

Healthy Child Development and Levels of Social Organization: From Neurons to Neighbourhoods to Nation-States

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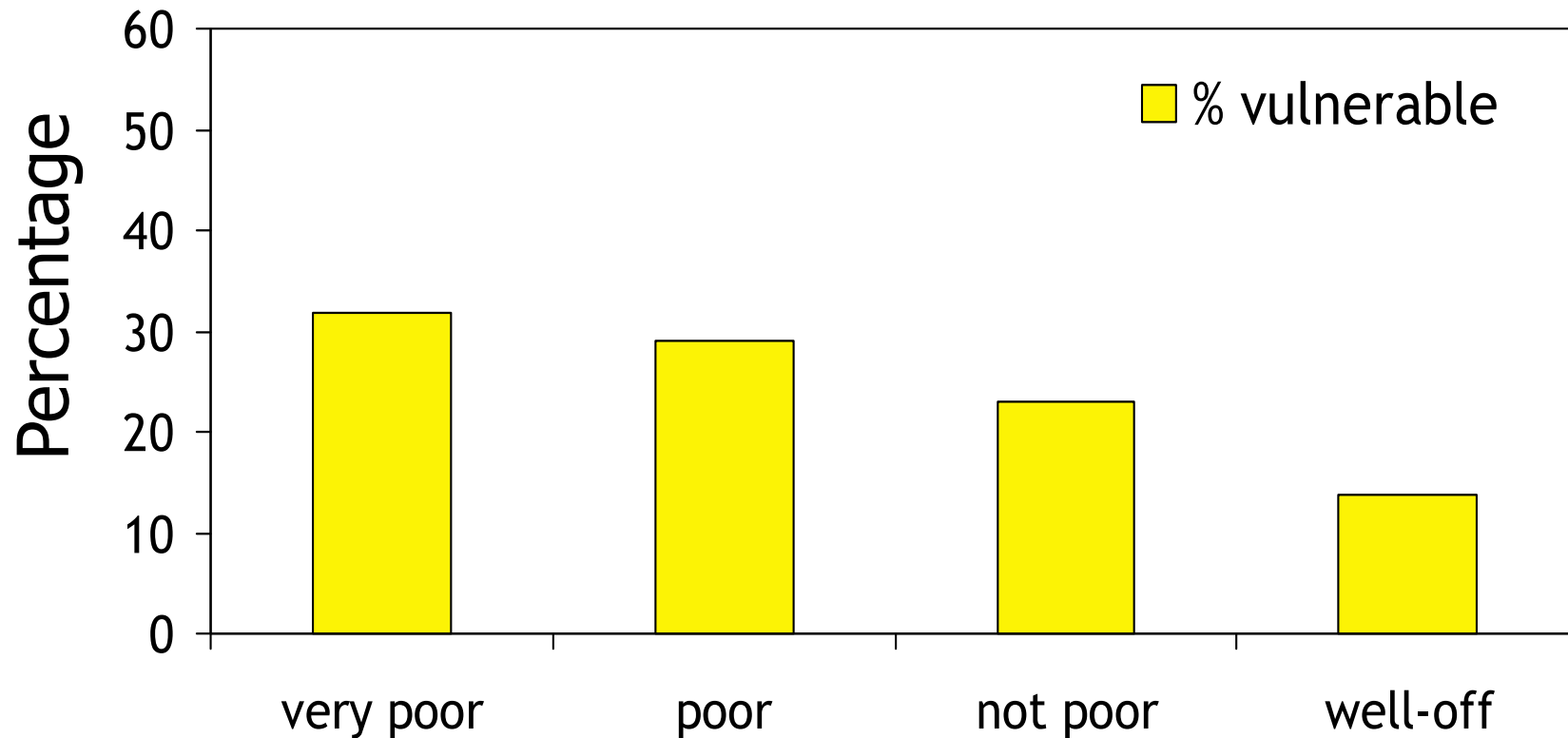
Toronto Best Start Forum, March 29, 2011



Outline: Themes to Address

- Individual => population-based approach
- Cross-sectoral perspective: hyper-integration?
- Levels of social organization
 - Individual
 - Home / household / Neighbourhood
 - Nation-state

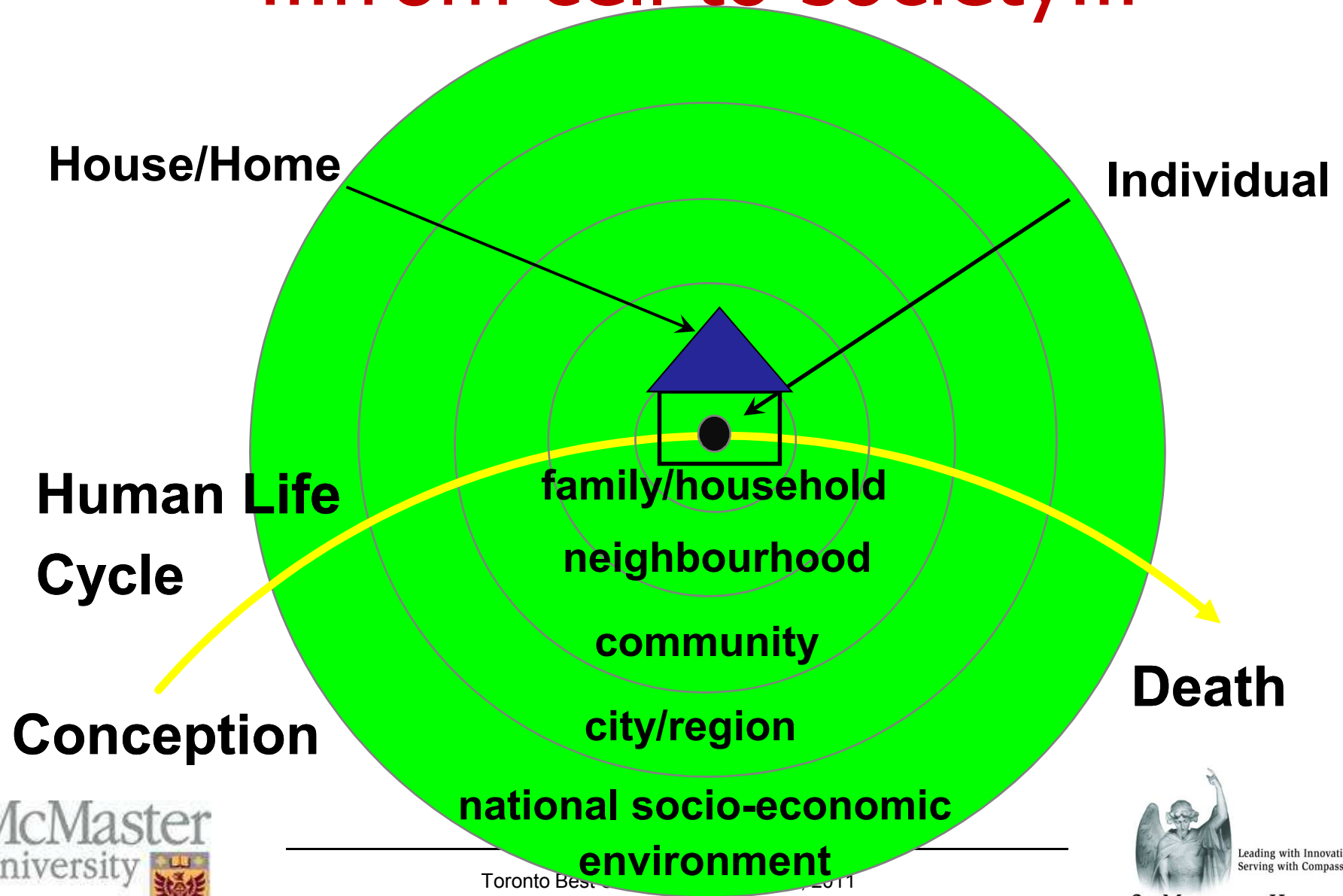
Canada: % Vulnerable on EDI by Socio-Economic Status



Where are the Causes of Disparities in Healthy Child Development?

- There is a strong tendency *built into our systems* to individualize the causes
 - Leads to a focus on remedial treatment downstream
- Ignores *systematic inequities* in *the societal conditions the allow for* healthy child development
 - these are unjust, unfair, and *avoidable*
- Forces us to ask “What are the causes of the causes?”
- What factors at other levels of social organization facilitate equitable outcomes?
- Neurons ↔ Neighbourhoods ↔ Nation-states

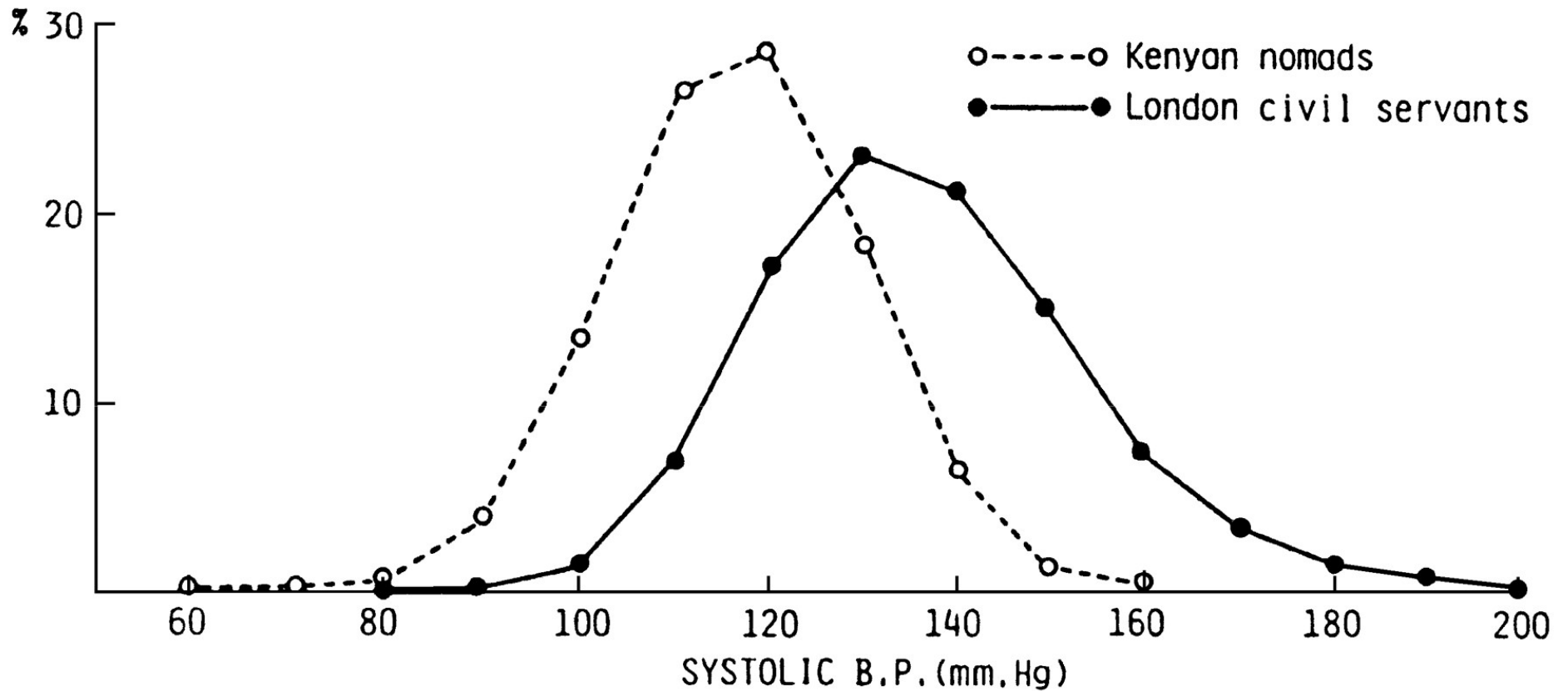
...from cell to society...



Geoffrey Rose: Population Health

- Contrasts the following questions:
 - Clinical, individual-focused: 'Why did *this* patient get *this* disease / disorder at *this* time?'
 - Population-based: 'Why do some populations have different rates of a disease than others and over time?'
- Clinical, individualized approach assumes heterogeneity of risk factors
 - Can *only* identify risk factors that are different for different individuals in the same population
 - If everyone smoked a pack per day, lung cancer would look like a genetic disease;

•Distributions of systolic blood pressure in middle-aged men in two populations^{2,3}.



Rose Fundamentals

- The causes of cases are not the same as the causes of incidence;
- Clinical, high-risk strategy to disease prevention
 - **Advantages:** intervention appropriate to individual; subject motivation; physician motivation; cost-effective use of resources; benefit-risk ratio favourable
 - **Disadvantages:** difficulties and costs of screening; palliative and temporary – not radical; limited potential for individual and population; behaviourally inappropriate (e.g. Obesogenic env't)
- Population-based strategy to disease prevention
 - **Advantages:** radical; large potential for population; behaviourally appropriate
 - **Disadvantages:** small benefits to individual ('prevention paradox'); poor motivation of subject; poor motivation of physician; benefit-risk ratio worrisome (depends on intervention)

More on Rose...

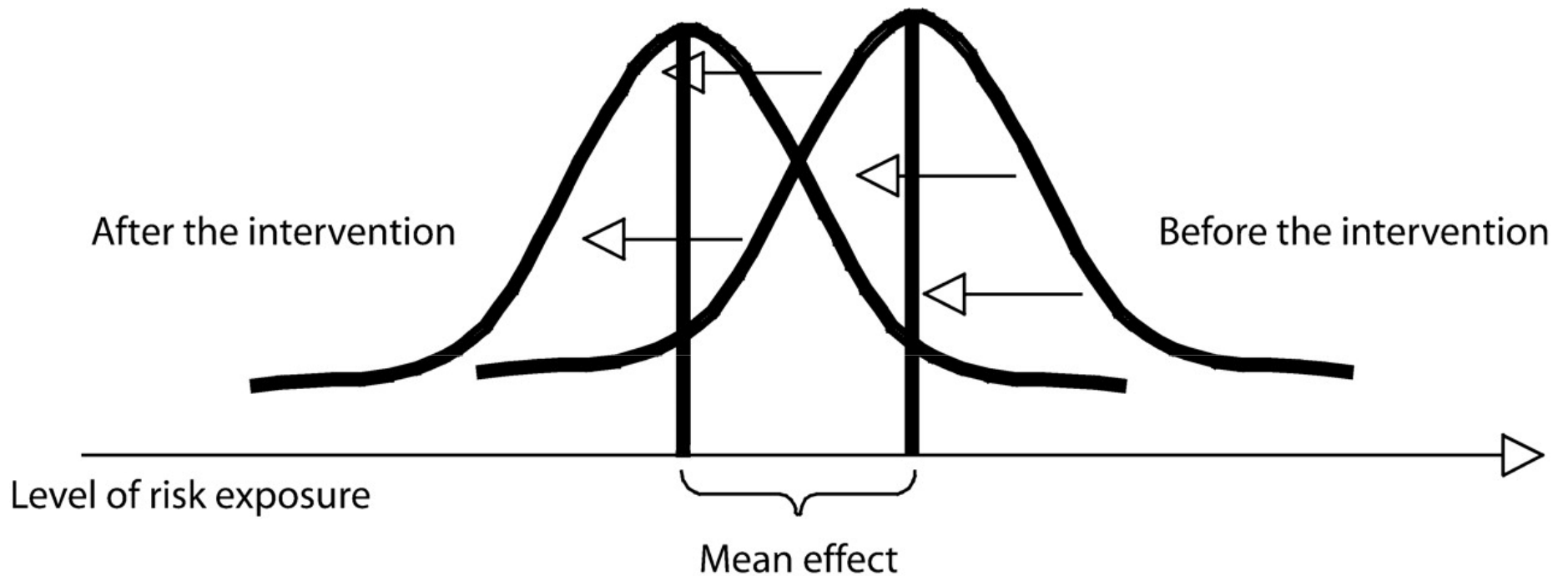
- **Implication for population health interventions:**

- small reductions in risk in large numbers of people may have a bigger population health impact than large reductions in risk in small numbers of people

...BECAUSE....

- *A large number of people at a small risk may give rise to more cases of disease than a small number of people at high risk* (e.g., Down syndrome testing)

•FIGURE 1 Hypothetical homogenous effect of a population-approach intervention on the distribution of risk in a population

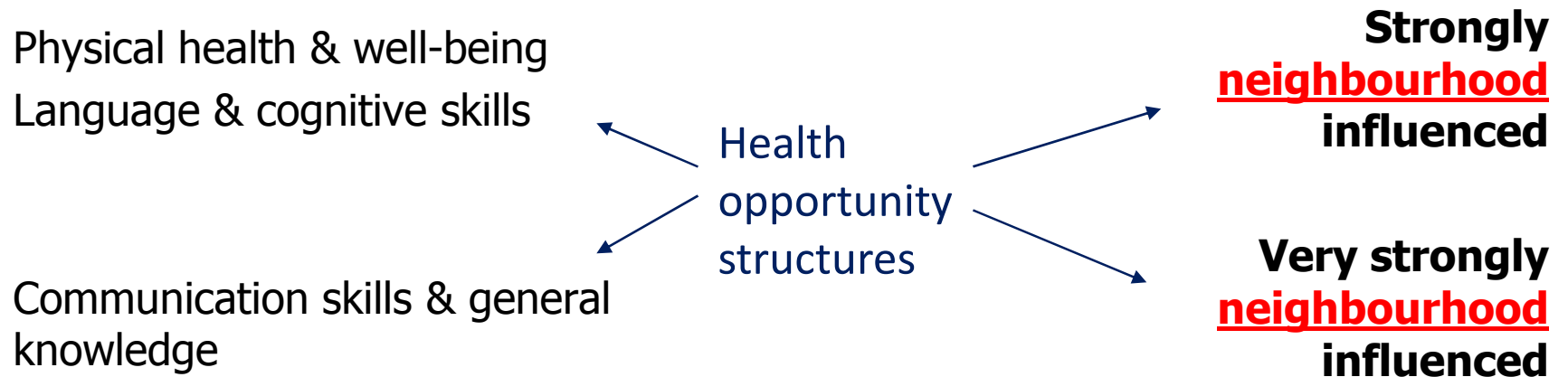


Analysing the Causes of the Causes

- It's one thing to say that factors at different scales matter;
 - It's another matter to say ***which factors*** should be addressed at ***which scale***;
 - It's yet another matter to say ***how*** we address factors at different scales
- Implies that different scales offer new, maybe complimentary *intervention opportunities*
- The following addresses housing, neighbourhoods and related national policies

Levels of influence and pathways

According to a Vancouver study by Oliver, Dunn, Kohen & Hertzman (2007)...



Canadian Housing Data

- incomes ↓ or → for 90% of Canadians past 25 years
 - most working more to reach current levels
- 2007 poll: 67% Canadians believe they are not benefiting from economic growth
- Toronto housing affordability at its worst since 1990
 - 20.5% of Toronto renters spend >30% on shelter
 - 57.9% of female lone parent renter families live in unaffordable housing
 - among poorest quintile, 54.5% in 'core housing need'
- households spending >30% on housing are
 - 2X more likely to have depressive / anxious symptoms
 - 31% more likely to have fair / poor health (Dunn 2002)
- very strong relationship between after-shelter income and food insecurity in families w/ kids

A Conceptual Model of Housing & Health

- Biological, Chemical & Physical Hazards
- Physical Design (accidents, size, organization of space)
- Psychological Benefits (control, meaning)

Self-regulation refers to processes that “enable an individual to guide his/her goal-directed activities over time and across changing circumstances,”

Executive functions include identifying problems, making decisions, planning, staying focused on a task, adapting flexibly to changing situations, controlling impulses, and regulating emotions and behaviour

Attachment: in childhood caregivers who are available and responsive to their infant's needs establish a sense of security for the child, creating a secure base for the child to explore the world.

The Home, Security & Control

Williams (1987) sums up the importance of control in housing and home for lifecourse development when he says,

“[T]he home, in a variety of ways, penetrates deeply into the core of our social being. Our notions of privacy, freedom and choice are, for example, centred in part upon conceptions of the home as a location (both physical and social) where these ideas may be exercised “(156).

The Home & Meaning

- As Csikszentmihalyi and Rochberg-Halton (1981) put it,

“home is much more than a shelter, it is a world in which a person can create a material environment that embodies what he or she considers significant. In this sense, the home becomes the most powerful symbol of the self of the inhabitant who dwells within it” (p. 123).

Control

Meaning



Executive
function

Self-Regulation

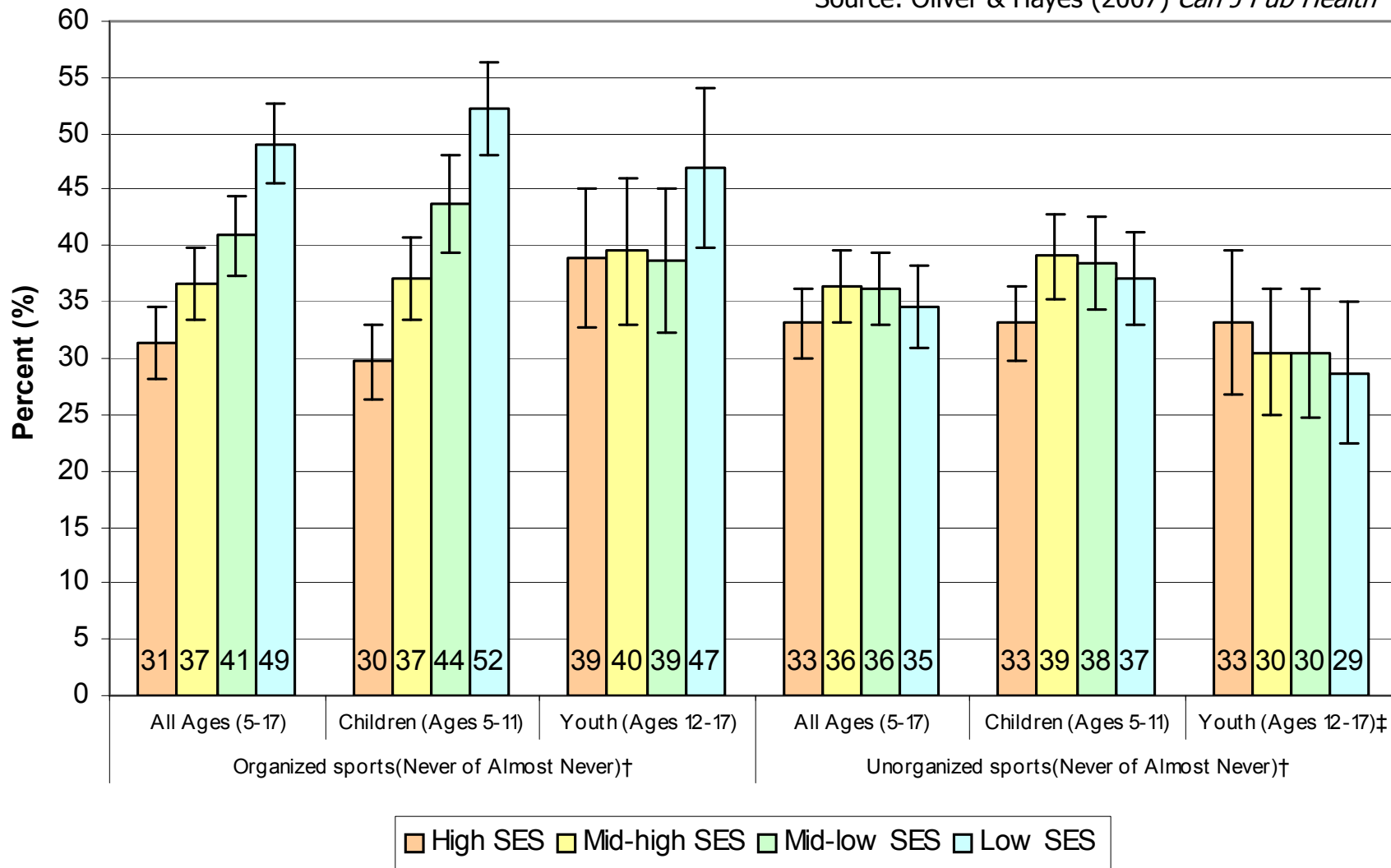
Attachment

A Conceptual Model of Housing & Health

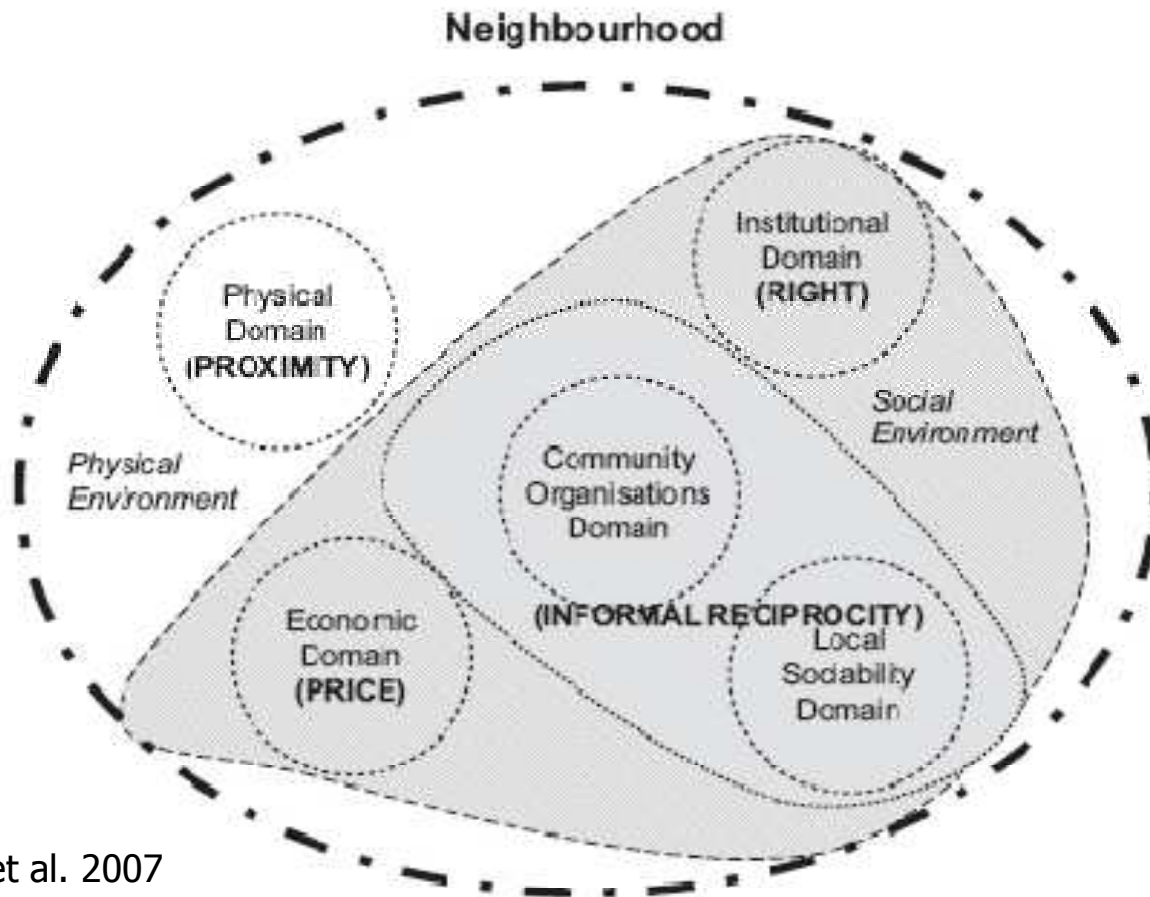
- Biological, Chemical & Physical Hazards
- Physical Design (accidents, size, organization of space)
- Psychological Benefits (control, meaning)
- Social Benefits (friendships, neighbours)
- Financial Dimensions? (own /rent; affordability)
- Location (near services, hazards, community life, etc.)

'Never' or 'Almost Never' Participated in (un)Organized by Sports by SES

Source: Oliver & Hayes (2007) *Can J Pub Health*



Rules Governing Access to Neighbourhood Child Dev't Resources

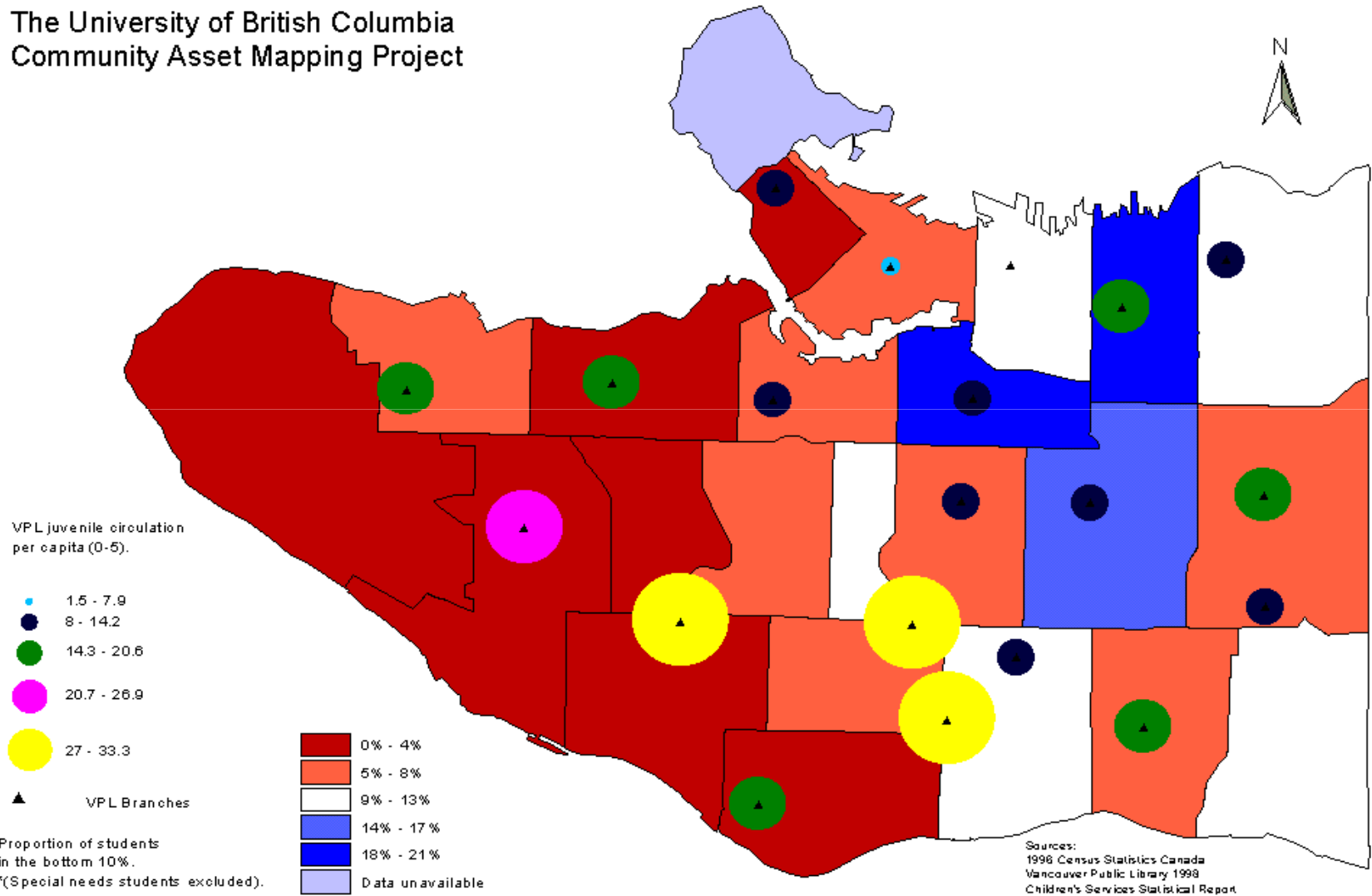


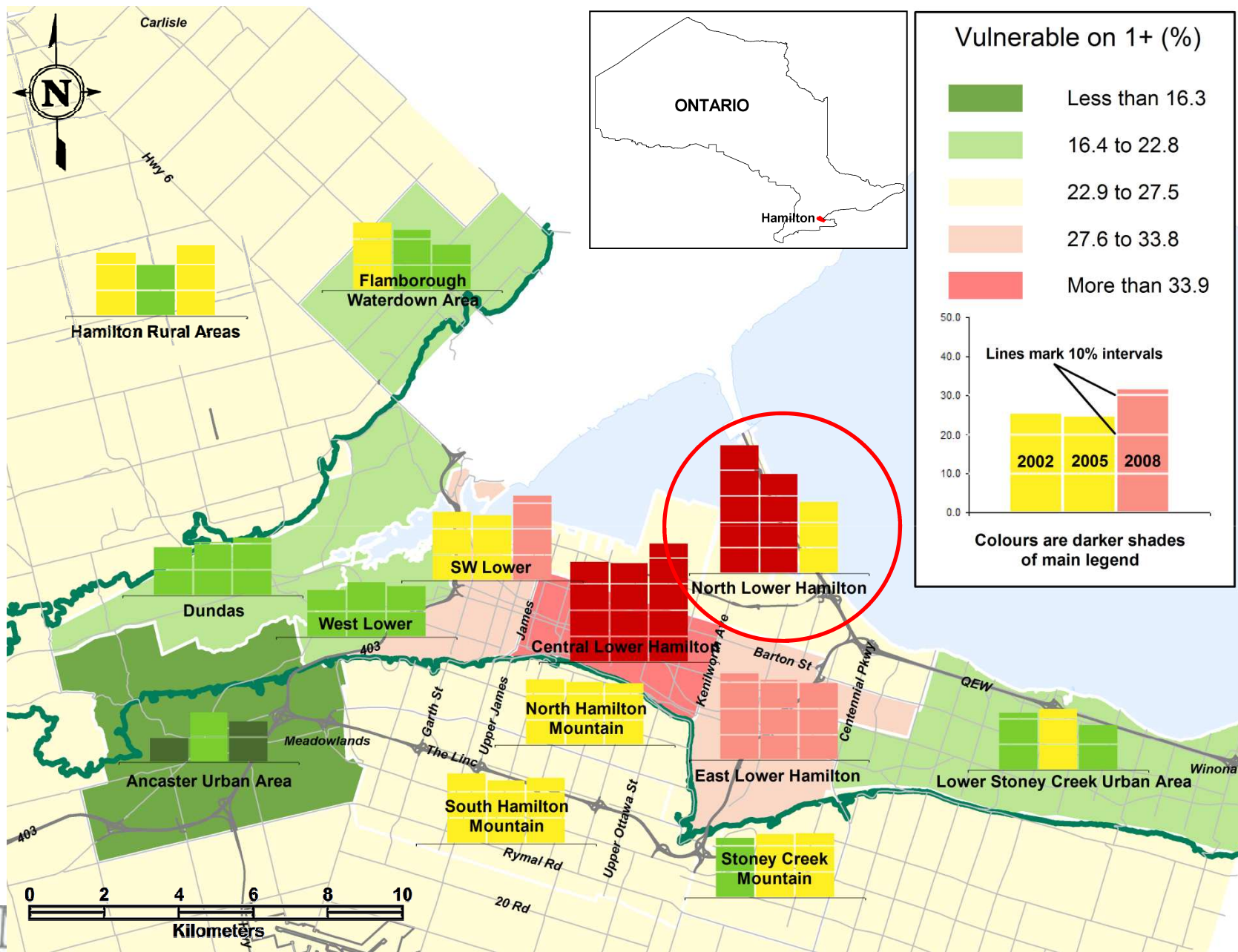
•Source: Bernard, et al. 2007

Fig. 1. Neighbourhood environments and rules of access. *Note:* Four sets of rules (indicated in bold capital letters) determine access to neighbourhood resources coming from the physical environment as well as from the social environment. The neighbourhood social environment (indicated by the light shade of grey) comprises four domains. Two of these domains (indicated by the darker shade of grey) both obey the rule of informal reciprocity. All these environments and domains are in mutual interaction.

Language and Cognitive Development: Proportion of students in the bottom 10% and annual VPL juvenile circulation per capita (0-5)

The University of British Columbia
Community Asset Mapping Project





•Figure 1. City of Hamilton 2008 EDI results by neighbourhood showing change over 2002, 2005 and 2008 and highlighting North Lower Hamilton

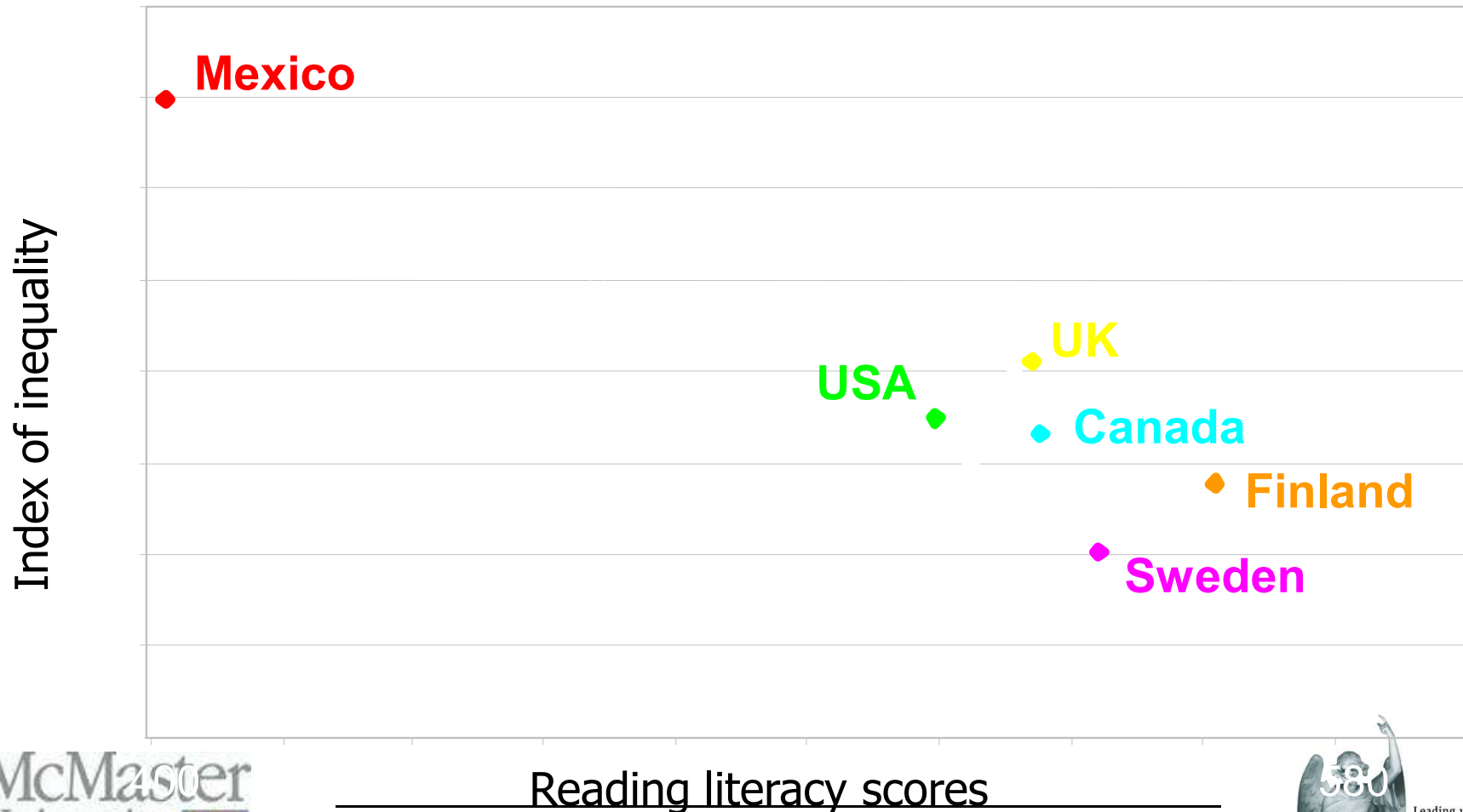
Child Poverty

GDP & Public ECD Expenditure

	Child Poverty	GDP/Cap	Public Exp.
Australia	14.7%	\$28,100	0.4%
Canada	14.3%	\$30,700	0.6%
Finland	2.8%	\$26,500	1.4%
Sweden	4.2%	\$28,000	1.6%
USA	21.9%	\$36,700	0.5%



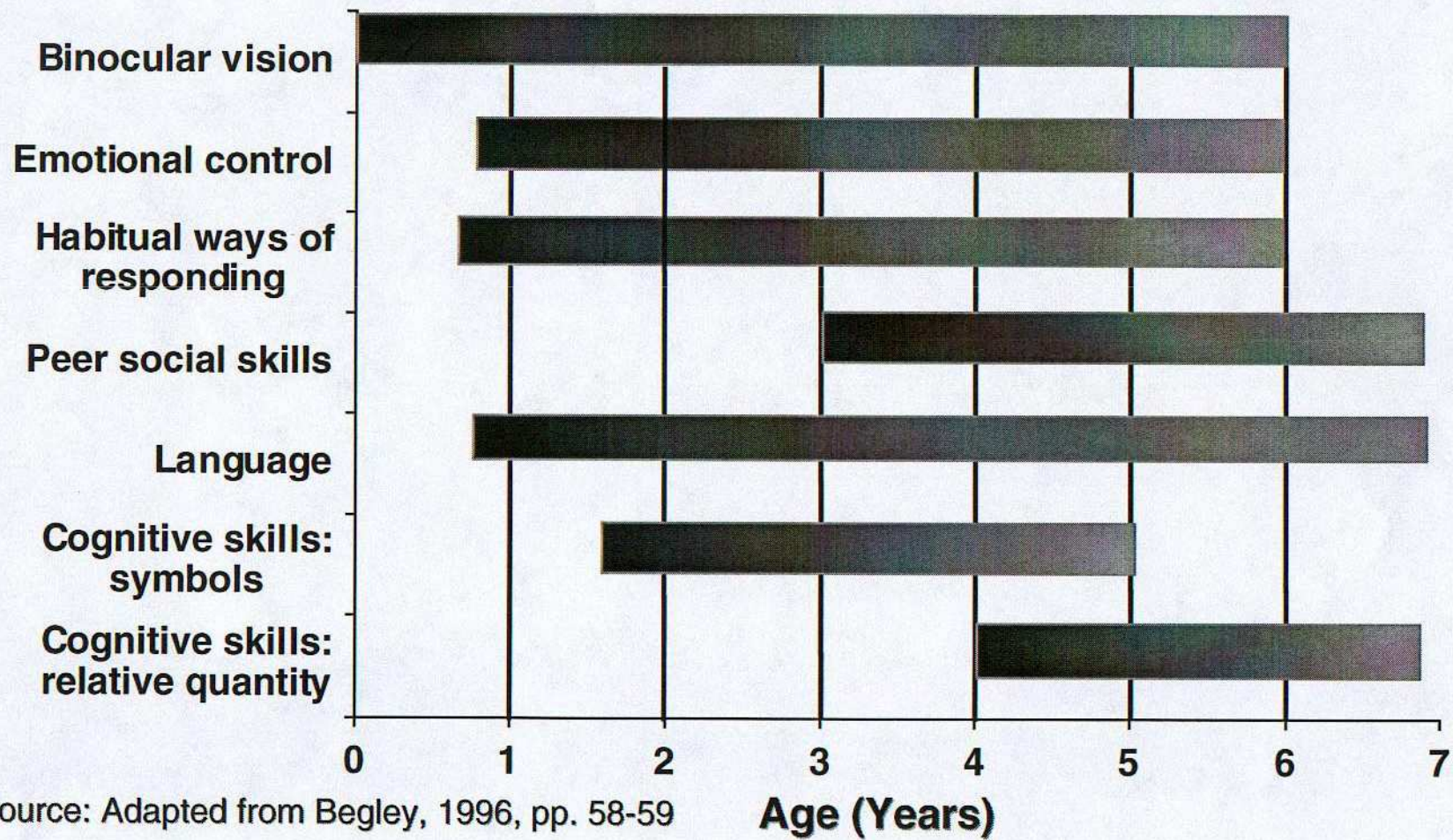
Reading Literacy and Income Inequality – OECD (2004)



Appropriate Level of Intervention May Not be Straightforward: Examples

- Oliver, et al.: neighbourhood factors strongly influence language & cognitive development
 - Yet individual / household factors are influential too
 - Need different approaches at different levels at different ages

Critical Periods for Some Components of School Readiness



Appropriate Level of Intervention May Not be Straightforward: Examples

- Oliver, et al.: neighbourhood factors strongly influence language & cognitive development
 - Yet individual / household factors are influential too
 - Need different approaches at different levels at different ages
- Oliver, et al.: Household / family factors strongly influence emotional maturity & social development
 - In part because the critical period is at a young age
 - Poses a serious policy / program challenge: programs aimed at individuals, the usual response, are stigmatizing for the hardest to reach, most disadvantaged groups

How to make exposure to the causes of strong attachment, self-regulation, and executive function as automatic as turning on the tap and getting clean water?

Implications for Policy

- Need to consider how specific policy sectors (e.g., housing, urban planning, parks & rec) may work to reduce inequities in healthy child development
- No longer can we accept that strategies involving housing and '**privatization of risk**' can be pursued without serious negative consequences
- Need a focus on **security of tenure, affordability** adequacy of housing for early life development
- Also need to emphasize neighbourhood health opportunity structures and the **rules that govern access to resources in neighbourhoods**
- How does policy at other levels (provincial, federal) affect these conditions that promote healthy child development?