PERSPECTIVES ON SOCIAL INCLUSION

Leave No Child Behind!

Social Exclusion and Child Development

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About the Laidlaw Foundation

The Laidlaw Foundation is a private, public-interest foundation that uses its human and financial resources in innovative ways to strengthen civic engagement and social cohesion. The Foundation uses its capital to better the environments and fulfill the capacities of children and youth, to enhance the opportunities for human development and creativity and to sustain healthy communities and ecosystems.

The Foundation supports a diverse portfolio of innovative and often unconventional projects in three program areas: in the arts, in the environment and improving the life prospects for children, youth and families.

Working for social inclusion is a theme that underlies much of the Foundation's activities. The key words in the Foundation's mission — human development, sustainable communities and ecosystems — imply that achievement will rely on the enhancement of capacity and capability. Not only is social inclusion being developed as an emerging funding stream, it is an embedded Laidlaw Foundation value, both structurally and programmatically.

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Foreword:

The Laidlaw Foundation's Perspective on Social Inclusion

The context for social inclusion

Children have risen to the top of government agendas at various times over the past decade, only to fall again whenever there is an economic downturn, a budget deficit, a federal-provincial relations crisis or, most recently, a concern over terrorism and national security. While there have been important achievements in public policy in the past 5 to 10 years, there has not been a sustained government commitment to children nor a significant improvement in the well-being of children and families. In fact, in many areas, children and families have lost ground and social exclusion is emerging as a major issue in Canada. Examples abound and include these facts.

- the over-representation of racial minority families and children among those living in poverty in large cities, and the denial of access to many services by immigrant and refugee families;

- the 43% increase in the number of children in poverty in Canada since 1989, the 130% increase in the number of children in homeless shelters in Toronto, as well as the persistence of one of the highest youth incarceration rates among Commonwealth countries;

- the exclusion of children with disabilities from public policy frameworks (e.g. the National Children's Agenda), from definitions of 'healthy' child development and, all too often, from community life.

These situations provide the context for the Laidlaw Foundation's interest in social inclusion. The Foundation's Children's Agenda program first began exploring social inclusion in 2000 as a way to re-focus child and family policy by:

- re-framing the debate about poverty, vulnerability and the well-being of children in order to highlight the social dimensions of poverty (i.e. the inability to participate fully in the community)

- linking poverty and economic vulnerability with other sources of exclusion such as racism, disability, rejection of difference and historic oppression

- finding common ground among those concerned about the well-being of families with children to help generate greater public and political will to act.

The Foundation commissioned a series of working papers to examine social inclusion from a number of perspectives. Although the authors approach the topic from different starting points and emphasize different aspects of exclusion and inclusion, there are important common threads and conclusions. The working papers draw attention to the new realities and new understandings that must be brought to bear on the development of social policy and the creation of a just and healthy society.

These are:

- Whether the source of exclusion is poverty, racism, fear of differences or lack of political clout, the consequences are the same: a lack of recognition and acceptance; powerlessness and 'voicelessness'; economic vulnerability; and, diminished life experiences and limited life prospects. For society as a whole, the social exclusion of individuals and groups can become a major threat to social cohesion and economic prosperity.

- A rights-based approach is inadequate to address the personal and systemic exclusions experienced by children and adults. People with disabilities are leading the way in calling for approaches based on social inclusion and valued recognition to deliver what human rights claims alone cannot.

- Diversity and difference, whether on the basis of race, disability, religion, culture or gender, must be recognized and valued.

The 'one size fits all approach' is no longer acceptable and has never been effective in advancing the well-being of children and families.

- Public policy must be more closely linked to the lived experiences of children and families, both in terms of the actual programs and in terms of the process for arriving at those policies and programs. This is one of the reasons for the growing focus on cities and communities, as places where inclusion and exclusion happen.

- Universal programs and policies that serve all children and families generally provide a stronger foundation for improving well-being than residual, targeted or segregated approaches. The research and anecdotal evidence for this claim is mounting from the education, child development and population health sectors.

Understanding social inclusion

Social exclusion emerged as an important policy concept in Europe in the 1980s in response to the growing social divides that resulted from new labour market conditions and the inadequacy of existing social welfare provisions to meet the changing needs of more diverse populations. Social inclusion is not, however, just a response to exclusion.

Although many of the working papers use social exclusion as the starting point for their discussions, they share with us the view that social inclusion has value on its own as both a process and a goal. Social inclusion is about making sure that all children and adults are able to participate as valued, respected and

contributing members of society. It is, therefore, a normative (value based) concept - a way of raising the bar and understanding where we want to be and how to get there.

Social inclusion reflects a proactive, human development approach to social well-being that calls for more than the removal of barriers or risks. It requires investments and action to bring about the conditions for inclusion, as the population health and international human development movements have taught us.

Recognizing the importance of difference and diversity has become central to new under-

standings of identity at both a national and community level. Social inclusion goes one step further: it calls for a validation and recognition of diversity as well as a recognition of the commonality of lived experiences and the shared aspirations among people, particularly evident among families with children.

This strongly suggests that social inclusion extends beyond bringing the 'outsiders' in, or notions of the periphery versus the centre. It is about closing physical, social and economic distances separating people, rather than only about eliminating boundaries or barriers between *us* and *them*.

The cornerstones of social inclusion

The working papers process revealed that social inclusion is a complex and challenging concept that cannot be reduced to only one dimension or meaning. The working papers, together with several other initiatives the Foundation sponsored as part of its exploration of social inclusion , have helped us to identify five critical dimensions, or cornerstones, of social inclusion:

Valued recognition– Conferring recognition and respect on individuals and groups. This includes recognizing the differences in children's development and, therefore, not equating disability with pathology; supporting community schools that are sensitive to cultural and gender differences; and extending the notion to recognizing common worth through universal programs such as health care.

Human development – Nurturing the talents, skills, capacities and choices of children and adults to live a life they value and to make a contribution both they and others find worthwhile. Examples include: learning and developmental opportunities for all children and adults; community child care and recreation programs for children that are growth-promoting and challenging rather than merely custodial.

Involvement and engagement – Having the right and the necessary support to make/be involved in decisions affecting oneself, family and community, and to be engaged in community life. Examples include: youth engagement and control of services for youth; parental input into school curriculum or placement decisions affecting their child; citizen engagement in municipal policy decisions; and political participation.

Proximity – Sharing physical and social spaces to provide opportunities for interactions, if desired, and to reduce social distances between people. This includes shared public spaces such as parks and libraries; mixed income neighbourhoods and housing; and integrated schools and classrooms.

Material well being – Having the material resources to allow children and their parents to participate fully in community life. This includes being safely and securely housed and having an adequate income.

Next steps: Building inclusive cities and communities

Over the next three years, the Children's Agenda program of the Laidlaw Foundation will focus on *Building inclusive cities and communities*. The importance of cities and communities is becoming increasingly recognized because the well-being of children and families is closely tied to where they live, the quality of their neighbourhoods and cities, and the 'social commons' where people interact and share experiences.

The Laidlaw Foundation's vision of a socially inclusive society is grounded in an international movement that aims to advance the well-being of people by improving the health of cities and communities. Realizing this vision is a long-term project to ensure that all members of society participate as equally valued and respected citizens. It is an agenda based on the premise that for our society to be just, healthy and secure, it requires the inclusion of all.

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Acknowledgements

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Introduction

Social exclusion occurs whenever the environments where people grow up, live and work, and the institutions that govern them, arbitrarily limit their opportunity to participate in society. This assertion is significant because the notion of exclusion is usually applied more narrowly, to groups whose superficial characteristics are transformed, through social construction, into a category of disadvantage. For instance, a lack of wheelchair ramps in colleges and universities can become a self-fulfilling prophecy, restricting educational opportunities for those with certain physical challenges or, a climate of racism may limit life chances according to skin colour. But social exclusion can also occur when no distinguishing features are initially evident; for instance in relation to characteristics that emerge early in life, when a young child is "in the process of becoming." If our physical and social environments, and the institutions that govern them, systematically limit the chances of some groups of children to develop as fully as others, then this too is a form of social exclusion. Accordingly, the concept in this paper is broadened to include two new propositions: that social exclusion can occur in relation to processes where the environment is "creating" the individual, and that social exclusion can be a factor in human development across the entire life course.

This paper argues that Canadian society systematically denies identifiable groups of children the opportunity for healthy develop-ment and that this ought to be recognized as an important form of social exclusion alongside the others. This process of exclusion begins before birth and unfolds slowly over the entire life course.

Social exclusion affects Canadian children by the time they reach kindergarten, since some children are more 'ready for school' than others. These differences are not randomly distributed in society but follow a predictable, systematic pattern. As one looks across the socioeconomic spectrum from the children of the wealthiest and most educated families, to those from the middle, to those from families with the least income and education, an increasing proportion of children are vulnerable in terms of readiness for school: intellectually, socially, emotionally, and physically. This pattern, wherein risk increases in a stepwise fashion as one descends the socioeconomic ladder, is known as a "gradient." The gradient in child development is an important aspect of social exclusion because, once established, it tracks across the life course. Those who enter school in a vulnerable state will tend to be less healthy, experience lower levels of well-being, and be more likely to end up in socially marginal positions as life unfolds.

Gradients in child development are not inherent in the individuals involved, and can be radically altered through social change. The infant brain, which is the master organ of early development, is highly sensitive to the environ-

ment around it. Just as the infant's lungs grow and develop more fully in an environment of high air quality than in one of pollution, the infant brain develops best in an environment characterized by high levels of attachment, stimulation and support. Access to such environments is a precondition for "healthy child development" and a prime determinant of readiness for school. In Canada, we have let socioeconomic circumstances govern our children's access to environments that support healthy development. The result has been large socioeconomic gradients in readiness for school. Canadian society can take effective action to broaden the opportunities for healthy child development and reduce the degree of socioeconomic inequality in readiness for school.

Children who enter formal schooling at widely differing levels of developmental readiness are quickly labelled as winners and losers, and society treats them as such. When treatment accorded those perceived as losers exacerbates rather than mitigates their disadvantage, this reinforces social exclusion. Thus, early child development, occurring before formal schooling begins, is an issue in social exclusion during the school years, just like physical disability or visible minority status. It is also highly prevalent. In Canadian society approximately 25 per cent of children are developmentally vulnerable when they enter school.

Canadians' chances for full inclusion in adult society depend upon the level of health, well-being, and competence they acquire as they grow and develop from birth to adulthood (herein, "developmental health"). Developmental health, in turn, depends upon the nurturing and stimulating qualities of early childhood environments. Although we tend to think of families as providing the principal environment of early childhood, recent research has made it clear that community and societal factors affect child development at a very early age. Some of these factors are intuitively obvious, such as the influence of broad economic and policy factors on family poverty. But others, potentially just as important, have not been as well recognized. For instance, evidence from the National Longitudinal Study of Children and Youth in Canada has shown that neighbourhood safety, neighbourhood cohesion (on behalf of children), and socioeconomic ghettoization are influencing child development by kindergarten age. This paper will highlight these factors using as an example recent evidence of neighbourhood variations in child development in Vancouver.

Thus, child development is an important point of departure for issues of social exclusion both during the time of childhood, and also, across the entire life course.

Socioeconomic Disadvantage and Developmental Risk

Optimum environments for children have six basic characteristics: they encourage exploration; provide mentoring in basic skills; celebrate the developmental advances of children; encourage children to develop the aptitudes they spontaneously declare to the outside world; provide protec-tion from inappropriate teasing or punishment; and provide a rich and responsive language environment. In our society, access to this kind of environment has a very specific social pattern: it increases with increasing socioeconomic status. That is, on average, as one goes from poor families in poor neighbourhoods, to working class families in poor neighbourhoods,

to working class families in mixed neighbourhoods, to affluent, well-educated families in any neighbourhood, the probability that a child will be found in a high quality early childhood environment rises in a step-wise fashion. This is reflected in "gradients" in early child development; that is, that developmental status rises in a stepwise fashion across the spectrum of social circumstances outlined above.

Gradients are expressed over the entire life course. They appear early in life in relation to infant mortality and low birth weight; then in terms of cognitive and behavioural development by school age. By early adulthood gradients emerge for mental health status, obesity and a series of limiting longstanding illnesses. In late adulthood gradients are found for dementia and chronic diseases. Thus health, well-being and competence all show gradient patterns which, in turn, have common life course determinants.

How does this process unfold? Take, for example, the security of early attachment. A key requisite for optimal child development is secure attachment to a trusted caregiver, with consistent caring, support and affection early in life. The emotional health and habitual way of reacting to new situations displayed by children, adolescents and, ultimately adults, have their basis in the early relationships between the infant/toddler and the people primarily responsible for his or her care. An infant develops the capability of emotional control before the first birthday and a sense of "attachment" to his or her caregivers within the first year. This attachment is the extent to which the infant develops trust that the caregiver will respond promptly and appropriately, thereby providing a sense of security. If the level of trust is high, the attachment is described as "secure." Infants and toddlers with a secure attachment use the emotional

and physical security that it provides as a base from which to explore things and people in the environment. Successful attempts at exploration, in turn, increase the child's self-confidence and encourage more exploration. Thus, security of attachment is linked to a virtuous cycle wherein a securely attached child meets initial success in learning about and mastering his or her environment, developing both competence and self-confidence and readiness to try again.

In Canadian society, many of the factors that allow for secure attachment become increasingly accessible as one goes up the socioeconomic ladder: parents have more options for handling worklife/homelife conflicts; they are more economically secure and secure of their place in society; they are less socially isolated; they are less likely to be depressed; and they are more conscious of the role of the environment in shaping the child. All of these differences have the capacity to transmit themselves to the child in terms of security of attachment and to contribute to a virtuous circle that will express itself in an increased chance of success in early child development.

Early child development, in turn, initiates gradients in health, well-being and competence throughout the life course according to three processes known as latent, pathway and cumulative effects. When specific biological or developmental factors at critical (sensitive) periods at a specific point in the life course have an impact years and decades later, regardless of intervening experience, these are called "latent effects." When early life experiences set individuals onto well-worn life courses that, in turn, affect health, well-being and competence over time, these are called "pathway effects." When advantages or disadvantages accumulate over time, based upon the duration and intensity of exposure to a variety of risk factors,

these are called "cumulative effects." Latent, pathway and cumulative factors act together. Any early life event that exerts a latent effect could also be the first step along a lifelong pathway that might have implications for health, well-being or competence in the future.

Social Patterning in Early Child Development

How does socioeconomic disadvantage translate into developmental risk? To understand this, it is important to return to the notion of the developing brain as an environmental organ. As mentioned before, stimulation, support and nurturing play a role in brain development analogous to air quality in lung development. Spending one's early years in a relatively unstimulating, emotionally and physically unsupportive environment will limit the growth of the developing brain and lead to cognitive, social and behavioural delays that, in turn, will affect subsequent life chances.

The period from conception to school age is a critically important time in human development. Developing fetuses create new brain cells at a rate of tens of millions each week such that, by the time babies are born, they have virtually all the brain cells they will ever have. Fetal development is an issue in social exclusion because it is socially patterned in Canada. Consider, for example, babies born "small for gestational age." These are babies whose birth weight is in the bottom 10 per cent of the population, after taking into account the number of weeks they were in the womb (gestational age). Being small for gestational age is influenced by the quality of the environment within the uterus, placenta, and womb during pregnancy. This, in turn, is influenced by nutrition, stress and exposure to toxic substances, both ambient (e.g. lead) and internally ingested (e.g. drugs of abuse). After birth, being small for gestational age carries with it an increased risk of developmental delay. Our research in Vancouver shows that there is a five-fold difference in the proportion of children born small for gestational age from one side of town to another. In the affluent neighbourhoods on the west side of town, our study showed that approximately 3.5 per cent of babies were born small for gestational age in 1996. In working class neighbourhoods this figure rose above 10 per cent, and rose again to over 18 per cent in the impoverished downtown east side. Thus, a five-fold gradient for subsequent developmental risk was evident across the socioeconomic spectrum by the time of birth.

The newborn's brain, whether small or normal for gestational age, does not look like an adult brain, in that the cell-to-cell connections that characterize a mature brain have not yet been developed. In the first several years of life, a rapid process of brain "sculpting" takes place, during which time networks of cell-to-cell connections are created at the anatomical and biochemical level. This is important because, ultimately, human consciousness is an "emergent property" of these connections. A well-sculpted brain is one with dense networks of cell-to-cell connections within and between various regions of the brain. Brain development is an issue in social exclusion because human experience is a crucial influence in this process of sculpting. Moreover, in Canadian society, it would appear that the different qualities of early experience we provide for our children do make a significant difference.

To be more specific, the brain sculpts

itself in response to two influences. The first is the wide range of stimuli in the immediate environment of the newborn: visual, verbal, emotional, physical, touch, smell and taste. The second influence is biological: the existence of pre-programmed "critical (or sensitive) periods" in brain development, during which specific areas of the brain turn on and become ready to receive environmental stimuli. During critical periods, cell-to-cell connections are sculpted that, in turn, engender specific developmental competencies: cognitive (language and quantitative), sensory, muscular, emotional, behavioural and social.

Our research in Vancouver shows the degree to which the outcomes of these processes are socially patterned. In February 2000 an early developmental assessment of children in senior kindergarten (3,992 children: 3,921 non-special needs and 71 special needs) was carried out by all kindergarten teachers in the Vancouver School Board district. The Early Development Indicator, created at McMaster University by Dan Offord and Magdalena Janus, was the instrument used. It assesses five domains of development: physical health and well-being, social competence, emotional maturity, language and cognitive development and communication skills (in English).

The five maps included in this paper show the proportion of children in each of Vancouver's 23 planning neighbourhoods who fell into the vulnerable category which is the bottom 10 per cent on each scale.[1] Those in the bottom 10 per cent can be said to be "at risk", in terms of readiness for school, in the following respects:

Physical health and well-being: below the 10th percentile, a child with average or poor fine and gross motor skills, sometimes tired or hungry, usually clumsy, with flagging energy levels, and average overall physical development

Social competence: below the 10th percentile, a child with poor overall social skills, with regular serious problems in more than one area of getting along with other children, accepting responsibility for own actions, following rules and class routines, respect for the property of adults, children and others, problems with self-confidence, self-control, adjustment to change, usually unable to work independently.

Emotional maturity: below the 10th percentile, a child with regular problems managing aggressive behaviour, prone to disobedience, and/or easily distractible, inattentive, impulsive, usually unable to show helping behaviour towards other children, and who is sometimes upset when left by the caregiver.

Language and cognitive development: below the 10th percentile, a child with problems in both reading/writing and numeracy, unable to read and write simple words, uninterested in trying, and often unable to attach sounds to letters, has difficulty with remembering things, counting to 20, recognizing and comparing numbers, and is usually not interested in numbers.

Communication skills and general knowledge: below the 10th percentile, a child with poor communication skills and articulation, limited command of English, who has difficulties in talking to others, understanding and being understood, and has poor general knowledge.

If "all things were equal" 10 per cent of the children in each neighbourhood would have fallen into the bottom 10 per cent for Vancouver as a whole. But, as the maps show, all things were NOT equal. The between-neighbourhood differences are very large, much larger than we had anticipated. For the language and cognitive development scale, 21 per cent of children in the highest risk neigh-

bourhood fell into the bottom 10 per cent of town, while in the lowest risk neighbourhood, no children fell into the bottom 10 per cent; for physical health and well-being, the range was 0 – 22 per cent; for social competence, the range was 1 – 17 per cent; for emotional maturity, the range was 2 – 16 per cent; and for communication skills in English, the range was 0 – 16 per cent. Thus, Vancouver is divided into some zones with virtually no children at developmental risk, other zones where risk is intermediate on one or more dimension, and several zones where risk is high on all dimensions.

The pattern of lower-to-higher developmental risk across Vancouver neighbourhoods is closely associated with increasing neighbourhood unemployment, declining median incomes, an increasing proportion of low-income families, an increasing proportion of those spending a large fraction of their income on rent, and an increasing proportion of single-parent families. Moreover, some of the services and facilities that are meant to compensate for socioeconomic risk are not spacially distributed in a manner that would achieve the goal of narrowing gaps. For instance, there is a ten-fold difference in the number of licensed child care and preschool slots per child under the age of six across Vancouver neighbourhoods. In the best-served area there are 0.89 slots per child under the age of six, whereas in the least well-served area there are only 0.09 slots per child. The least-served areas are found, predominantly, in the working-class sections of town where child care subsidy programs do not adequately meet needs. Other compensatory services can be shown to perform a valuable function, but in so doing, serve to underscore, rather than eliminate neighbourhood differences in the environments for child development. For instance, our mapping of kindergarten vision screening, at age five, showed a ten-fold gradient across neighbourhoods in the proportion of children who need referral to a specialist for vision problems. The high-risk neighbourhoods were also those at high developmental risk. In other words, children with vision problems in more privileged neighbourhoods were being identified earlier. Thus, the evidence of effectiveness of public health screening simultaneously underscored the prospect that a much higher proportion of children in high-risk neighbourhoods were not getting timely access to services that could remove important barriers to their early development.

Seventy-one children (1.8 per cent of the total) were identified as having special needs in Vancouver School Board kindergartens that were part of this study. Seven of 23 neighbourhoods had no special needs children, one neighbourhood had ten, and the rest had between one and nine. As a group, the special needs children exhibited more vulnerabilities than non-special needs children on each of the scales, but vulnerabilities were as strongly socially patterned for special needs children as they were for the non-special needs children. The table below shows large developmental advantages for the 12 special needs children from nine privileged neighbourhoods in Vancouver compared to the 59 special needs children from the remaining 14 less privileged neighbourhoods. This table, when compared to the maps of the non-special needs children, strongly suggests that the social environment influences the development of children with and without recognized disabilities to at least an equal degree.

Table 1: Proportion of special needs children who scored in the vulnerable category, by scale and neighbourhood

Scale	Overall 1	Privileged Neighbourhoods	Non-privileged Neighbourhoods
	(n=71)	(n=12)	(n=59)
Physical health and well-being	55%	33%	59%
Social competence	54%	33%	58%
Language and cognitive	54%	33%	56%
Emotional development	44%	25%	47%
Communication skills & general knowledge	46%	17%	53%

The Biology of Social Exclusion

What follows is a brief description of some of the biological aspects of child development that may translate into social inclusion and exclusion over time. By introducing biology I am not making a deterministic claim, wherein inherent differences among individuals translate into success or failure across the life course. Instead, I am introducing a concept of "biological embedding" wherein the development of the human brain, and the biological pathways that sense and respond to threat are, in part, a product of environmental influences in early childhood. Biological embedding is an iterative process, wherein the developing individual is shaped both by the qualities of early environments and experiences to which he/she is exposed and also by the way in which the environment responds to the unique aptitudes and personal characteristics he/she displays. In parallel, social exclusion arises both from early developmental environments that distort the process of biological embedding and from environmental responses that exacerbate, rather than mitigate, developmental vulnerabilities.

Among the key functions of early brain development is the evolution of the systems that sense safety and threat in daily experience, and mount a biological response to them. In simple terms, the system can be thought of as having three "compartments." The first part, the limbic system, is a primitive structure of the brain that humans share with all other mammalian species. Its development and function are highly responsive to secure attachment, in a manner described in the previous section of this paper. The limbic system carries within it (in neurobiological form) the individual's sense of security of belonging (or its absence) in relation to daily experience. Opportunities for optimum conditioning of the limbic system are socially patterned in our society.

The second compartment is found within a higher structure of the brain known as the "pre-frontal cortex." This is the executive system, that plays a key role in interpreting the prevailing conditions surrounding the individual, and selecting and assessing responses to these conditions. Notwithstanding the notions of Descartes, this "mind" does not operate separately from the body, but understands the environment and the alternative courses of

action as a function of a full range of sensory input. Most important is the third compartment of the system, which includes the stress/stress-response pathways. There are many components of this system, but two of them are best understood. I will call these the fast and slow axes. The fast one, the sympatho-medullary-adrenal (SAM) axis, secretes adrenalin (epinephrine) and noradrenalin (norepinephrine) as an immediate, short-term response to physical, mental and emotional experiences perceived as stressful. The slow pathway, the hypothalamic-pituitary-adrenal (HPA) axis, secretes cortisol on a more protracted basis.

The limbic, pre-frontal cortex, SAM, and HPA are in constant communication with one another, with neurochemical messages travelling in all possible directions. Perceptions of the world shape stress responses, stress responses shape perceptions and the choices of responses, self-concept shapes perceptions of the world, and so forth. Each of these systems is conditioned by early experiences and, in turn, their function over the life course is shaped by this early conditioning. In other words, it is impossible to account for social behaviour without taking into account the biology of certain key organ systems in the body. But this is not biological determinism. Biological determinism would require that the systems develop according to rules that have nothing to do with the environment. What is crucial here is that these systems do not grow in isolation, but are shaped by early experience. The manner in which they function as host defense systems, and the ways that they influence human behaviour across the life course, are emergent properties of an iteration between nature and nurture.

From this bio-developmental perspective, social inclusion and exclusion depend upon how the environments in which the child grows up, lives and learns, serve to shape the development of systems like the one described above and, on an ongoing basis, call forth responses from them. Early developmental experiences condition the sensing pathways that apprise the developing child of his/her place in the surrounding world, and whether or not it is threatening. This process of conditioning has both a biological and a behavioural dimension. By the age at which they are interacting in groups, systematic differences in biological responses to their surroundings can be identified among children. These differences affect their ability to deal with social conflict: to fight, negotiate, make friends or alliances, or to withdraw. These responses to the environment, in turn, help determine the child's prospects for future isolation or inclusion.

By age three, observations of children in day care, in conjunction with biological measurements, show that virtuous cycles of inclusion and vicious cycles of exclusion, based upon the principles just described, are already at play. For instance, some children newly entering a child care centre have great difficulty forming friendships and alliances, and respond to social rejection in ways that increase their social isolation. There is evidence that these children's HPA axes are responding to the new social environment in a systematically different way from other children. Similarly, by age two to three, it is possible to distinguish children who do not resort to physically aggressive acts in situations of social conflict, from those who have already learned to suppress physical aggression and use verbal responses instead, from those who persist in physical aggression.

It is for those in the latter group that social exclusion becomes an issue, because the childrens' subsequent life chances begin to depend upon the adult/environmental response to their emerging behavioural differences. Children whose behaviour is physically aggressive may find themselves in varying sorts of

environments, from the authoritarian or apathetic to the conscientious and persistent. Those in an environment where the response is authoritarian or apathetic will tend to continue in their physically aggressive behaviours, while those who are met by conscientious, persistent attempts to move them from physical to verbal methods of negotiation will tend to catch up with their peers. By kindergarten age, these differences become highly predictive of both academic success and behavioural adjustment in school. In this context, having access to an environment where the response is conscientious and persistent rather than authoritarian or apathetic, is an issue in social exclusion.

Children who are still physically aggressive when they reach school are rapidly identified and are at risk of travelling down a well-worn pathway leading to academic failure, marginalization and legal difficulties in the teenage years. Moreover, these well-worn pathways feed back on human biology. They involve a lot more acute and chronic stress than pathways to social success, and have both physiologic and life course consequences. Because the central nervous system, which is the centre of human consciousness, "talks to" the immune, hormone and clotting systems, systematic differences in the experience of life will increase or decrease levels of resistance to disease. Already, by young adulthood, those whose early life course involved failure to adjust behaviourally to school have higher levels of psychological malaise and, by the fourth decade of life, systematically lower health status than their peers. In the next phase of life, these patterns translate into early onset of chronic disease, long-term disability and premature death.

The idea that early childhood experiences have long-term implications is not new. What is new, however, is the emerging understanding of how early childhood experiences change the biology of the developing child in ways that

can influence health, well-being and competence decades later. The knowledge base in this area is exploding. Research on Romanian orphans shows that early nurturant deprivation can condition these biological pathways to increase the risk of social exclusion. Longitudinal studies of aggressive behaviour show that, unless the social environment is adapted to the behavioural responses of the child during the period from age two to five, the risks of social exclusion will be difficult to reverse. Finally, primate studies show that even an hereditary tendency to anxiety or violence can be completely ameliorated by manipulating the nurturing environment in early infancy.

How could biological embedding account for differences in the expectation of health and life decades later in the life course? The answer may lie in the fact that human experience (especially early experience) can systematically alter human biology in ways that have long-term implications for health. In particular, parental and family experience of discrimination and exclusion can be transmitted to the young child through psychosocial pathways that affect the basic physiological development of the brain and the body's stress response pathways.

There is evidence from a body of American research that being a member of an excluded visible minority may have biological effects if the discrimination is experienced early in life; but that these biological effects may be less pronounced, or non-existent, if discrimination begins later in life. Perhaps the most intriguing piece of evidence presented to date shows systematic differences in life expectancy among sub-populations of blacks in New York City. Those who grew up in the southern United States and migrated to New York had the shortest life expectancies. Those from the northern United States who ended up in New York City lived longer than southern blacks, but not as long as New York City whites.

However, blacks from the Caribbean who had moved to New York lived the longest, with life expectancies similar to whites. The leading hypothesis to account for this is that there has been a "gradient" of social exclusion in childhood, wherein southern blacks would have experienced the greatest degree of exclusion in childhood; northern blacks would have experienced qualitatively less exclusion; and Caribbean blacks, growing up in predominantly black societies, would have experienced virtually none.

From Cell to Society

Recognizing the biological basis for social inclusion and exclusion means understanding that early child development cannot be seen as a matter of "one size fits all." Rather, inclusion and exclusion are inseparable from whether or not the individual developing child and his/her environment "fit" in a way that builds, rather than undermines, the biological pathways that support fulfillment of social role functions. Denial of access to such environments is the original act of social exclusion, which becomes compounded over time by trajectories of developmental delay, perverse labelling and exclusion through direct social disqualification.

Denial of access to environments that promote health, well-being and competence is not an inevitable consequence of life for those at the bottom of the social spectrum in advanced capitalist societies. Earlier on in this paper I mentioned the emergence of "gradients" in children's development across the socioeconomic spectrum. Most important here is the observation, coming from international comparison studies, that gradients appear to "flatten up." In other words, those societies that produce the least inequality in health and human development across the socioeconomic spectrum also have the highest average levels of health and development. International comparisons have shown this for the development of literacy and numeracy skills across OECD countries and for health status across the European Community. These investigations have shown that promulgating social policies that "raise those at the bottom" do not, at the same time "lower the top."

Table 2 compares the level of literacy and numeracy among the least well-educated segments of the Swedish, Canadian and American populations. Sweden is a high life expectancy OECD country with a shallow socioeconomic gradient in health status and a high level of income equality. Canada is a moderately high life expectancy country with a steeper socioeconomic gradient in health status and an intermediate level of income equality. The United States is a low life expectancy country with a steep socioeconomic gradient in health status and a low level of income equity. The table shows that literacy and numeracy skills, even among the least-educated parts of Swedish society, are vastly better than in Canada or the United States. High levels of literacy and numeracy can be construed as evidence of healthy child development and societies that produce them are societies that are actively combatting social exclusion in child development. On the other hand, the extent to which high levels of numeracy and literacy have been denied to those who could have achieved them is, then, a measure of social exclusion. This table illustrates, better than any other data that I am aware of, the degree to which social exclusion is built into the Canadian "non-system" of child development.

What are the elements of the Swedish system that may make a difference?

- Programs of population-based prenatal care that reduce the proportion of low birth weight infants.

- Income transfer programs to families with children that result in ten-fold lower rates of poverty among single-parent families than in Canada; and, in general, a series of income redistribution programs that maintain a low level of income inequality.

- Generous, flexible maternity and paternity leave programs, accompanied by incentives to get fathers to take leave as well.

- Programs of flexible leave to handle work-life/home-life conflicts.

- Full removal of financial barriers of access to quality child care.

- Flexible transformations from play-based learning at child care centres to formal education in schools (i.e. more efforts to fit school to child rather than the reverse).

- A plan to ensure that neighbourhoods in large cities (that is, in Stockholm) maintain a socioeconomic mix and do not become ghettoized.

In contrast, Canada's non-system features stagnating family incomes; half of the children in single-parent families living in poverty; and the work-life, home-life conflicts experienced by two-income families resulting in ad hoc child care arrangements which effectively deny the significance of early childhood experiences; public spending on child care and development (outside of Quebec) at less than 10 per cent of the per capita expenditure on school children; and increasing neighbourhood socioeconomic inequality by neighbourhood in Canada's large metropolitan areas. It is in sharp contrast to the relatively generous programs of income security for the elderly that Canada has sustained in recent years.

Table 2: Percentage of those with primary education only who are at each literacy level

Document Scale			
	Lowest	**2**	**3**	**Highest**
Canada	73.6	15.4	9.7	1.3
United States	74.0	18.8	6.3	1.0
Sweden	22.5	38.1	33.2	6.2
Quantitative Scale			
	Lowest	**2**	**3**	**Highest**
Canada	69.4	18.5	11.3	0.8
United States	66.8	23.2	9.1	0.8
Sweden	21.7	32.0	35.3	11.1

Source: Statistics Canada, 1995

Conclusion

Canada's non-system of early child development is typical of the United Kingdom and its other principal cultural ancestors: the United States, Australia and New Zealand. The individualistic principle, that families should bring up their children as they see fit, has not made a successful transition from the rural, small town, extended family environment of the past to the fragmented, isolating and highly mobile society of today. Accordingly, the English-speaking democracies fare poorly whenever child development is compared among the world's wealthy societies.

Recently, the federal and provincial governments signed an agreement to implement a strategy for early child development in Canada. Reducing inequality in child development is an important goal. However, achieving this goal means recognizing that leaving each family to fend for itself is at the root of the inequalities that, in turn, initiate a life course of social exclusion. For it to succeed, the early child development strategy will need to find new ways to share responsibility for the quality of environments children experience when they are young. This is no easy task, because it requires bringing about enduring social change.

At the outset of this process, we should keep the following ideas in mind.

The gradient in child development in Canada demonstrates that there is room for improvement in the environments in which most Canadian children grow up, right across the socioeconomic spectrum, and not just in those walks of life traditionally considered "high risk." In other words, the issue is providing "universal access" to environments that support healthy child development, not just protecting those at high risk.
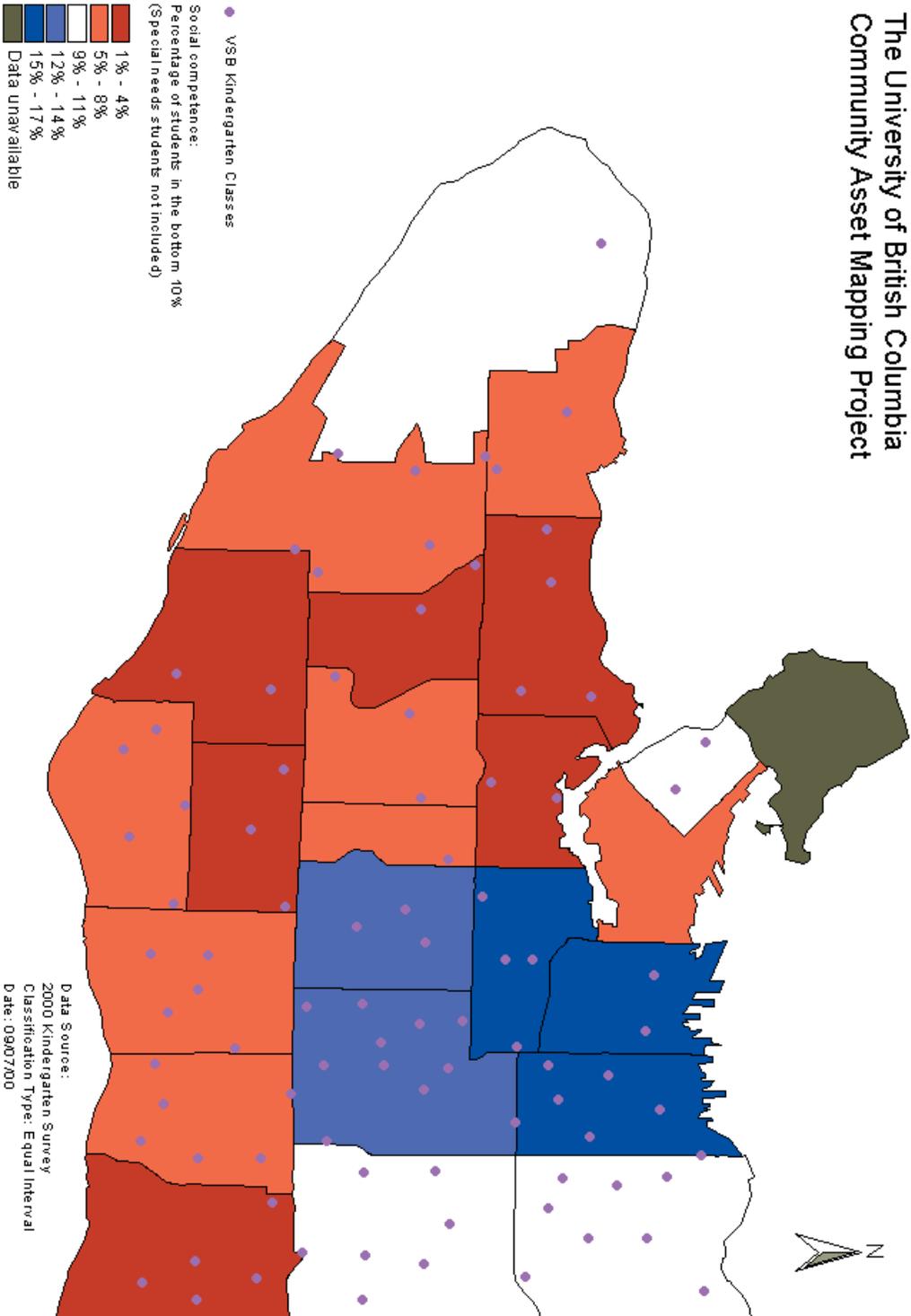
The fact that the developing brain is an "environmental organ" means that improving child development is a question of improving the environments in which children grow up, live and learn, and not just of fulfilling specific service mandates. The challenge is to adopt an environmental perspective when we have traditionally understood our societal responsibility to be restricted to the provision of one-on-one client services.

The fact that health, well-being and competence have common determinants means that the objectives of a wide variety of government departments — federal, provincial and local — can be met by acting in concert. In other words, there is a powerful evidentiary basis for intersectoral action for child development. For example, the laws and regulations that support or inhibit flexible work arrangements for those with young children are not within the control of ministries of health, but much of the evidence showing that such arrangements could improve the quality of children's development, relates to health outcomes.

Finally, the determinants of child development are found at all levels of social aggregation: family, neighborhood, community and economy. This underlines the importance of an approach that is not only intersectoral, but also multi-level; honouring and supporting strong family and community leadership.

Maps

Social Competence:
Percentage of Students in the Bottom 10%

The University of British Columbia
Community Asset Mapping Project

VSB Kindergarten Classes

(Special needs students not included)

Percentage of students in the bottom 10%

Social competence:

1% - 4%
5% - 8%
9% - 11%
12% - 14%
15% - 17%
Data unavailable

Data Source:
2000 Kindergarten Survey
Classification Type: Equal Interval
Date: 09/07/00

N

Physical Health and Well-being:
Percentage of Students in the Bottom 10%

The University of British Columbia
Community Asset Mapping Project

N

Data Source:
2000 Kindergarten Survey
Classification Type: Equal Interval
Date: 09/07/00

• VSB Kindergarten Classes

Physical health and wellbeing:
Percentage of students in the bottom 10%.
(Special needs students excluded)

0%-4%
5%-9%
10%-13%
14%-17%
18%-22%
Data unavailable

Language and Cognitive Development:
Percentage of Students in the Bottom 10%

The University of British Columbia
Community Asset Mapping Project

- VSB Kindergarten Classes

Language and cognitive development:
Percentage of students in the bottom 10%
(Special needs students not included)

- 0% - 4%
- 5% - 8%
- 9% - 13%
- 14% - 17%
- 18% - 21%
- Data unavailable

Data Source:
2000 Kindergarten Survey
Classification Type: Equal Interval
Date: 09/07/00

N

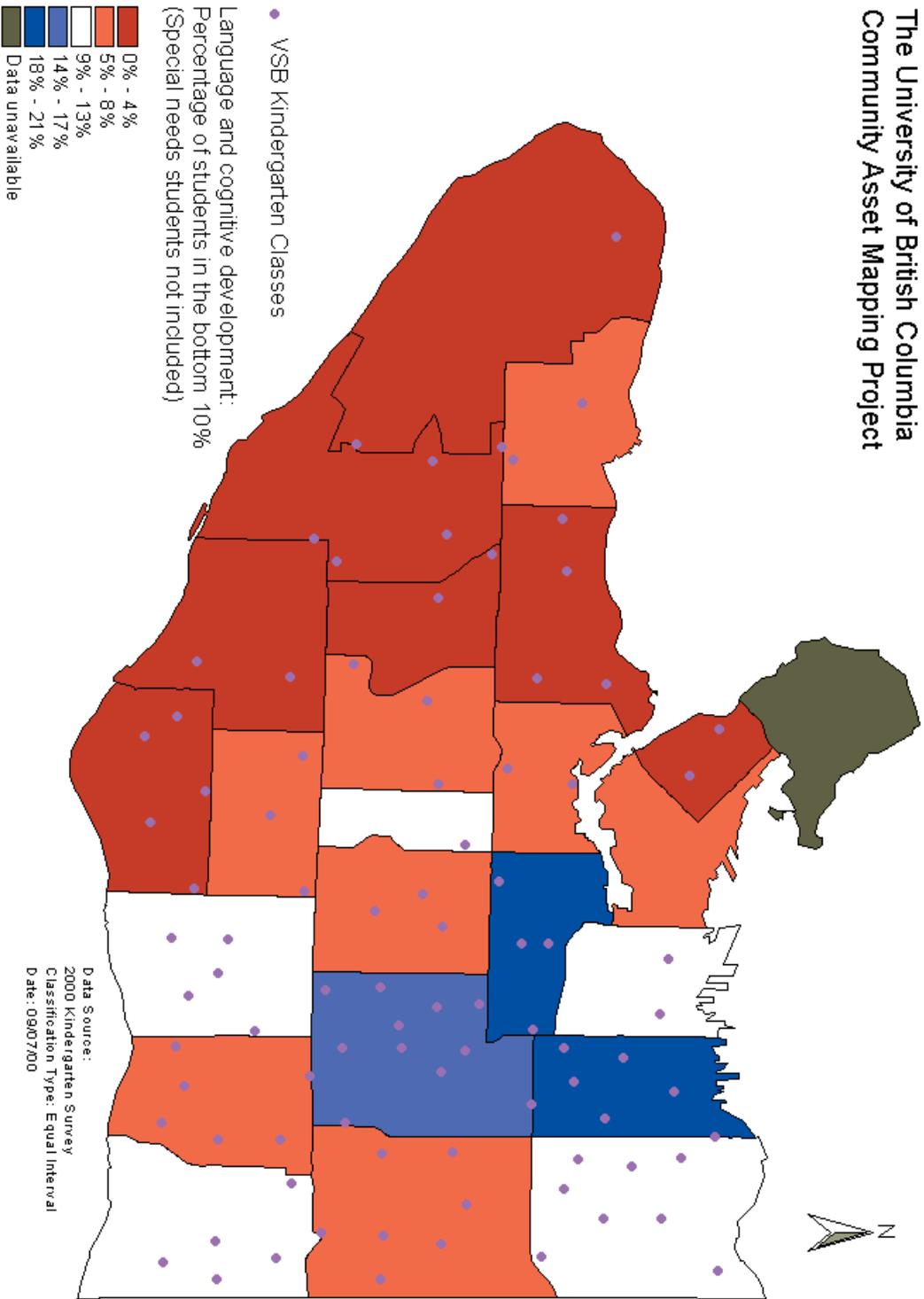# Emotional Maturity:
Percentage of Students in the Bottom 10%

The University of British Columbia
Community Asset Mapping Project

N

Data Source:
2000 Kindergarten Survey
Classification Type: Equal Interval
Date: 09/07/00

· VSB Kindergarten Classes

Emotional maturity:
Percentage of students in the bottom 10%.
(Special needs students not included)

2%-4%
5%-7%
8%-10%
11%-13%
14%-16%
Data unavailable
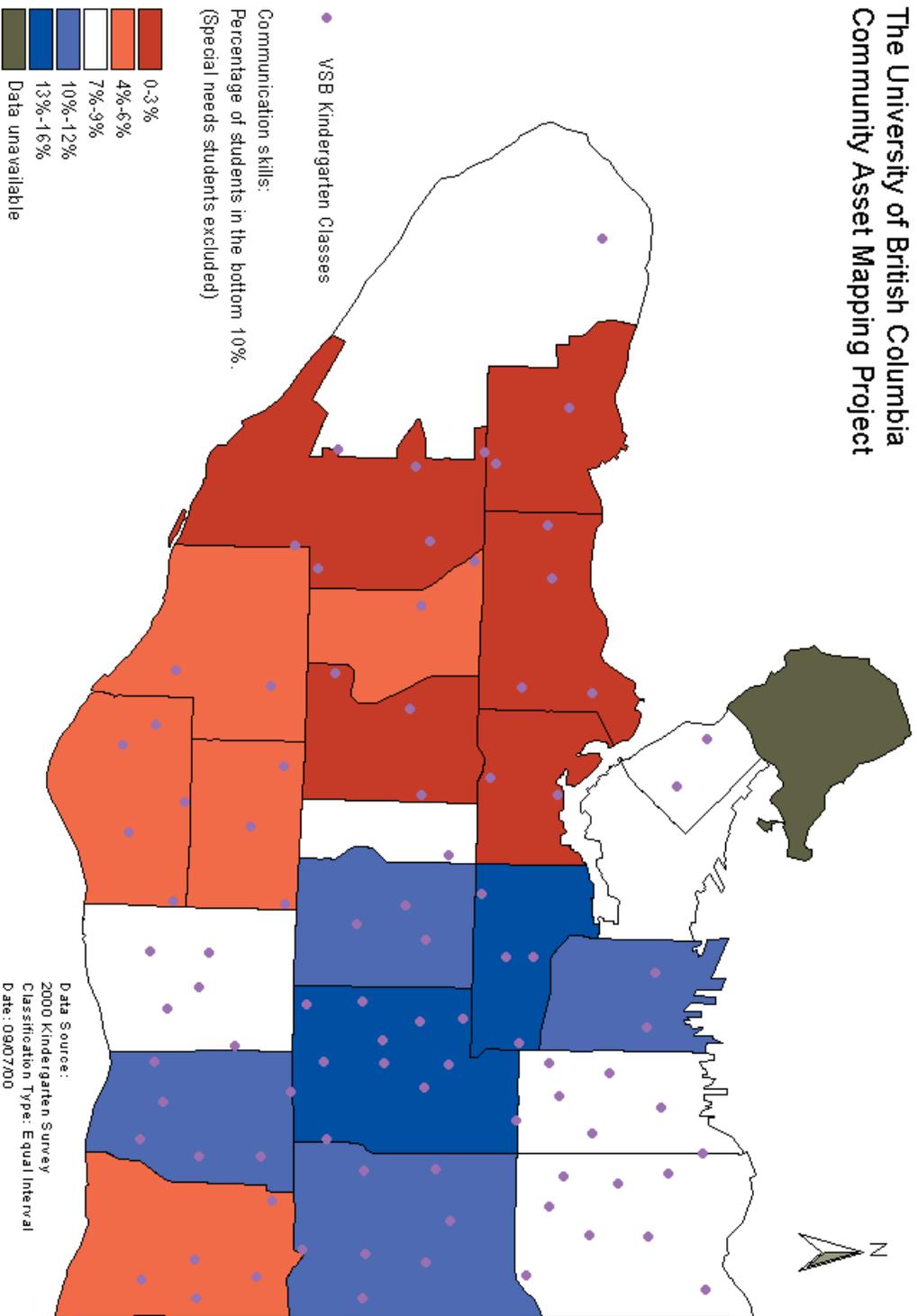
Communication Skills:
Percentage of Students in the Bottom 10%

The University of British Columbia
Community Asset Mapping Project

• VSB Kindergarten Classes

Communication skills:
Percentage of students in the bottom 10%.
(Special needs students excluded)

0-3 %
4%-6%
7%-9%
10%-12%
13%-16%
Data unavailable

Data Source:
2000 Kindergarten Survey
Classification Type: Equal Interval
Date: 09.07.00

N

Endnote

[1] The maps do not include the 1.8 per cent of children labelled "special needs" who were part of this study. The choice to exclude them from the maps was made for heuristic reasons. Our original maps included them, and showed exactly the same patterns as will be described in this section. However, when the special needs children were included, audiences consistently assumed that neighbourhood differences in child development were caused by neighbourhood differences in the distribution of special needs children. This is wrong, so in order to avoid confusion we have removed them from the maps and, instead, discuss them at the end of the section.

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