than difference. Specifically, she discussed the shift in Health Canada from viewing disability as a difference from normal health to viewing children with disabilities as
Within normal. For her, including children with disabilities “in the normal discussion about children” led to a model of health that stood in stark contrast to the “care and treatment” model usually available to those with disabilities, demonstrating how a difference in founding assumptions could lead to starkly different policy and programmatic implications:

I raised the question a number of times about what we were doing about children with disabilities. At that time, children with disabilities were thought of in terms of care and treatment, so that, yes, it was a provincial responsibility. There was no particular focal point within Health Canada about children with disabilities for quite a number of years.

It’s as we’ve evolved our way of thinking: that children with disabilities have a normal life, which includes population health. All of a sudden we began to include children in the normal discussion about children. That is certainly what I have seen evolve, even in terms of the departmental participation. But it certainly is something that I've seen happen over the years: the movement from care and treatment into inclusion. In terms of areas of responsibility, I too have been thinking about this, both in and out of government, for a long period of time….

The model I would have preferred to see it in, in terms of children with disabilities, is within a wellness model where all children are. (Ms. Dawn Walker, Executive Director, Canadian Institute of Child Health, Evidence, joint meeting of the Sub-committee on Children and Youth at Risk and the Sub-committee on the Status of Persons with Disabilities, 7 June 2000, bold emphasis added, italics in original)

While value was attributed equally to all children, value was discussed in many ways, including use of terms such as “inherent worth,” “basic human dignity,” “unique potential,” and “unique capabilities.” Sameness and value provided a foundation for policy that equalized valuation of all life developmental trajectories, inviting an investment in each child’s unique potential. This can be seen in several passage excerpted from the Caledon Institute’s A Proposed Model Framework for Early Childhood Development Services Within the National Children’s Agenda (Battle and Torjman 2000):

This agreement embodies a clear vision in which all Canadian children are valued and encouraged to develop their unique physical, emotional, intellectual, spiritual and creative potential….

We recognize children for their inherent worth and value them for who they are as much as who they will become….
To ensure that children achieve physical, emotional and social development, and acquire language, literacy and numeracy skills to the best of their unique capabilities. (Battle and Torjman 2000: 2-3)

A similar point was made in the Roeher Institute’s response paper to the NCA, Agenda for Action: Policy Directions for Children with Disabilities and Families:

All stakeholders—the voluntary sector, family organization, family organizations, governments, employers, community agencies—need to commit to the following guidelines as a starting point for building an inclusive National Children’s Agenda:

- Guidance by a principle of the equal value of all children, regardless of genetic characteristics, gender, ethnicity, race, religion, nationality, language, physical or intellectual disability is paramount…. (Roeher Institute 2000: 10)

Beginning from the assumption of the equal value of all children led to policy visions and language that were notably distinct from the neuro-logical framework. Because value preceded differentiation in developmental trajectories, differences were a unique expression of existing value and worth, whereas the neuro-logical model placed value first in the capacity of “normal” brain development to reach its natural potential, which was valued because it was inherently optimized to meet economic and societal needs.

7.3.2.2 Differentiate Support, Don’t Differentiate Value

While all children were the same in their inherent worth, the specificity of the disability experience also seemed to demand some type of differentiation to accomplish meaningful inclusion. At the most concrete level of programs and services in the community, inclusion of many children required “extra support,” “special training,” and “funds,” as reflected in this comment by Torjman at the joint SCYR-SSPD meeting:

My remarks, though, will focus upon the inclusion component of the early childhood development system, to ensure we can include children with disabilities in whatever is set up. Whatever negotiations happen to take place and whatever actually comes about as a result of these discussions, we want to ensure children with disabilities are included…. In any system of early childhood development, as I said, regardless of what it looks like at the end of the day, a fundamental principle of that development is inclusion. We want to try to ensure children with disabilities can be included in any program, in any service, in
any support that is set up. **And as I said, that includes physical inclusion as well as programmatic inclusion.** To do that, very often we need special training for people working in the system; we may need access to extra people, just to provide extra support; and we also need funds that would help in terms of **physical accessibility.** (Ms. Sherri Torjman, Vice-President, Caledon Institute of Social Policy, *Evidence*, joint meeting of the Sub-committee on Children and Youth at Risk and the Sub-committee on the Status of Persons with Disabilities, 7 June 2000, emphasis added)

In this view, for a social system (whether at the scale of a neighborhood, community, or nation) to be inclusive, it must differentiate in order to meet the individual’s capacity and need. This differentiation was, however, also applicable to all children. Difference and differentiation were normal. Therefore, children with disabilities were positioned within ‘the normal conversation’ from the outset, because the normal conversation included difference from the outset. Once difference was made “normal,” individualized supports could be provided. The following passage is likewise drawn from Torjman’s contributions at the joint SCYR-SSPD meeting:

I just want to put forward very briefly what that might mean, because in our view, **every child is special and every child requires some form of individualization,** but there are some children who need some extra assistance in terms of being able to communicate, learn, participate, or carry out some of the activities of daily living. It's those children about whom we're concerned in this discussion. **They may need a technical aid or a piece of equipment, or they may need some extra assistance.** Sometimes that's specialized assistance; sometimes it's not. Sometimes it's just extra help available. **They may need some form of environmental accommodation, and by that I mean both physical premises and programs.** So that's really what we're looking at.

**An inclusive system though also includes special programs. It doesn't mean we don't have special programs where appropriate.** Certain provinces in fact have special programs for children with developmental disabilities—with hearing impairments, for example. **If they choose to support those kinds of extra programs, that certainly would be part of our vision of a broad and inclusive system.** (Ms. Sherri Torjman, Vice-President, Caledon Institute of Social Policy, *Evidence*, joint meeting of the Sub-committee on Children and Youth at Risk and the Sub-committee on the Status of Persons with Disabilities, 7 June 2000)

Just as every child had the same inherent worth and human dignity, every child was “special” and required “individualization” to meet his or her unique needs. This view reflects both
similarities to and distinctions from the neuro-logical framework. For neuro-logic, universality was important because it was deemed the best way to grow and recuperate normal developmental potential. Through the disability lens, universality meant something profoundly different. Specifically, it meant that all children were different (i.e., in a form that closely matches the notion of “diversity”; see Davis 2013), and it valued universalized differentiation with individualized accommodation for all children.

7.3.2.3 Value the Child, Not Desirable Developmental Outcomes

Valuing all children for who they were did not imply not valuing what they could become. This potentiality, however, honored individual capacity instead of privileging normative benchmarks. In this view, investing in development did not imply an investment in the potential to match a norm, but instead was an investment in each individual’s trajectory, regardless of its relationship to normative measures. This is reflected in the following excerpt from Toward An Inclusive Approach To Monitoring Investments And Outcomes In Child Development And Learning:

A community that is inclusive of persons with disabilities would acknowledge that there is no such thing as a ‘perfect’ person, but rather that all persons have dignity, are unique, and have their own unique potential, gifts and abilities. It would value this diversity and seek to ensure that the health and development of every person is encouraged and supported according to their individual needs and circumstances. (Roeher 2002: 14-15)

Despite variations in the perspectives offered by different witnesses or think tanks, valuing children for their inherent worth seemed always to preclude attaching value to differences in developmental potential or future contributions. This is not to say, however, that authors applying the disability lens did not value supporting each individual’s potential to develop. Instead, there is a distinction to be made between, first, including children of all abilities while attaching value to developmental outcomes, and second, attaching value to the child independent of outcomes while simultaneously including all children in any investment in child development. In the former case, a politics of difference preceded inclusion. This is characteristic of the neuro-logical model. In the latter case, equal valuation precluded a politics of difference based on developmental differences. This view is very evident in both Toward An Inclusive Approach To Monitoring Investments And Outcomes In Child Development And Learning (Roeher 2002) and Enabling Citizenship: Full Inclusion of Children with Disabilities and their Parents (Valentine 2001). Both of these documents are interesting examples of this, precisely because each placed
ample attention on investing in the development, potential, and capabilities of children with disabilities. In addition, *Toward an Inclusive Approach* cited the brain science of early development, while *Enabling Citizenship* mentioned the foundational importance of the early years. This excerpt from *Enabling Citizenship* provides one example:

There is a growing concern that when measured against such standards, children with disabilities will come to be seen as less worthy of investments needed to maximize their developmental potential and to support their full inclusion in families, schools, and community life.

There are two main reasons that we should be concerned about the well-being of all of Canada’s children, including those with disabilities. First, we should be concerned if we value children in their own right and care about the kind of life they experience, no matter their individual characteristics and abilities. Second, we should be concerned if we value what children will become as parents, workers, friends, and participants in their own communities. These two reasons for concern are interconnected. If children do not achieve their potential in childhood, and enjoy their childhood for what it is, there is far less chance that they will achieve and demonstrate their capabilities in adulthood. Therefore, they will neither fully experience the joys of childhood nor enjoy a high quality of life as adults in their homes, families, communities or workplaces. Their capacity to achieve full citizenship may not be realized, which will affect the quality of life experienced by them, their families, and society as a whole. (Valentine 2001: viii)

In the preceding sections, I have summarized the theme of valuing all children for their inherent worth, which reflected viewing all children as the same with respect to value, while quite different and unique in their capabilities. This principle of sameness through difference created an equalization that seemed to have distinct implications for generating policy. Valuing all children did not preclude valuing and supporting growth, development, and potential, but it did mean that value was attached to the child rather than to the developmental outcome. In this way, an investment in every child’s unique potential could be pursued equally, because value preceded a politics of difference that sorted children according to the potential or worthiness of their developmental differences.

In the next section, I consider the third story shared through the disability response, which entailed measuring systems instead of children. This was an inversion of the neuro-logical model that reflected the desire to hold social system accountable for inclusion instead of holding children accountable for developing potential.
7.3.3 Measure Systems, Not Children

Taken together, the primacy of valuing diverse developmental trajectories and participation meant that, for the disability community, measuring systems was more important to meaningful outcomes than was measuring children’s development. When measurement of children’s development was endorsed from the disability perspective, it was to support individual children’s development to their unique capabilities and potential. Conversely, measurement of children against normative standards for achieving alignment with those norms was seen as precluding the inclusion of many with disabilities. These ideas about measuring children are reflected in the following contributions from disability advocates during the joint SCYR-SSPD meeting:

In 1998, when the school readiness discussions were held, I flew up to Ottawa from Cape Breton—I actually took two planes—with Paul Young, the former president of the self-advocate group, People First. Paul asked me where I was going. I told him I was going to speak in Ottawa to a committee concerned with school readiness. Paul then said “Sharon, you have to tell them that some of us will never be ready.” That's another message I really want to bring you. (Ms. Sharon Hope Irwin, Executive Director, SpeciaLink, National Centre for Child Care Inclusion, Evidence, joint meeting of the Sub-committee on Children and Youth at Risk and the Sub-committee on the Status of Persons with Disabilities, 7 June 2000, emphasis added)

What does that mean in terms of measuring the success of children? We think we understand what we mean, but there is room for a real discussion about benchmarks for kids. There should be individual benchmarks on the improvement of individual children. (Ms. Connie Laurin-Bowie, Director, Policy and Programs, Canadian Association for Community Living, Evidence, joint meeting of the Sub-committee on Children and Youth at Risk and the Sub-committee on the Status of Persons with Disabilities, 7 June 2000, emphasis added)

Such an individualized model for measuring development could be coupled with a “monitoring and accountability” system, but in keeping with the priority discussed above, inclusion of all children preceded and guided the purpose of monitoring. This idea is reflected well in the following excerpt from Toward An Inclusive Approach To Monitoring Investments And Outcomes In Child Development And Learning:

a wide body of research and literature… makes clear that all children develop according to their own unique paths. This is an essential starting point for a
monitoring and accountability framework that is inclusive of all children. Research suggests that we can establish an approach to monitoring where we value and recognize all paths equally – a path where one child learns to walk, and another where a child learns to move by using a wheel chair…(Roeher 2002: 2, emphasis added)

This report went on to note that, “research has shown that it is not the disability that prevents the participation; rather a lack of needed supports is the key factor preventing full participation” (Roeher 2002: 3). It therefore followed that it was important to measure environments. This idea is described in the following evidence from Laurin-Bowie:

The issue of measurement is about what we want to achieve for kids. I fundamentally disagree that what we should measure is a child's future capacity to work or to have an economic existence. What we believe as a movement of families is that what we should have is contributing members of society in a whole series of different ways and roles, with different aptitudes, in different capacities, and in different ways. The only way to design a measurement of whether you're doing that effectively for kids is to find... I think the early childhood educators know how to do this. They're doing it. What they measure in a child care environment is not whether this child meets a certain milestone. What they measure is whether they, as a child care environment, have met the needs of a child. So the measurement flips back onto the system and not onto the child. (Ms. Connie Laurin-Bowie, Director, Policy and Programs, Canadian Association for Community Living, Evidence, joint meeting of the Sub-committee on Children and Youth at Risk and the Sub-committee on the Status of Persons with Disabilities, 7 June 2000, ellipses in original, bold emphasis added)

When “measurement flips back onto the system,” it was possible to hold environments accountable for being inclusive. This contrasted sharply with the neuro-logical model, which measured child development in order to hold communities accountable for securing and growing human capital development.

In going back to look at the policy implications of all of those messages, the most important thing for us is that it's not simply enough to state that the children's agenda will include kids with disabilities. It's our joint responsibility, we feel, to figure out what we mean when we say it's going to be inclusive of all kids, and what the implications of that will be in designing things like accountability mechanisms. So if we want to have systems that are effective for all kids, we need to design accountability mechanisms.
One is that whatever becomes possible through federal-provincial processes and this Parliament, **have a lens for families that have children with disabilities within them.** Also, have a process where we can work together to explore them, because clearly no one fully understands what the implications will be until we actually roll out where the investments will go. (Ms. Connie Laurin-Bowie, Director, Policy and Programs, Canadian Association for Community Living, *Evidence*, joint meeting of the Sub-committee on Children and Youth at Risk and the Sub-committee on the Status of Persons with Disabilities, 7 June 2000, emphasis added)

From this perspective, the best outcomes could only be assured through inclusive policy. Inclusion enabled children with disabilities to be part of the policy initiatives in the first place, but also introduced unique “developmental opportunities” for all children:

> In developing a framework we can also draw on an extensive body of experience from parents and professionals that speaks to the value of children with disabilities. Accounts of inclusive family life, of inclusive child care, and of inclusive education point to **a now voluminous knowledge on how to make sure all children are included, valued and free to grow up with dignity.** Research also shows that, **within inclusive environments, developmental opportunities result both for children with disabilities, and for their peers** who learn about respect for difference, new forms of communication, empathy, friendship and solidarity across difference. (Roeher 2002: 2, emphasis added)

Measurement, monitoring, and accountability were themes in the disability response to the NCA, but these were applied to systems in order to assess their inclusion of all children. Measurement of child development might be appropriate if it enabled benchmarking of individual development in a way that supported developing to one’s unique capabilities and potential. However, measuring children’s development against normative standards was challenged, because it defined out any child who did not possess the means to achieve the norm. Across this and the previous two sections (on sameness through difference and community participation), my overall purpose has been to illustrate several key principles from the disability response to the NCA that were incommensurate with the neuro-logical framework. While language about development, potential, investment, measurement, monitoring, and accountability might point toward a common conversation, I have attempted to show how several key principles and goals undergirding the disability perspective on a children’s agenda were fundamentally incompatible with those of a neuro-logical approach to child policy.
Thus far, I have illustrated the alternate diagram for social incorporation offered by the disability community. In doing so, the ways in which the disability response was incompatible with the neuro-logical policy project are accentuated. In the next section, I focus very specifically on what the brain-based view of developmental potential could not incorporate. For this discussion, I revisit the joint meeting of the SCYR-SSPD, highlighting the way in which participants grappled with boundaries that seemed to emerge with the effort to include children with disabilities.

7.4 The Story of Potential, and What it Cannot Include

The joint meeting of the SCYR-SSPD provided a unique opportunity for dialogue on incorporating children with disabilities into the NCA. Although the key “disability lens” (see Prince 2004) values discussed above were as evident in this context as in publications of disability organizations and policy think tanks, the overall tone of the joint meeting was one of grappling with what it meant and what it would look like to incorporate children with disabilities into the NCA. While the disability community developed and shared alternate visions for children’s policy, much of the effort was to incorporate children with disabilities into existing structures and dominant discourses. In one example, a parliamentary member of the SCYR reflected on the difficulty of knowing where to house the disability issue departmentally once the disability lens was applied:

What I think I hear you saying is you do not want disabled children identified according to their lack of health. Therefore you don't necessarily want them assigned to the Ministry of Health, because they have certain areas where they're weak in health but other areas where they're strong. And you don't want them defined according to their possible contribution to the economy—that is, as a human resource. Rather you seem to agree with this committee, which in its latest document has suggested that Canadians are citizens first—not human resources, not on a spectrum of health, but rather citizens.

None of you answered Dr. Pagtakhan's question, which was, where should this be? So I leave it with you and we'll try again. Step into the exciting political world. (Ms. Bonnie Brown, Oakville, Lib., Evidence, joint meeting of the Sub-committee on Children and Youth at Risk and the Sub-committee on the Status of Persons with Disabilities, 7 June 2000)

Ultimately, it seemed, disability must be incorporated somewhere, and its location would affect the type of “deficit” children with disabilities would appear to have. Within the structure available, they either could be lacking in health, or measured against their ability to live up to
dominant economically driven aspirations for a productive workforce with the cognitive capital
to build a “learning society.” While no witness or subcommittee member disagreed that all
Canadians, including children, should be seen as citizens first, for children with disabilities there
was nonetheless this question of how their ‘deficit’ should be viewed. The hidden subtext, of
course, was that there was a deficit.

The response to the NCA from the disability community, however, challenged some of the most
fundamental premises undergirding dominant structures and discourse (which, it should go
without saying, does not imply that it challenged all dominant structures and discourse). An
exchange between several witnesses representing the disability community and parliamentary
members of the SCYR reflected the challenge to dominant values, as well as the difficulty of
actually getting beyond these. In this discussion, Torjman challenged “the general climate of
society,” which was placing great emphasis on measuring outcomes, which displaces attention
from other things that matter. After an exchange of ideas related to measuring children, the
responsibility to measure outcomes, and the exclusion or inclusion of those with disabilities,
Laurin-Bowie re-emphasized the challenge to measurement. Although this challenge was
communicated repeatedly, Laurin-Bowie seemed to convey that the point was still being missed.
Namely, the problem was with any normative measure that first removed children with
disabilities from the norm, and then required an effort to figure out what to do with them at that
point, since they seemingly could not ever realign to the norm. I excerpt this exchange at length
in order to convey some sense of the level of the convergence, divergence, and misunderstanding
that seemed to characterize the discussion (as well as several other exchanges during the joint
meeting):

Ms. Sherri Torjman: I have just a short comment. We have expressed our
concern about the outcomes-based measurement that is pervading
government and just the general climate of society and how it is skewing
much of what we're doing. We wrote a paper called Are Outcomes the Best
Outcome. I think there is some value in terms of measurement, but we have to
be very careful. We have to look at the other kinds of things that are going on,
the other possible successes, and be far more intelligent with respect to how we're
dealing with this measurement question.

Mr. Rey Pagtakhan: Mr. Chair, may I make one very short suggestion? I was
listening intently and I agree with you. Precisely, we can agree that there ought
to be measurable outcomes. Where we may disagree is in the definition of
measurable outcomes.
I will suggest, listening to you—and I agree, and this is my belief—that with measurable outcomes in terms of wage earners... These are normal children and they ought to be productive adults in the future. But there are measurable outcomes, and this is what the value of Canada is about. That is the quality of life, not necessarily independent of wage earners. If we agree that these are two measurable outcomes, then we can challenge the policy-makers—us—about the second aspect, which is the more difficult aspect. That does not mean that we should shrink from that responsibility....

Ms. Sharon Hope Irwin: I just wanted to go back to readiness for a second, that key and crucial measurement at the start of school. I again draw your attention back to my friend Paul on the airplane, saying that some of us aren't going to be able to do that, regardless of what you do. That's where the question is. Do we toss the Paul Youngs out and say they can't be ready for school and there's not much we can do in the early years? This isn't really true. That's obviously why the early childhood educators you were talking about and a lot of special education people have developed individual program plans where we have individualized goals for people who aren't going to meet the normatively designed criteria but certainly can progress along their own life charts and performances.

Sonia was another one. I talked about the fact that there was nothing in terms of measurable change in Sonia that justified using a high-quality early childhood program. There were kids who could have done better on readiness criteria had we included them. We need to tread carefully. We're cautioned by the fact that there was an enormous outcome there, but it was measured in terms of that whole family functioning and then ultimately in that other number-counting way, of the fact that Sonia was able to remain at home. In our zeal and zest for finding measurements we can all agree on, those things are often left out of the picture.

Ms. Connie Laurin-Bowie: I feel I need to clarify that I'm actually saying something slightly different from what I'm hearing other people say. I'm not suggesting that we need to set up a separate set of outcome measures for kids with disabilities. What I'm suggesting is that we need to re-evaluate the measures we're creating for all kids.

I don't know if that's clear, because where you go with it in terms of policy implications is, okay, we have this great set of outcome measures for kids and we know we need to address those kids who don't fit into those developmental milestones, so we're going to create a different set of standards for what their developmental milestones are. That's not what we're
saying. What we're actually proposing—I think I'm saying “we” in fairness—is that you need to re-evaluate what measures you're measuring kids by, and whether you even should be measuring kids. Maybe you should be measuring systems.

The Co-Chair (Mr. John Godfrey): I have a feeling this could be a debate.

Ms. Connie Laurin-Bowie: It's a big debate. (Ms. Sherri Torjman, Vice-President, Caledon Institute of Social Policy, and Mr. Rey D. Pagtakhan, Winnipeg North—St. Paul, Lib., Ms. Sharon Hope Irwin, Executive Director, SpeciaLink, National Centre for Child Care Inclusion, Ms. Connie Laurin-Bowie, Director, Policy and Programs, Canadian Association for Community Living, and the Co-Chair, Mr. John Godfrey, Don Valley West, Lib., Evidence, joint meeting of the Sub-committee on Children and Youth at Risk and the Sub-committee on the Status of Persons with Disabilities, 7 June 2000)

Irwin highlighted the reality that to accomplish incorporating children with disabilities, it might be necessary to situate inclusion into the dominant economic calculus:

I would like to go back to that accountant. If I couldn't persuade him that “next is first”, that children have rights as children, not just for their potential wage-earning capacity versus their financial cost to society, I could show him in dollars and cents what we saved the province because Sonia wasn't institutionalized for the rest of her life, and that wouldn't even begin to get into quality of life issues. (Ms. Sharon Hope Irwin, Executive Director, SpeciaLink, National Centre for Child Care Inclusion, Evidence, joint meeting of the Sub-committee on Children and Youth at Risk and the Sub-committee on the Status of Persons with Disabilities, 7 June 2000)

Overall, the joint meeting of the SCYR-SSPD provided an opportunity to expose the process of grappling with incorporation of children with disabilities into seemingly necessary social structures, values, and discourses. Although an analysis at the level of policy discourse cannot begin to draw conclusions about the lived experiences that resulted from this struggle, it is clear from both published documents and HOC committee transcripts that a conceptual dividing line existed between normality and impairment for children. The documented disparity in access and outcomes for those with disabilities provides ample evidence that this conceptual divide creates everyday effects for children and their families. While published disability community responses to the NCA (or more accurately, to the neuro-logical model it was conveying) offered a set of values and vision upon which to found an inclusive children’s agenda, discussion about incorporating children with disabilities in the NCA actually reflected what the neuro-logical
model espoused and the disability lens feared: the underlying logic of the neuro-normative model of child development placed value in developmental potential that is sometimes diminished by its vulnerability to social-economic environments, but is distinct from disability as a “permanent” impairment. As one parliamentary member of the SCYR aptly stated, “immediately you have two categories of children: those with disabilities and those without.”

As for the focus here, I think, we know it's about “early” and it's about “children”, but the critical point of measurable outcomes, the piece that we are being challenged on, is about development. **But immediately you have two categories of children: those with disabilities and those without…..**

Quickly, my background is pediatrics. **You have the normal child growth and development, and then you have children also with growth and development but with disabilities.** Therefore these **stages of development, the levels that you can measure, will be different at every age level because of disabilities.** But if you do not provide services to these people, they can be even further so-called handicapped—if I can use that word—because they have the handicaps to begin with. (Mr. Rey D. Pagtakhan, Winnipeg North—St. Paul, Lib., Evidence, joint meeting of the Sub-committee on Children and Youth at Risk and the Sub-committee on the Status of Persons with Disabilities, 7 June 2000)

This model created, and then derived policy and programs from, a vision of developmental potential **within** which some children with disabilities could never be incorporated, because it defined out certain permanent impairments. Inclusion should happen, but it was a step that came after defining out. Disabilities that fell into this “permanent” rather than “vulnerable” kind were first set toward the margin of normality, and then a mode of incorporation could be applied. The rationale for inclusion was based on this marginal starting point. From a neuro-logical point of view, the limits of inclusion were set by the definitional work that clarified there were two kinds of children: those with potential (or vulnerable potential), and those with permanent impairments. Through normalization, the diminished potential of the latter kind could be recuperated for the benefit of society. Through various other modes of incorporation, the former kind could be included as well, but without needing to breech the limit between potential and its permanent impairment.

### 7.5 Conclusion

In this chapter, I have described the disability response to the NCA as this unfolded through national policymaking and discourse, and I have outlined the contours of the neuro-logical and
an alternate diagram for the arrangement of developmental differences and governmental priorities. The disability community responded to the NCA by collecting families’ input through listening sessions, consolidating the discontent framing a disability response that utilized families’ words, and disseminating the disability response through publication and evidence presented to relevant House of Commons (HOC) committees. Researchers active in developing the neuro-logical model were responsive, in the sense that the question of disability and its place was explicitly addressed following the disability response. HOC Sub-committees on Children and Youth at Risk (SCYR) and the Status of Persons with Disabilities (SSPD) brought in witnesses to share perspectives and engage in lively discussions of the issues at stake. Although this is not a storyline dominated by overt interpersonal conflict and struggle, it is clearly a storyline about conflict and struggle over meaning and governmental strategies. When read through the theoretical lens adopted in this thesis, another storyline emerged: normality and its developmental differences were being arranged and rearranged in a series of proposals from different communities of meaning. In the process, a set of diagrams was developed. The neuro-logical community continued to draw out the arrangement it had begun to articulate in the early 1990s. It drew new lines to clarify how various developmental differences were distinct from one another, and where each was meant to be situated in relation to normality and in relation to one another in the neuro-logical rationality of government. The disability community drew another diagram, not only offering a different demarcation of difference and relationships, but also offering an alternate set of values and priorities to guide the governmental enterprise. As these two diagrams were brought together in the context of discussions during a joint meeting of the SCYR-SSPD, areas of incompatibility were exposed.

I conclude that at least in relation to this conceptual model, some developmental differences could only be “included without potential,” by which I mean they could be included within the category of “children,” but not within the category of “developmental potential.” Because a set of programmatic and measurement tools was based directly on the neuro-logical model and developed by its experts, it is likely that this inclusion without potential was carried into programs meant to measure early development and guide community development for human capital growth.

In the next chapter, I describe my main findings in this study, synthesize the primary conclusions drawn throughout the thesis, and discuss implications for public health policy and practice.
Chapter 8: Discussion and Conclusion

8 Introduction

My purpose in this thesis has been to improve understanding of how framing national investments in children as a matter of brain development affects inclusion of children whose brain development is considered impaired, which represents a gap in the literature. A well-established Canadian literature shows that early years policy has important exclusionary effects for some adults and children, however, this literature has not considered how framing early years investments as a matter of brain development might affect exclusion. A different body of literature is emerging that examines the early years policy use of neuroscientific knowledge; however, to date this literature has given minimal attention to exclusionary effects. Likewise, disability exclusion has not been addressed in either literature, although several authors have mentioned the likelihood that Canadian early years policy positions children with disabilities as less worthy of investment. The broader literature on childhood recognizes the centrality of “the child” in modern efforts to govern population vitality, and makes important contributions regarding exclusionary effects for children with disabilities in this context. A broader literature on the neuro-cultural turn is beginning to show how neuromolecular styles of thought are imbricated in neoliberal governmentality (see Abi-Rached and Rose 2010; Papadopoulos 2011; Pitts-Taylor 2010; Rose and Abi-Rached 2014). The lack of research on the exclusionary effects of this neuro-neoliberal hybrid is striking in general, but it is particularly striking in relation to children whose brain development might be considered permanently impaired. This thesis has contributed to addressing the pressing question: if contemporary neoliberal governmentality aims to optimize potentiality, and the developing brain is viewed as a key biological locus for potentiality, what does this mean for people who considered to have permanent limitations in brain development?

In this thesis, I adopted policy surrounding development and implementation of Canada’s National Children’s Agenda (NCA) as a useful case for examining how framing the investment in childhood as an investment in brain development may impact the modes of inclusion available to children considered to have a cognitive “impairment” or “disability.” The NCA is an excellent case for such a study for several reasons. First, the NCA drew heavily upon a neuroscientific account of child development. Second, families and the disability community critiqued it for excluding children with disabilities. Third, inclusive language was added in response to public feedback.
Moreover, a well-established literature points to the general exclusionary effects of this area of neoliberal (or social investment version of neoliberal) policy. Insights from critical disability studies and the analytics of biopolitics both suggest that normative knowledge plays a pivotal role in (re)producing disability disadvantage. I situated myself in the literature by approaching the NCA as one instance in a long history of mobilizing childhood to govern collective life, and more specifically as an instance of early brain development as a period of human capital formation in the neuro-style of neoliberal governmentality. Theoretically, I adopted a biopolitical approach in which I situated the NCA as an effort to assemble knowledge and strategies for optimizing life at the population level, and the neuro-logical model as a way to calibrate biopolitics to both emergent neuroscientific “truths” and rapid social and economic change. I was influenced by the focus on exclusionary effects in Lemke’s analytics of biopolitics, and drew upon contributions from critical disability scholars to adapt an approach to theorizing exclusion that was suited to this study. By mobilizing concepts of “developmental difference” and “incorporation,” I was able to ask how various developmental differences were incorporated in the conceptual model of child development undergirding the NCA.

The remainder of this chapter is organized into three sections. In the first, I describe my key findings based on the four research questions that guided this study. In the second, I provide a synthesized discussion of the primary conclusions I draw from my findings. In the third and final section, I discuss the contributions of this study and its implications for public health research, policy, and practice.

8.1 Key Findings

In this section, I describe my key findings organized in order of my four research questions, identified in Chapter 1: 1) what truth discourse of child development was mobilized in the NCA; 2) how was child development attributed value for governing population; 3) how were developmental differences incorporated in this truth discourse; and 4) how, if at all, was this knowledge embedded in or operationalized through NCA policies and programs?

8.1.1 Child Development as Brain Development

I found that the NCA mobilized knowledge of child development as brain development that was compiled for policy purposes in the early 1990s by researchers affiliated with the Human Development Program at the Canadian Institute for Advanced Research. Beginning in 1994, this knowledge entered national policy discourse first through health (through the
Federal/Provincial/Territorial Advisory Committee on Population Health and the House of Commons Standing Committee on Health), later through Human Resources Development Canada (HRDC), and finally culminated in integration in the NCA (see Appendix A for timeline). Although many mentions of this knowledge were brief, there was clear reference to a coherent body of knowledge and key experts. The knowledge represented child development in terms of brain development. The knowledge was detailed, brain-based, and apparently evidence-based. Child development was described as a process of proliferating synaptic connections, followed by an important period of pruning of less used connections. The child-environment interface was said to shape brain wiring, which impacted lifelong outcomes in physical health, mental health, and productivity. Given sufficient stimulation, the young brain was able to develop in dynamic interaction with its environment, leading to development of its innate potential. At each stage of development, this brain structure provided the foundation for receiving and channeling subsequent stimulation. The early years were a particularly critical stage in shaping developmental trajectories. Child development as brain development was more than just a neurodevelopmental account of individual human growth. I found that brain development was also described as a biological pathway between the environment and the individual life course, and between outcomes at the individual and population level. Specially, brain development and brain functioning explained all meaningful environmental impacts on individual health, social, emotional, and intellectual outcomes. In addition, this susceptible brain explained the pathways between individual and population outcomes. This made brain development of critical social and economic importance.

8.1.2 Value Located in Brain Development Potential

I found that the neuroscientific explanation of child development was primarily used in Canadian national policy related to a new focus on investing in the early years, and to a longer-standing cost-benefit calculus that sought to identify efficient and effective policy approaches. In the latter case, it provided scientific evidence to support existing trends. In the former, my most important finding was that the potentiality of childhood was directly situated in a perceived innate potentiality for optimal brain development. I described how brain development therefore served as the biological basis for human capital development. The critical stage of early brain development was cast as a “window of opportunity” to shape the future, and as an important investment phase. The value of brain-based potentiality was linked to perceived pay offs for population and economy, in a pattern that I have termed the “neuro-logical” model. In this
model, a learning society would govern properly by applying the appropriate economic calculus to population health and productivity, which meant matching investment to opportunity. Managing investment properly meant providing optimal conditions for early brain development through families and communities, and attempting to recuperate any developmental potential diminished by social-economic factors.

8.1.3 Normalizable and Non-normalizable Developmental Difference

I found that the brain was described as being very vulnerable to environmental stimuli. In fact, much of the story of brain development was told in relation to the abundant environmental risk to normal development. Brain development was considered especially vulnerable to socially induced poor developmental outcomes. However, socially produced discrepancies between actual developmental outcomes and potential were described as alterable with effort, although this was most effective at critical stages of development. Developmental outcomes that were in the lowest tenth percentile on normative measures were defined as “vulnerability.” Vulnerability was explicitly defined as mutable, and was also explicitly identified as being distinct from permanent, “unalterable” differences such as “disability.” Vulnerability and disability were the primary forms in which developmental difference appeared. My findings support the conclusion that disability was actually incorporated in the truth discourse of brain-based child development, but it was incorporated differently than vulnerability. Based on the modes of incorporation articulated in Chapter 2, the difference can be described as the incorporation of vulnerability through normalization versus the incorporation of disability through minimal social assistance.

8.1.4 Neuro-logical Policy Programs

I found that the neuro-logical model emerged and took root over the course of a decade or more, with the NCA and SUFA offering a foundation for rapid proliferation in the early 2000s. Between 2000-2011, the neuro-logical account seemed to be solidified as a legitimate base of evidence for child-related social policy. References to the model were so common in policy sources from the mid-2000s onward that a comprehensive review was beyond the scope of my study. I found that the neuro-logical model was utilized in the Understanding the Early Years Initiative, which was implemented as a community development project in 48 communities from 1999 through 2011. I found evidence of the model throughout community-developed materials, such as posters, newsletters, parent resource guides, and community reports. Specifically, these materials reflected the ideas that child development is a matter of brain development; that investing
in brain-based child development is important; and that measuring and producing maps of early development, community assets, and community risk factors would aid in making this investment. The Early Development Instrument (EDI), which was the instrument used in this project, was developed by CIAR-affiliated researchers who formulated the neuro-logical model. For the purposes of this study, these findings are adequate to answer my question about whether the model was embedded in and operationalized through policy programs stemming from the NCA.

In this section, I have described my key findings. In the next section, I provide a synthesized discussion of my primary conclusions, which cut across the research questions and findings outlined above.

8.2 Conclusions

I draw two overarching conclusions from this work: that the investment in early childhood was fundamentally an effort to invest in brain-based potentiality; and that the possibilities for incorporating children with disabilities in the NCA were molded by the neuro-logical model undergirding it.

While on the surface the NCA was about investing in children, it drew on a neuro-logical truth discourse that was primarily about the role of early brain development in optimizing population development and ensuring global economic competitiveness. I have made the case that the neuro-logical model was fundamentally about investing in potential, which was linked to the perceived innate capacity of the young brain for optimal development. This resonates with the broader literature (see Broer and Pickersgill 2015; Castañeda 2002; Pitts-Taylor 2010; Taussig et al 2013; see also Martin 2013). Specifically, potential appeared to be tied strongly to brain development, which is similar to Broer and Pickersgill’s finding that a “focus on the practicalities of maximising a broadly-understood human ‘potential’” was particularly pronounced in British early years policy (Broer and Pickersgill 2015: 56). This is also supportive of Castañeda’s (2002) conclusions that the figure of the child in the contemporary western imagination is typified most by a sense of flexible, malleable potentiality. At the same time, the literature makes it clear that potentiality is playing a critical role in neoliberal governmentality far beyond childhood per se (Papadopoulos 2011; Pitts-Taylor 2010; Taussig et al 2013; see also Martin 2013). As Fawcett and colleagues point out with respect to child care policy and practice in the British context, the imperative for social investment actually appears to be an imperative to make investments in the capacity to change (Fawcett et al 2004: 41). The Canadian case I have
studied here reflects the broader imbrication of neuromolecular with advanced or neo-liberal styles of thought, as well as the centrality of potentiality to neoliberal governmentality today. In particular, the neuro-logical model is a case in which neoliberalism, potentiality, and the brain as biological substratum intersect. In this way, examining truth discourses of child development and strategies of power in the case of the NCA provides a window onto underlying social and political dynamics that impact child policy, but are not specific to childhood.

The possibilities for including children with disabilities were shaped by the fact that the neuro-logical model was about investing in brain-based potential. The neuro-logical model itself is inseparable from the neoliberal policy project to invest in potentiality. The neuro-logical model served the role of authoritative knowledge, providing the “cognitive and normative map that open[ed] up biopolitical spaces and define[d] both subjects and objects of intervention” (Lemke 2011: 119). The underlying logic of the biopolitical project was to conserve, foster, and recuperate potential at the population level based on relevant truths drawn from the human sciences. The neuro-logical model offered the authoritative, expert knowledge needed for this quintessentially biopolitical project. In the neuro-logical diagram of normality and its deviations, the assumption that “disability” meant broken ability remained intact, and disability was left in the place it was allocated in the welfare state: worthy justification for the provision of minimal social assistance. Enacting neoliberal governmentality in neuro-logical terms, the neuro-logical model explained that the proper goals of government were to optimize brain-based potential in order to ensure societal human capital development, and to identify pockets of vulnerable children so that vulnerability could be normalized into better alignment with normal potential. The disability community was able to lay claim to inclusion for children with disabilities and their families within the national policy domain, but my research gives every indication that incorporation had to occur within the context of the neoliberal, neuro-logical policy project. This meant that to the extent that children were permanently disabled, they could be incorporated through minimal social assistance. To the extent that children were vulnerable (even if also disabled), they could be incorporated through normalization. Presumably, other children were already fully incorporated. In the neuro-logical model, however, it was absolutely critical that there be no confusion between the categories of vulnerability and disability, because the

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66 The policy process included mechanisms for making claims to social inclusion. Within the scope of the sources I used in this study, I found no evidence that the call for valuing and including children with disabilities was dismissed or disparaged.
provision of assistance must not disadvantage investment in developmental potential. In Chapter 7, I diagrammed this logic to make the implications more transparent. The most fundamental implication is that some developmental differences could only be “included without potential,” by which I mean they could be included within the category of “children” as an age set, but not within the category of normal, neuro-developmental potential.

I offered “inclusion without potential” as the lead in to this thesis in order to foreshadow several conclusions and implications of this thesis that I consider critical. The first is the empirical reality that children with disabilities were included in the NCA without being included in the category of brain-based developmental potential. Not even the disability community sought to include children with disabilities in the normative construct of developmental potential offered by the neuro-logical model. Second, the effort to incorporate children with disabilities had very little, if any, potential to affect the parameters shaping their mode of incorporation. The disability response offered an alternate vision for incorporation; however, this response could neither dislodge the neoliberal policy project nor offer an alternate authoritative, “scientific” truth. Third, without fundamentally altering the underlying premises and values of the neuro-logical, neoliberal biopolitical project, consideration of the value, potential, and health of children with disabilities is displaced, because the model itself enacts a distinction between permanent disability and what it means by potential, human capital value, and health.

In the next section, I discuss the contributions of this study and its implications for public health research, policy, and practice.

8.3 Discussion of Contributions and Implications

This study makes several empirical, methodological, and theoretical contributions to the literature. Empirically, this study demonstrates that neuroscientific accounts of early childhood were prominent and impactful in Canadian early years policy in the NCA era. Recently, there has been increased interest in examining the mobilization of neuroscience in neoliberal policymaking, but the existing research has focused on the British context (Broer and Pickersgill 2015; Edwards et al. 2015; Lowe et al. 2015a, 2015b; Macvarish et al. 2014, 2015; Pitts-Taylor 2010; Wastell and White 2012). Although there is an extensive literature examining the child-focused nature of policy projects in the Canadian context (see Bundy 2012; Dobrowolsky and Jenson 2004; Einboden et al. 2013; Jenson 2004, 2008, 2009; Jenson and Saint-Martin 2006; Lister 2003; McKeen 2004, 2005, 2007, 2009; Stooke 2003; Wiegers 2013; Vosko 2006), a
detailed consideration of neuroscientific accounts in Canadian policy has not been offered.\textsuperscript{67} Therefore, this study extends the empirical knowledge base in a meaningful way.

Methodologically, this study contributes strategies for conducting “non-local” (Feldman 2011) anthropology of policy when researching diffuse policies. In particular, the strategies I used to maintain three tiers of documentary sources would be useful to studies that rely heavily or exclusively on the documentary record (see section 4.2). Specifically, I created an extensive “field” of all documentary sources that was readily navigated and explored in a way that maintained the commitment to “contingency” (Feldman 2011: 33) by maintaining a digital library using DEVONthink Pro software. The specific speed, storage, organization, and retrieval features of this software were essential to fulfill this function. I maintained, explored, and coded a second, more conventional collection of documentary sources through the qualitative data analysis software product NVivo 10. Finally, I maintained a set of “exemplars” that were analyzed in greater depth. Together, these strategies facilitated approaching documentary research from with an anthropological orientation (see section 4.1), categorizing and connecting data effectively (see section 4.3.1), and applying strategies to improve rigor (see section 4.3.2).

Theoretically, this study contributes an approach to analyzing exclusionary effects within an analytics of biopolitics. My point of departure is Lemke’s attentiveness to the exclusionary effects of biopolitical processes (Lemke 2011). However, Lemke does not theorize exclusion per se. I formulated an approach to exclusion based on Foucault’s original work on optimizing life, letting die, and making die under biopower (Foucault 1990a, 2003), as well as key contributions from critical disability studies (Campbell 2005, 2009a 2009b; Davis 1995; 2002, 2006, 2013; Ravaud and Stiker 2001). Specifically, I formulated an approach to modes of \textbf{incorporation} based on Ravaud and Stiker’s typology of exclusion/inclusion (2001). My adaptation of this typology takes into account Campbell’s insight that disability is always present in the “talk of normalcy, normalization, and humanness” (Campbell 2005: 109), and Davis’ insight that some forms of difference are always pressed beyond the limits or boundary of acceptability. I formulated a theoretical approach in which exclusionary processes operate through four modes of incorporation and two modes of exteriorization (see Table 1 and Figure 2). This theoretical

\textsuperscript{67} The study that makes the most effort to cover this ground has important empirical and theoretical limitations (Einboden et al. 2013; see discussion of these limitations in section 3.2). As discussed in Chapter 2, Wall (2004, 2010) and Story (2003) have offered more detailed consideration of neuroscientific accounts in the Canadian context, but their focus is on parenting advice rather than national policymaking.
approach to incorporation proved applicable and productive for scrutinizing exclusionary processes in the study conducted for this thesis. In particular, it enabled a more nuanced analysis of exclusionary processes than afforded by the dichotomy of inclusion and exclusion. It was also more readily applied to the analysis of incorporation/exteriorization of aspects of life than is the notion of “social inclusion,” which assumes life in the form of legal persons or citizens. Nonetheless, my approach remains applicable to analysis of the social incorporation/exteriorization of persons.

Based on this study and the accompanying literature review, I think there are three areas that need further research. First, further research on subjectification is needed. In this study, I purposefully focused on the first two of the three foci in the analytics of biopolitics, leaving questions of subjectification out of this study. Excellent research is emerging on subjectification in the context of neuromolecular views of life; of note, Rapp and Singh consider how families and adolescents negotiate such views (see especially Rapp 2010; Singh 2013), and a range of scholars are exploring disorder and neurodiversity in this context (see especially Altermark 2014; Orsini 2012; Ortega 2009; Runswick-Cole 2014). Additional research is needed on how families, researchers, policymakers, professionals, and other community members negotiate neuro-logical knowledge of individual and collective human life. Second, the data I reviewed for this study make it clear that the neuro-logical model privileges intervening in human development at the level of community. Although I did not attempt a detailed study or analysis of this aspect, there is ample evidence that it could be researched productively in the case of the NCA and the neuro-logical model. The literature gives some indication that governing through community is a component of governing childhood today (James and James 2001; McGowan 2005; Millei 2011), however, there has not been sustained study of this issue. This area also has implications for subjectification, since governing through community entails generating collective, community subjectivity in addition to producing knowledge of the community’s geo-spatial and human population attributes.

Finally, there is need for detailed ethnographic study of how the neuro-logical model has been (re)produced or subverted in local contexts. The most fundamental reason this is important is because there is no literature on whether and how the neuro-logical model enacts exclusionary effects in lived experience for children with disabilities and their families. Moreover, the existing Canadian literature makes it clear that national early policy discourse and program logic is mediated through provincial and local implementation (see McKeen 2007; Pacini-Ketchabaw et
For example, provincial policymaking may inscribe particular forms of racism (see Pacini-Ketchabaw et al. 2006) or local programs may individualize blame (see McKeen 2007) in ways that are not prescribed by national policy discourse and programs. Conversely, a broader anthropological literature shows that individuals are pragmatic in the ways they take up and subvert authoritative knowledge and techniques of power (see especially Schepers-Hughes 1992; Lock and Kaufert 1998). Thus local implementation may both amplify and subvert exclusionary effects. Therefore, ethnographically rich data are needed to clarify the exclusionary effects in lived experience.

This study has important implications for public health theory, policy, and practice. First, public health theory and practice must continue to develop and apply critical awareness of how normative knowledge (re)produces the negative ontology of disability and exclusionary effects. For practitioners, this critical awareness must be applied with far more diligence to the production of text and images intended for health education and promotion. For researchers, this should entail an increased engagement with critical disability studies, as well as a continued recognition that disability intersects with multiple forms of disadvantage, all of which are subject to the same mechanisms of (re)production through discourses of humanness and normality. As public health research expands the extent to which health disparity is examined in relation to disability, a sustained program of research is needed to build knowledge of how normative discourses both produce and exacerbate disparities for individuals with disabilities.

Second, social and economic policy and practice are important foci for public health research and theory. Studies of the social production of normal, healthy child development have typically focused on biomedicine and the psychological complex, however, this study demonstrates the extent to which knowledge of healthy child development is generated and mobilized in policy spaces. Moreover, this is not simply a matter of a neurobiological complex entering the field and influencing policy. Instead, the neuro-logical expertise described in this thesis was as much a political as a biomedical, or neuroscientific, form of expertise. The “policy levers” that impact the knowledge and government of human life, and therefore human health and wellbeing, extend far beyond health policy. This implication has bearing for disability, as well. It is clear that the possibilities for incorporation—as well as the longer-term ramifications for health, suffering, wellbeing, or disadvantage—take shape in policy spaces that are not “disability policy” per se. As a field of research and practice, public health plays an important role in exposing inequities and generating knowledge to inform inclusive social policy that supports human wellbeing.
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Appendices

Appendix A: Timeline of References to Brain Development in Policy Sources......................... 228
Appendix B: Timeline of Key Policy Sources........................................................................ 229
Appendix C: List of UEY Communities................................................................................ 230
Appendix D: List of Key Documentary Sources.................................................................... 231
Appendix E: Excerpt from Table of Inclusion and Exclusion Decisions for House of Common Committee Evidence................................................................. 238
Appendix F: UEY Community Information Sheet................................................................. 239
Appendix G: UEY Community Poster ................................................................................... 241
Appendix H: UEY Community Newsletter ........................................................................... 242
Appendix I: Excerpt from UEY Family Resource Guide....................................................... 243
Appendix J: UEY Kings County, Nova Scotia Community Data Maps................................. 244
Appendix K: UEY Dixie Bloor Community Data Maps......................................................... 245
Appendix A: Timeline of References to Brain Development in Policy Sources

- **1993**
  - "Social economic factors and human development"

- **1995**
  - "The learning society in the information age"

- **1996**
  - "Technology, information and the evolution of social policy: The chips for neurons revolution and socio-economic change"

- **1998**
  - HOC HRPD
    - 36th Parliament, 1st Session
    - 11 June 1998
  - Investing in Children National Research Conference held

- **1999**
  - Developmental Health and the Wealth of Nations (Guilford Press)
  - Early Years Study: Three Years Later (Founder's Network)

- **2000**
  - HOC HRPD – SCYR
    - 36th Parliament, 2nd Session
    - Multiple dates
  - Growing Up In Canada: National Longitudinal Survey of Children and Youth (HRDC, Stats CA)

- **2001**
  - HOC HRPD – SCYR
    - 37th Parliament, 1st Session
    - Multiple dates

- **2002**
  - Vulnerable Children: Findings from Canada's National Longitudinal Survey of Children and Youth (U Alberta Press and HRDC)

- **2004**
  - Investing in Early Child Development: The Health Sector Contribution (ACPH)

- **2007**
  - Early Years Study 2 (CECD)

- **2011**
  - Early Years Study 3 (CECD)
  - Early Development Instrument
  - Understanding the Early Years (UEY) Initiative (HRDC)
  - Cross-Sector
  - CIAR
  - Human Resources Development
  - Health
  - FEDERAL AND PROVINCIAL POLICY DOCUMENTS

- **2011**
  - "Social economic factors and human development"
### Appendix C: List of UEY Communities

**Pilot communities begun between 1999-2001 and concluded in 2005:**

- North York, Ontario
- Prince Albert, Saskatchewan
- Prince Edward Island
- Southwestern Newfoundland
- Winnipeg, Manitoba

**Pilot communities begun between 1999-2001 and concluded in 2007:**

- Abbotsford, British Columbia
- Dixie-Bloor of Mississauga, Ontario
- Hampton, New Brunswick
- Montréal, Québec
- Niagara Falls, Ontario
- Saskatoon, Saskatchewan
- South Eastman, Manitoba

**Communities begun in 2005 and concluded in 2008:**

- Campbell River, British Columbia
- Cumberland County, Nova Scotia
- Division scolaire franco-manitobaine, Manitoba
- Greater Saint John, Québec
- Greater Victoria, British Columbia
- Halifax West and Area, Nova Scotia
- Kawartha Lakes and Haliburton County, Ontario
- Lower Hamilton, Ontario
- Milton, Ontario
- Mission, British Columbia
- Montréal Chassidic and Orthodox Community, Québec
- Niagara Region, Ontario
- North Shore (North and West Vancouver), British Columbia
- Northeast Saskatchewan
- Northern Region of Ontario
- Northumberland County, Ontario
- Okanagan-Similkameen, British Columbia
- Ottawa, Ontario
- Pointe-de-l’Île de Montréal, Québec
- Sunshine Coast, British Columbia
- Western Nova Scotia

**Communities begun in 2007 and concluded in 2010:**

- Burnaby, British Columbia
- Cape Breton-Victoria, Nova Scotia
- Cowichan Valley, British Columbia
- Georgina, Ontario
- Kamloops, British Columbia
- Malton, Ontario
- Moose Jaw-South Central Saskatchewan, Saskatchewan
- New Westminster, British Columbia
- North Peace-Northern Rockies, British Columbia
- Pictou, Antigonish and Guysborough, Nova Scotia
- Prince Albert Grand Council, Saskatchewan
- Red Deer, Alberta
- Regina, Saskatchewan
- Selkirk-Interlake, Manitoba
- Southeast Saskatchewan
- West Kootenay, British Columbia
Appendix D: List of Key Documentary Sources

Federal Government Documentary Sources

Canada. No date. Early Childhood Development, Early Learning and Child Care: Investing in our Future. SP-625-11-04.


Federal/Provincial/Territorial Government Documentary Sources


Federal/Provincial/Territorial Ministers of Health. Ottawa: Minister of Public Works and Government Services Canada.


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Provincial Government Documentary Sources
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Community and Other non-Governmental Documentary Sources

Canadian Association for Community Living. "All Children Means All Children."


**Parliamentary Documentary Sources**


35th Parliament, 1st Session

- May 4, 1995
- May 18, 1995
- November 2, 1995
- November 7, 1995
December 5, 1995
December 12, 1995

35th Parliament, 2nd Session

- April 16, 1996
- April 22, 1996
- April 23, 1996
- April 25, 1996
- May 7, 1996
- May 16, 1996
- May 28, 1996
- May 30, 1996
- June 4, 1996
- June 13, 1996
- October 1, 1996
- October 8, 1996
- October 22, 1996
- December 12, 1996
- February 11, 1997
- April 8, 1997

36th Parliament, 1st Session

- May 6, 1999
- May 13, 1999
- May 25, 1999
- May 27, 1999

36th Parliament, 2nd Session

- November 16, 1999
- November 17, 1999
- May 2, 2000


35th Parliament, 1st Session

- May 18, 1995
- December 5, 1995

36th Parliament, 1st Session

- October 23, 1997
- October 28, 1997
• November 4, 1997
• November 18, 1997
• November 20, 1997
• November 25, 1997
• December 2, 1997
• December 4, 1997
• March 10, 1998
• May 5, 1998, part 1
• May 5, 1998, part 2
• May 26, 1998
• May 28, 1998
• June 11, 1998
• May 5, 1999, part 1
• May 5, 1999, part 2
• June 8, 1999

36th Parliament, 2nd Session
• November 23, 1999

37th Parliament, 1st Session
• April 26, 2001


36th Parliament, 1st Session
• March 9, 1999
• March 16, 1999
• March 23, 1999
• April 13, 1999
• April 20, 1999
• April 27, 1999
• May 4, 1999
• May 10, 1999

36th Parliament, 2nd Session
• December 1, 1999
• December 17, 1999
• December 14, 1999
• March 22, 2000
• March 29, 2000
• April 4, 2000
• May 3, 2000
• May 10, 2000
• May 31, 2000
• June 7, 2000
• June 14, 2000

37th Parliament, 1st Session
• April 4, 2001
• April 25, 2001
• May 2, 2001
• May 9, 2001
• June 5, 2001


36th Parliament, 1st Session
• February 11, 1999
• March 2, 1999
• March 4, 1999
• April 15, 1999
• April 22, 1999
• April 29, 1999
• May 6, 1999
• May 11, 1999
• May 27, 1999
• June 3, 1999
• June 8, 1999

36th Parliament, 2nd Session
• December 2, 1999
• December 15, 1999
• February 23, 2000
• April 4, 2000
• May 3, 2000
• May 16, 2000
• May 31, 2000
37th Parliament, 1st Session

- March 25, 2001
- April 4, 2001
- May 2, 2001
- May 9, 2001
- May 16, 2001
- May 31, 2001
- November 20, 2001
- November 27, 2001
- December 4, 2001
- December 11, 2001
- January 29, 2002
- February 5, 2002
- March 19, 2002
- April 16, 2002
- April 30, 2002
- May 7, 2002
- May 28, 2002
## Appendix E: Excerpt from Table of Inclusion and Exclusion Decisions for House of Common Committee Evidence

<table>
<thead>
<tr>
<th>Committee, Session, Meeting</th>
<th>Date</th>
<th>Order of Business</th>
<th>Inclusion Status</th>
<th>Basis for Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>HEAL 35-1 52</td>
<td>2 May 95</td>
<td>Consideration of Chapter 13 (Federal Management of the Food Safety System) of the 1994 Report of the Auditor General</td>
<td>exclude</td>
<td>content</td>
</tr>
<tr>
<td>HEAL 35-1 53</td>
<td>4 May 95</td>
<td>(None listed; Witnesses from Health Canada)</td>
<td>include</td>
<td>content</td>
</tr>
<tr>
<td>HEAL 35-1 54</td>
<td>9 May 95</td>
<td>Main Estimates, Votes 15, 20, 25 and 30 (Health-Hazardous Materials Information Review Commission, Medical Research Council and the Patented Medicine Prices Review Board)</td>
<td>exclude</td>
<td>content</td>
</tr>
<tr>
<td>HEAL 35-1 55</td>
<td>11 May 95</td>
<td>Main Estimates for the fiscal year ending March 31, 1996 as well as the expenditure plans and priorities in future fiscal years as described in the Departmental Outlook</td>
<td>exclude</td>
<td>content</td>
</tr>
<tr>
<td>HEAL 35-1 56</td>
<td>16 May 95</td>
<td>Consideration of its Order of Reference dated Tuesday, February 28, 1996 relating to the Main Estimates for the fiscal year ending March 31, 1996 and pursuant to Standing Order 81(7), the expenditure plans and priorities in future fiscal years as described in the departmental Outlook; Consideration of its Draft Report on Mental Health and the Aboriginal Peoples</td>
<td>exclude</td>
<td>content</td>
</tr>
<tr>
<td>HEAL 35-1 57</td>
<td>18 May 95</td>
<td>Consideration of its Order of Reference dated Tuesday, February 28, 1996 relating to the Main Estimates for the fiscal year ending March 31, 1996 and pursuant to Standing Order 81(7), the expenditure plans and priorities in future fiscal years as described in the departmental Outlook</td>
<td>include</td>
<td>content</td>
</tr>
<tr>
<td>HEAL 35-1 58</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
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<tr>
<td>HEAL 35-1 59</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>HEAL 35-1 60</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>HEAL 35-1 61</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>HEAL 35-1 62</td>
<td>12 Sep 95</td>
<td>Election of a Chairman</td>
<td>exclude</td>
<td>order</td>
</tr>
<tr>
<td>HEAL 35-1 63</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>HEAL 35-1 64</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>HEAL 35-1 65</td>
<td>25 Oct 95</td>
<td>Bill C-7</td>
<td>exclude</td>
<td>content</td>
</tr>
<tr>
<td>HEAL 35-1 66</td>
<td>2 Nov 95</td>
<td>Consideration of a study of Preventative Strategies for Healthy Children</td>
<td>include</td>
<td>order</td>
</tr>
<tr>
<td>HEAL 35-1 67</td>
<td>7 Nov 95</td>
<td>Consideration of a study of Preventative Strategies for Healthy Children</td>
<td>include</td>
<td>order</td>
</tr>
<tr>
<td>HEAL 35-1 68</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>HEAL 35-1 69</td>
<td>21 Nov 95</td>
<td>Consideration of Supplementary Estimates (A) (Health Votes 1a, 5a, 10a 20a and 25a)</td>
<td>exclude</td>
<td>content</td>
</tr>
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<td>HEAL 35-1 70</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>HEAL 35-1 71</td>
<td>5 Dec 95</td>
<td>Consideration of Supplementary Estimates (A) (Health Votes 1a, 5a, 10a 20a and 25a)</td>
<td>include</td>
<td>content</td>
</tr>
<tr>
<td>HEAL 35-1 72</td>
<td>12 Dec 95</td>
<td>Consideration of a study of Preventative Strategies for Healthy Children</td>
<td>include</td>
<td>order</td>
</tr>
<tr>
<td>HEAL 35-2 1</td>
<td>7 Mar 96</td>
<td>Pursuant to Standing Orders 106(1) and 106(2), electing a Chair</td>
<td>exclude</td>
<td>content</td>
</tr>
<tr>
<td>HEAL 35-2 10</td>
<td>28 May 96</td>
<td>Study on Preventative Strategies for Healthy Children</td>
<td>include</td>
<td>order</td>
</tr>
<tr>
<td>HEAL 35-2 11</td>
<td>30 May 96</td>
<td>Study on Preventative Strategies for Healthy Children</td>
<td>include</td>
<td>order</td>
</tr>
<tr>
<td>HEAL 35-2 12</td>
<td>4 Jun 96</td>
<td>Study on Preventative Strategies for Healthy Children</td>
<td>include</td>
<td>order</td>
</tr>
<tr>
<td>HEAL 35-2 13</td>
<td>13 Jun 96</td>
<td>Future Business</td>
<td>include</td>
<td>content</td>
</tr>
<tr>
<td>HEAL 35-2 14</td>
<td>25 Sep 96</td>
<td>Election of President</td>
<td>exclude</td>
<td>order</td>
</tr>
<tr>
<td>HEAL 35-2 15</td>
<td>1 Oct 96</td>
<td>The Committee discusses its future business</td>
<td>include</td>
<td>content</td>
</tr>
<tr>
<td>HEAL 35-2 16</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>HEAL 35-2 17</td>
<td>8 Oct 96</td>
<td>Pursuant to Standing Order 108(2), consideration of Preventive Strategies for Healthy Children</td>
<td>include</td>
<td>order</td>
</tr>
<tr>
<td>HEAL 35-2 18</td>
<td>22 Oct 96</td>
<td>Pursuant to Standing Order 108(2), consideration of Preventive Strategies for Healthy Children</td>
<td>include</td>
<td>order</td>
</tr>
<tr>
<td>HEAL 35-2 19</td>
<td>29 Oct 96</td>
<td>Study on the Review of Policies on the Misuse and Abuse of Substances</td>
<td>exclude</td>
<td>content</td>
</tr>
</tbody>
</table>
Information Sheet
Brain Development: Pathways to Learning

Most of human brain development occurs after birth, meaning that the first three years of life are critical for the development of the human brain. How well a child's brain develops during these early years affects how individuals think and behave for the rest of their lives.

How the brain develops in the early years
Brain development occurs as a result of interactions between genetic factors and the child’s environment. The 100 billion nerve cells in a child's brain at birth will grow and connect with other neurons in the systems that control vision, hearing, movement, and emotions, as well as thinking and learning. Repeated positive experiences activate these systems and provide the foundation for the brain's organization and functioning throughout life.

Neurons in the brain are specialized cells that transmit information throughout the body. The neurons present in the brain need to establish and reinforce connections with other neurons and at birth, most of these connections have not yet happened. The brain does not function to its fullest capacity until the cells are connected.

“Learning starts in infancy, long before formal education begins and continues throughout life…
Early learning begets later learning and early success breeds later success.”

James Heckman, Nobel Prize-winner, Economics

These connections between brain cells, called synapses, form complex pathways in the brain to control how children see, hear, move, talk, think, remember, and express emotion. During the first year of a baby's life, these brain pathways build very quickly. Between birth and age 6, the brain creates more synapses than it needs. The synapses that are used frequently become a permanent part of the brain. That explains why repetition of experiences is so important in the early years of a child’s life. The synapses that are not used frequently are eliminated or pruned. The brain actively produces and eliminates synapses throughout life. This “use it or lose it” process is known as “wiring” the brain.

Brain Connections - Synapse Development

From Rethinking the Brain: New Insights into Early Development by Rima Shore (NY: Families and Work Institute, 1997). Illustration by Dr. Harry T. Chugani, Wayne State University

Positive relationships and learning opportunities spark brain activity so that the synapses associated with these experiences become permanent. The brain is far more impressionable (neuroscientists use the term “plastic”) in early life than in maturity. This plasticity has both a positive and a negative side. On the positive side, it means that young children's brains are more open to learning and enriching influences. On the negative side, it also means that young children's brains are more vulnerable to developmental problems if they are in an environment that is chronically stressful or are neglected or abused. Young children who are involved in stressful situations produce hormones that inhibit brain development.

Windows of Opportunity

There are sensitive periods in the development of the brain. The brain has more potential for growth or plasticity and these periods are broad windows of opportunity for certain types of learning. For example, children can learn a second language with ease during the preschool years, a task that is much more difficult as an adult. Brain research highlights birth through age 3, and up until 6 years of age, as sensitive periods for development and learning in all areas. In fact, throughout the early years and up until about 24 years of age, there are a series of time periods, or “windows,” in which a person can best learn a particular skill. However, if the opportunity for learning does not arise, these potential new skills are not lost forever. Individuals still learn new things during their lives, but the learning will take more time and effort if it doesn’t occur during these sensitive periods.

Researchers have identified the time frames for the development of certain skills.

Sensitive Periods in Early Brain Development

How Parents can Support Brain Development

What love can do . . .

Parents and other caregivers play a crucial role in the brain development of young children. It is critical for the infant to have positive interactions for the brain to grow. Infants learn through their senses and are keenly aware of familiar smells, tastes, sights, sounds and touches. Touch actually sends signals to the brain telling it to make connections and grow. Children in the early years flourish when adults are warm, loving and consistently responsive to their cues and clues.

A healthy body supports a healthy brain...

Children must have regular medical check-ups, as well as routine developmental, vision and hearing screening during the early years. There are also strong correlations between the amount of sleep a child gets and normal brain development. A nutritious, balanced diet feeds the brain and allows it to make the connections that result in healthy growth and development.

Provide opportunities for play...

Play is critical to all areas of the child’s development – physical, social, emotional, and intellectual. Brain growth is not fostered through passive attention to television or through direct instruction by adults; instead it is best stimulated as the child is actively engaged in sensory play experiences. Children thrive in environments that include a balance between indoor and outdoor experiences, with a great emphasis on movement and physical activity. Adults can enhance brain development as they provide all types of play to facilitate pathways to learning.

Talk, share books, stories and music . . .

Talk to your baby and respond to his or her attempts to communicate. Listen to music and sing together. Read daily to your baby. Research has shown that reading to a child is one of the most predictable activities in supporting the child’s readiness for school.

Further Reading


Appendix G: UEY Community Poster

Research shows that children are born ready to learn but not all children arrive at school ready to learn. Starting school with social skills and confidence means our children have the right tools for school.

For more information on investing in the early years contact:

Kim Perrin
UEY Pictou Antigonish Guysborough
Kids First Association
kperrin@paguey.ca

755-KIDS (5437)

Kids First, http://kids1st.ca/assets/UEY/UEY-Posters.pdf accessed on April 1, 2015
Appendix I: Excerpt from UEY Family Resource Guide

4

The Case for Early Learning

The brain develops at a rapid pace and is highly sensitive during the first three years of life.

Appendix J: UEY Kings County, Nova Scotia Community Data Maps

Appendix K: UEY Dixie Bloor Community Data Maps