Using qualitative and quantitative methodologies to investigate community-level factors that influence early child development: Examples of mixed methods research from Australia and Montreal

Panel Presentation
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kids in communities study

The Kids in Communities Study: Using mixed methods to investigate community-level factors influencing early child development

ABSTRACT 1
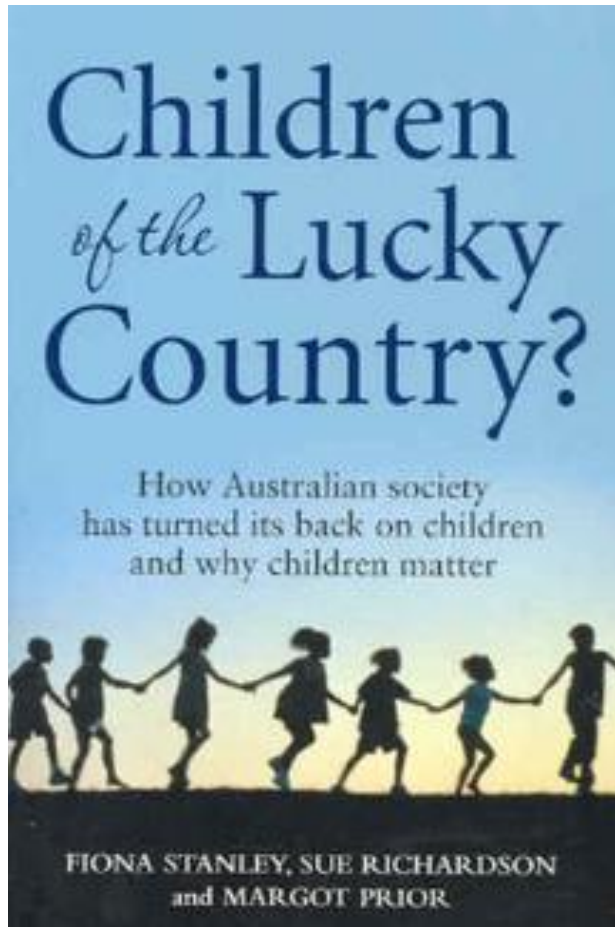Prof Sharon Goldfeld

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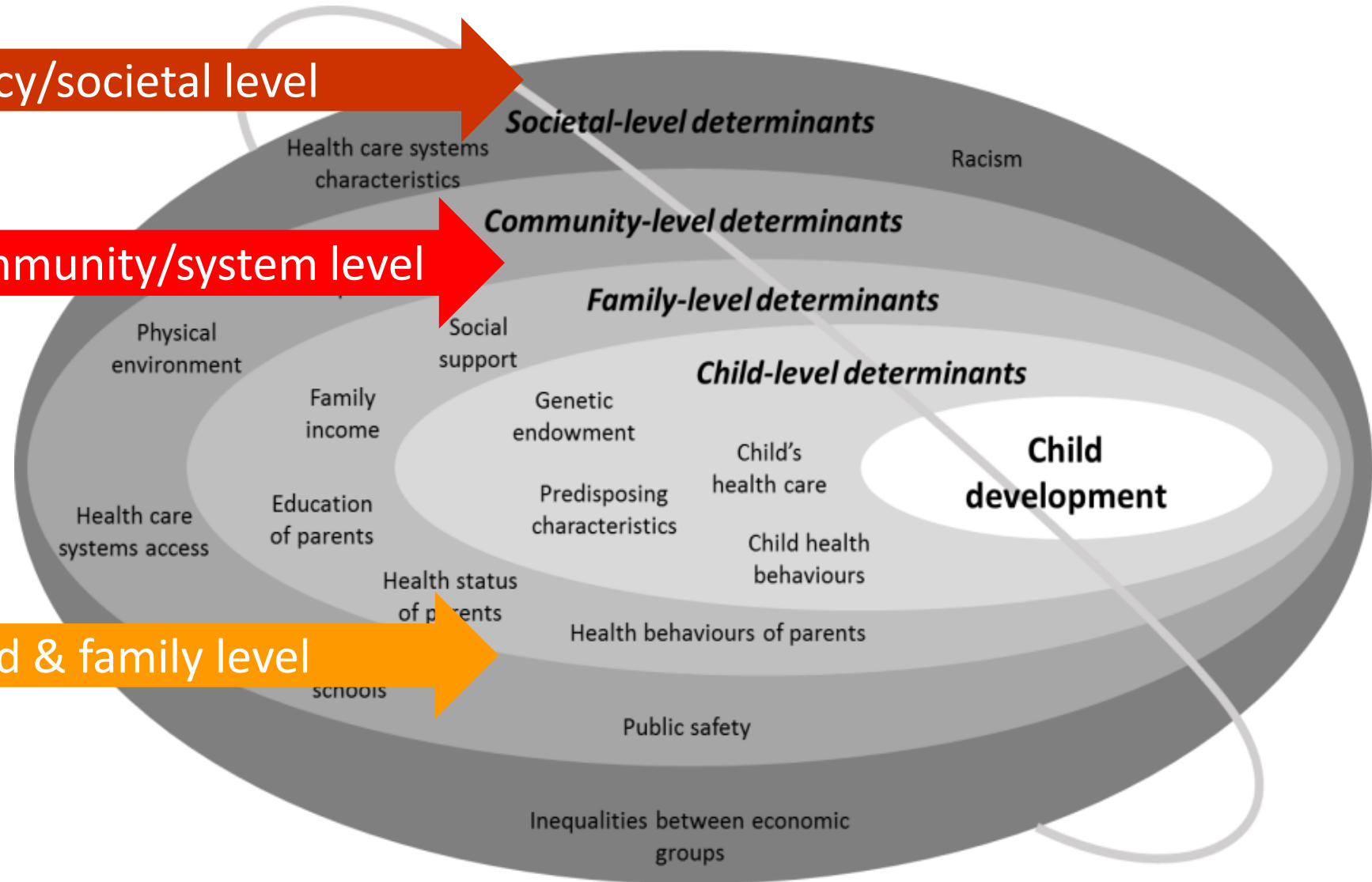THE UNIVERSITY OF WESTERN AUSTRALIA

UNSW AUSTRALIA
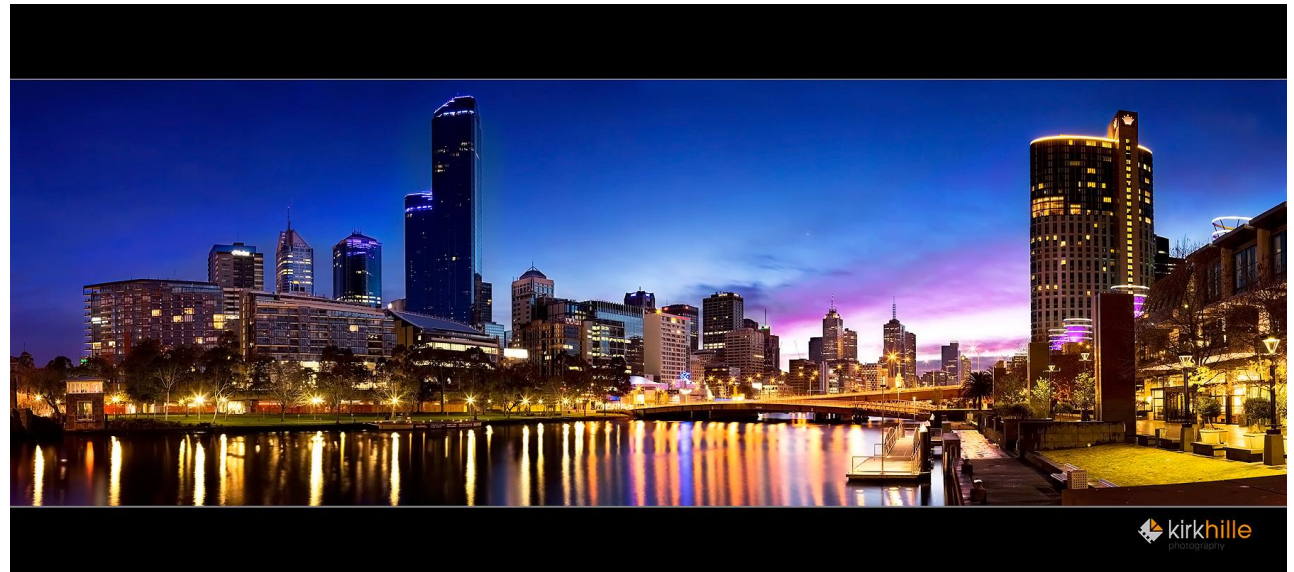
"A society that is good to children is one with the smallest possible <u>inequalities</u> for children, with the vast majority of them having the same opportunities from birth for health, education, inclusion and participation."

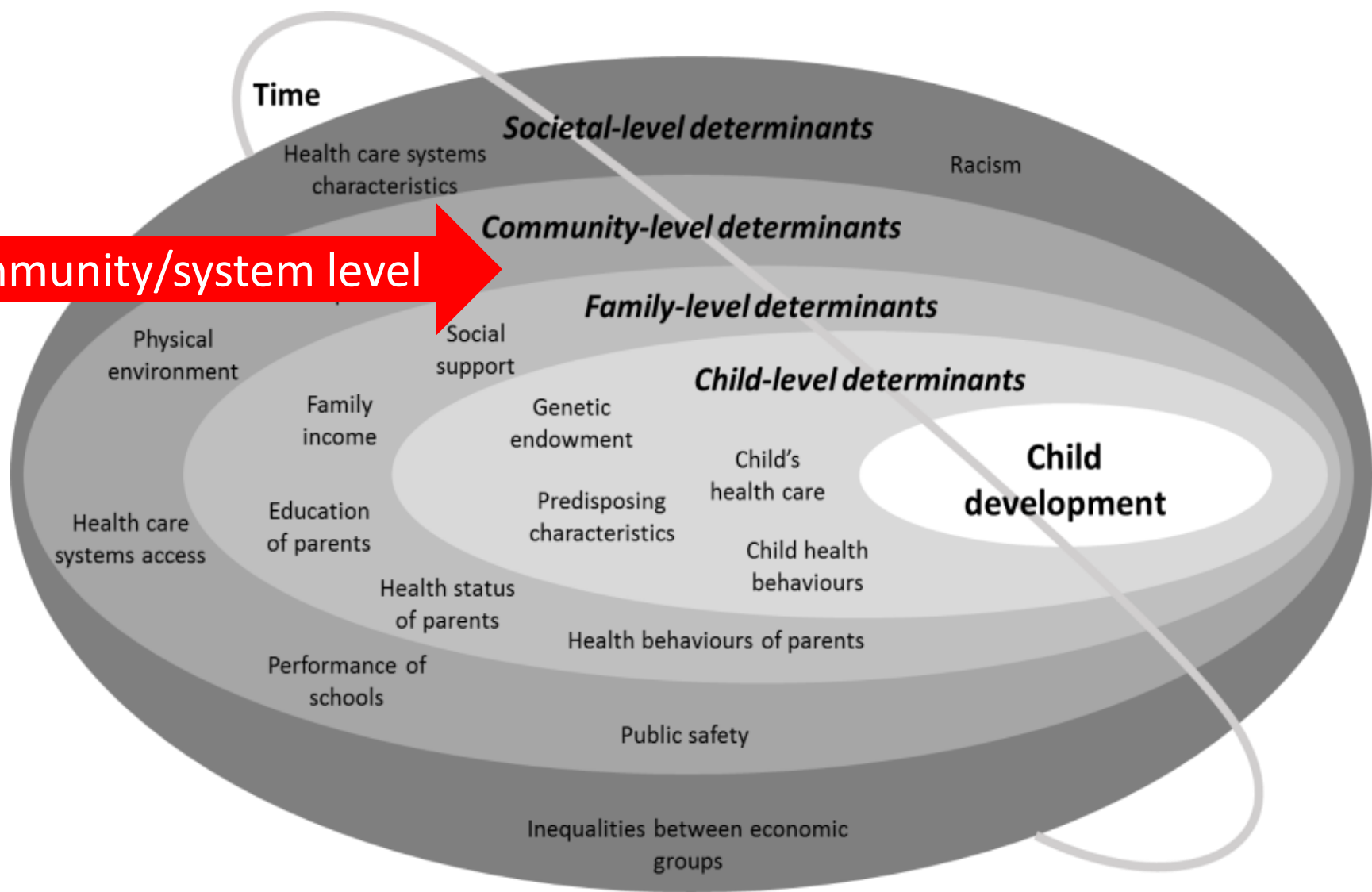*(Stanley, Richardson & Prior, 2005)*

Newacheck, PW, Rising, JP & Kim, SE 2006, 'Children at risk for special health care needs', *Pediatrics,* vol. 118**,** pp. 334-342

Time

Societal-level determinants

Health care systems characteristics

Racism

Community-level determinants

2. Community/system level

Physical environment

Social support

Family-level determinants

Family income

Genetic endowment

Child-level determinants

Child's health care

Health care systems access

Education of parents

Predisposing characteristics

Child health behaviours

Child development

Health status of parents

Health behaviours of parents

Performance of schools

Public safety

Inequalities between economic groups

What is it about where you live that makes a difference to child development?

Goldfeld S, Villanueva K, Tanton R, Katz I, Brinkman S, Woolcock G, Giles-Corti B. Kids in Communities Study (KiCS) study protocol: a cross-sectional mixed-methods approach to measuring community-level factors influencing early child development in Australia. BMJ Open. 2017.doi: 10.1136/bmjopen-2016-014047

Aims and objectives

Identify modifiable community-level factors that influence children's health and developmental outcomes in areas of advantage and disadvantage across Australia

Objectives

- Identify key community-level factors that appear to influence early childhood development (ECD) and examine how these factors interact in different community contexts

- Identify practical, replicable, and robust methodologies for communities to examine and report on their own strengths and weaknesses in ECD

The Project Team

Chief Investigators:

Prof Sharon Goldfeld	(VIC)
Prof Ilan Katz	(NSW)
Prof Rob Tanton	(ACT)
A/Prof Sally Brinkman	(SA)
A/Prof Geoff Woolcock	(QLD)
Prof Billie Giles-Corti	(VIC)

Researchers:

|	
Dr Karen Villanueva	(VIC)
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Ms Ashleigh Wilson	(SA)
Ms Genevieve Smith	(QLD)
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Ms Michelle Tennant	(VIC)
Ms Rachel Robinson	(VIC)
Mr Dominic Peel	(ACT)
Prof Simon Kelly	(ACT)

The Project Partners

Australian Early Development Census (AEDC)

- Population measure of child development

- **Triennial data collections:**
  - 2009: 261,147 children (97.5%*)
  - 2012: 289,973 children (96.5%*)
  - 2015: 302,003 children (96.5%*)

- **Teacher-report:** Teachers complete an online checklist for each child in their first year of formal full-time school* (approx. 5 years old)

- **Five AEDC domains:** Physical health, emotional maturity, language, communication skills and general knowledge

PORTRAIT SYNTHÈSE
DU DÉVELOPPEMENT
DES ENFANTS À LA
MATERNELLE POUR
LES TERRITORIES DE
CLSC DE MONTRÉAL
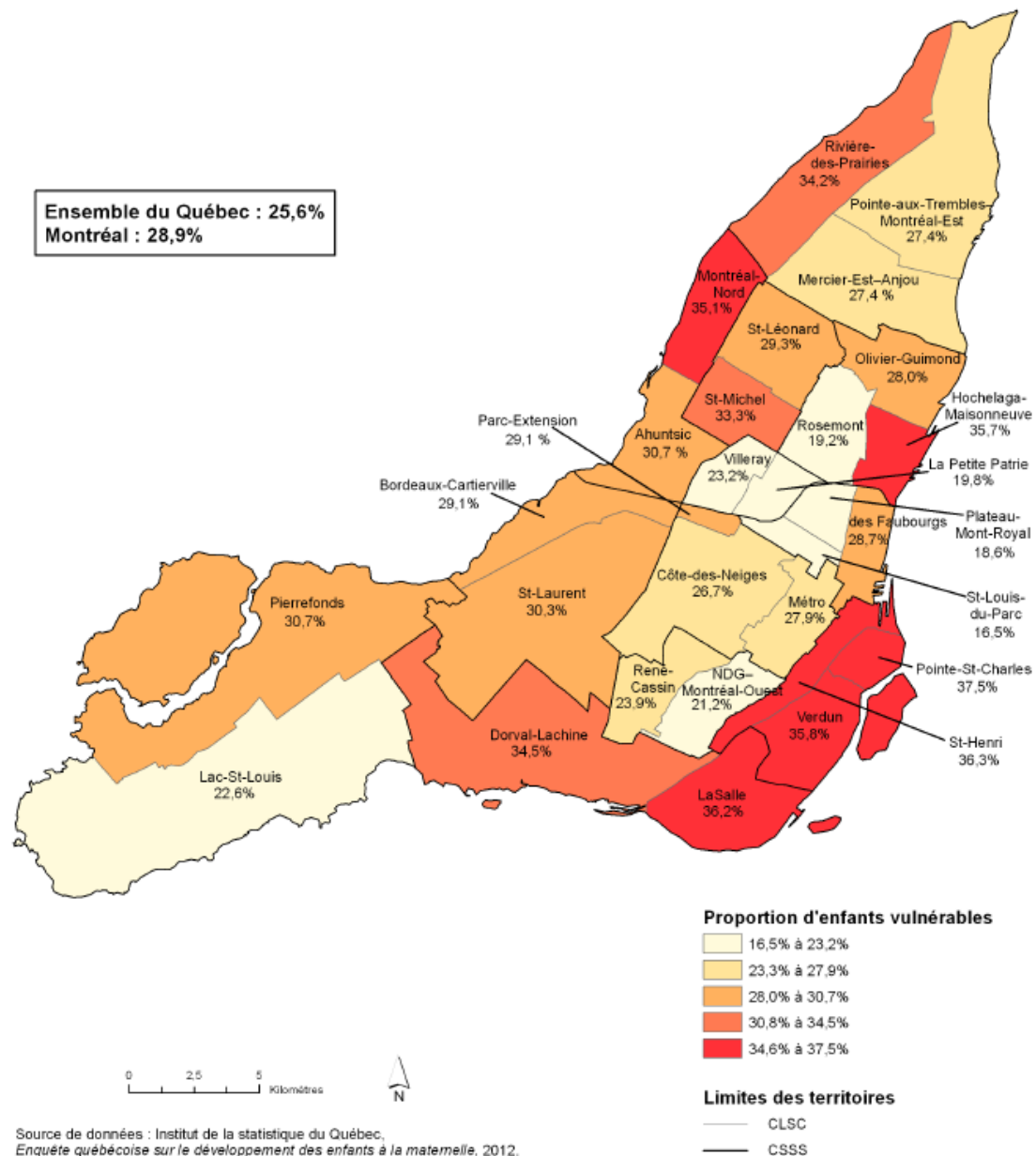
Résultats de l'Enquête québécoise sur le développement des enfants à la maternelle (EQDEM, 2012)

Figure 6 : Proportion d'enfants de maternelle vulnérables dans au moins un domaine de développement par territoire de CLSC, Montréal, 2012

Ensemble du Québec : 25,6%
Montréal : 28,9%

Rivière-des-Prairies 34,2%
Pointe-aux-Trembles–Montréal-Est 27,4%
Montréal-Nord 35,1%
Mercier-Est–Anjou 27,4 %
St-Léonard 29,3%
Olivier-Guimond 28,0%
St-Michel 33,3%
Hochelaga-Maisonneuve 35,7%
Parc-Extension 29,1 %
Ahuntsic 30,7 %
Rosemont 19,2%
Villeray 23,2%
La Petite Patrie 19,8%
Bordeaux-Cartierville 29,1%
des Faubourgs 28,7%
Plateau-Mont-Royal 18,6%
Côte-des-Neiges 26,7%
St-Louis-du-Parc 16,5%
Pierrefonds 30,7%
St-Laurent 30,3%
Métro 27,9%
René-Cassin 23,9%
NDG–Montréal-Ouest 21,2%
Pointe-St-Charles 37,5%
Verdun 35,8%
St-Henri 36,3%
Dorval-Lachine 34,5%
Lac-St-Louis 22,6%
LaSalle 36,2%

Proportion d'enfants vulnérables
16,5% à 23,2%
23,3% à 27,9%
28,0% à 30,7%
30,8% à 34,5%
34,6% à 37,5%

Limites des territoires
CLSC
CSSS

0   2,5   5 Kilomètres
N

Source de données : Institut de la statistique du Québec,
Enquête québécoise sur le développement des enfants à la maternelle, 2012.
Direction de santé publique de l'Agence de la santé et des services sociaux de Montréal, 2013.

Learning from extremes….an example
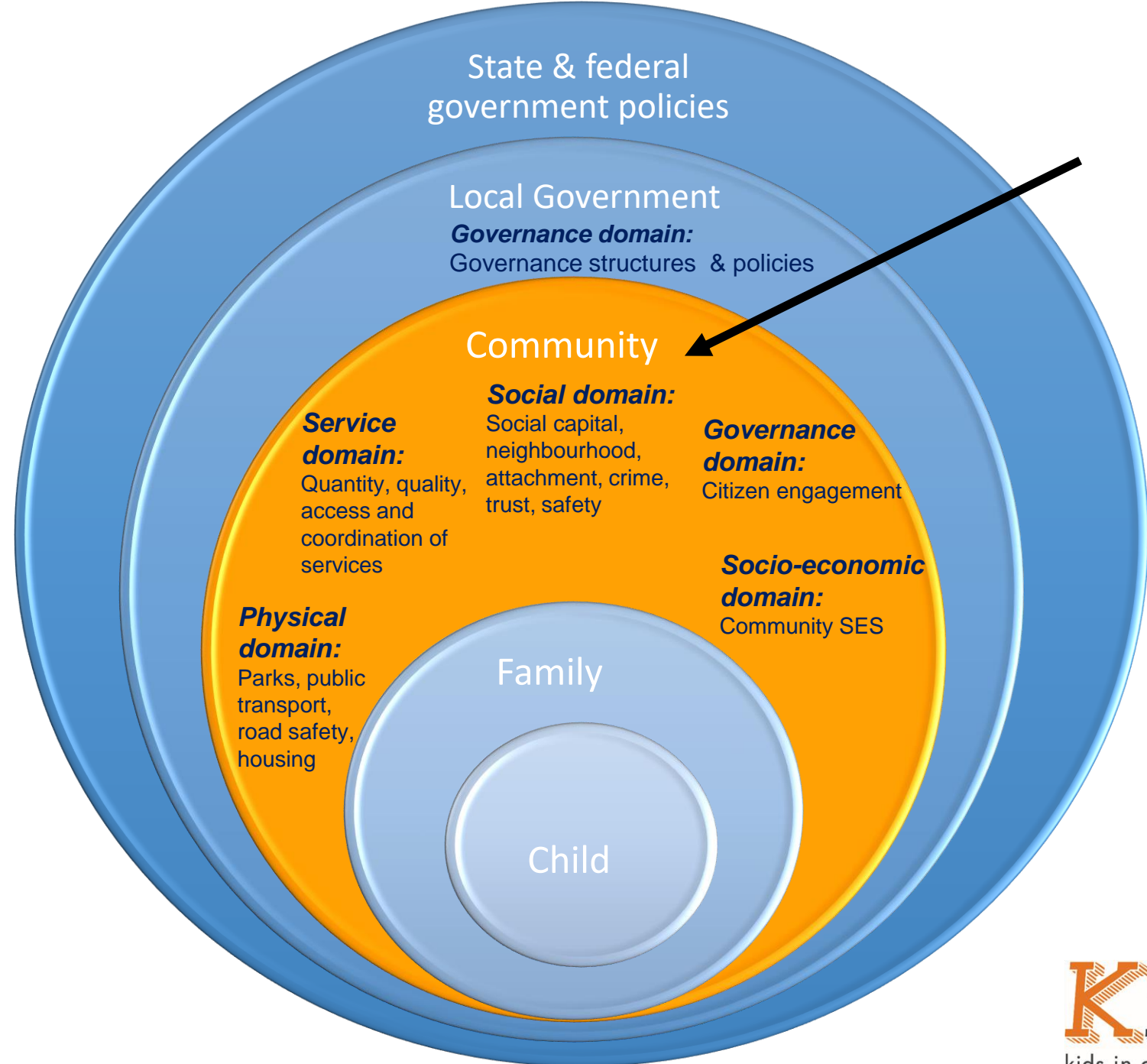

Off-diagonal positive
Low SES, good ECD
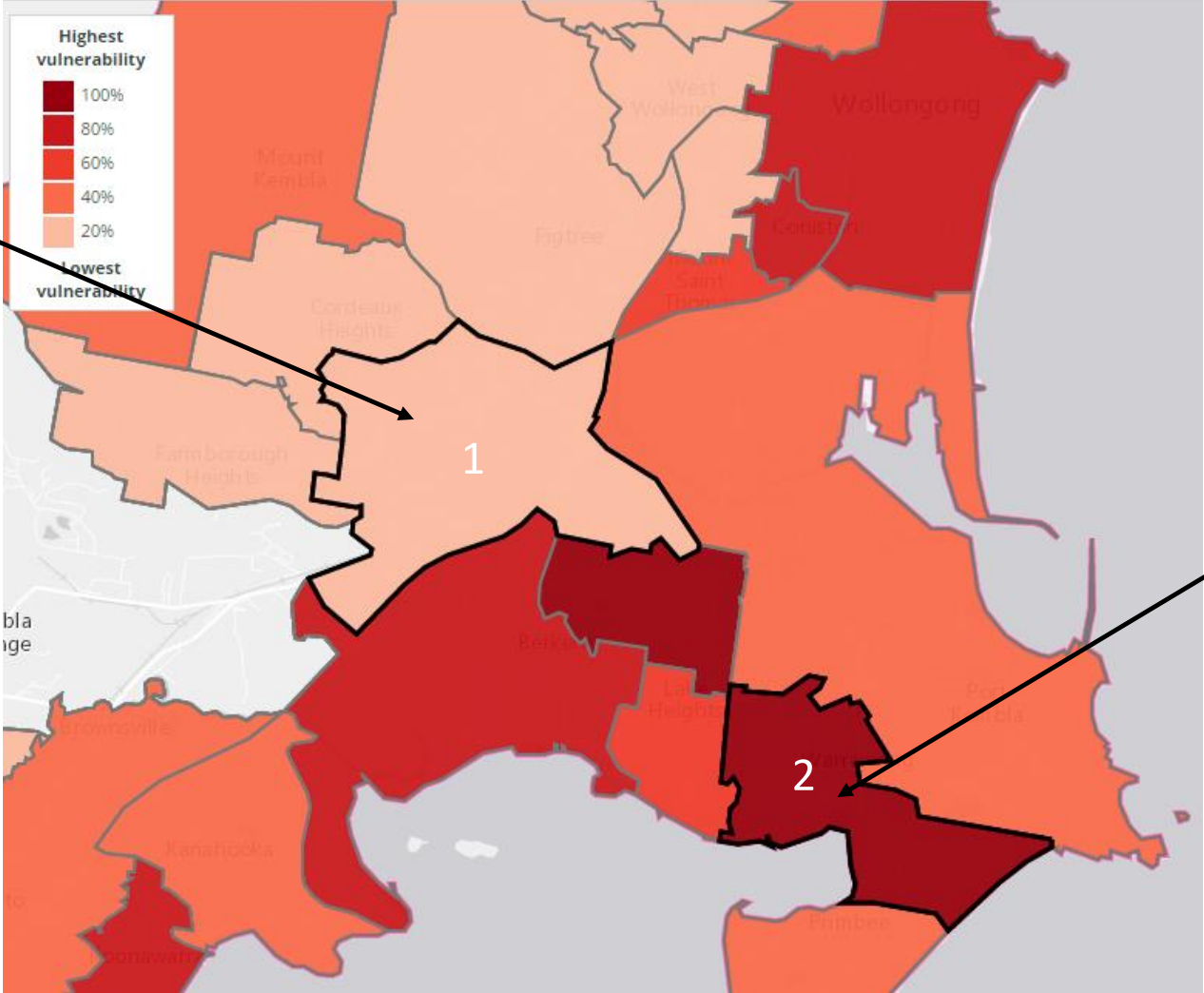
On-diagonal disadvantaged (-)
Low SES, poor ECD

SES: socio-economic status; ECD: Early child development

Beyond socio-economic status...

Are there other community-level factors that can make a difference?

State & federal government policies

Local Government
Governance domain:
Governance structures & policies

Community

Social domain:
Social capital, neighbourhood, attachment, crime, trust, safety

Service domain:
Quantity, quality, access and coordination of services

Governance domain:
Citizen engagement

Socio-economic domain:
Community SES

Physical domain:
Parks, public transport, road safety, housing

Family

Child

KiCS
kids in communities study

25 local communities in Australia

Measuring the domains...
a mixed methods approach
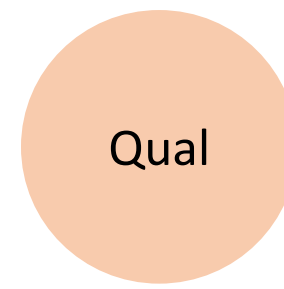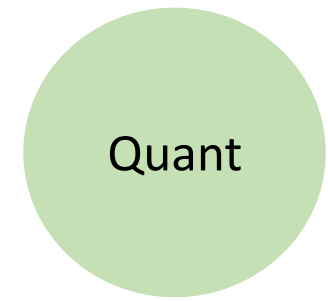
	Method	Source/s	Type	Governance	Physical	Socioeconomic	Service	Social
1	Stakeholder interviews	Primary data	Qual	x	x	x	x	x
2	Parent focus group	Primary data	Qual	x	x	x	x	x
3	Practitioner focus group	Primary data	Qual	x	x	x	x	x
4	Policy documents	Primary data	Qual	x	x	x	x	
5	Service survey	Primary data	Quant				x	
6	Community survey	Primary data	Quant	x	x		x	x
7	GIS and park audits	Primary data, Existing data	Quant		x		x	
8	Service template	Primary data, Existing data	Quant				x	
9	Community demographics	Existing data	Quant			x		

Qual

Qualitative data

Quant

Quantitative data

Qualitative data

136 interviews (10-15 stakeholders per community)

50 focus groups (1 Parent & 1 Service provider group per local community)

Local policy documents

Quantitative data

Community survey

Census & Service information

GIS

Service surveys

1 • Main **similarities** between on-/ off-diagonal communities

2 • Main **differences** between on-/ off-diagonal communities

3 • Potential patterns

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Family

Child

Goldfeld at al
Social Indicators, 2014

Visualising qualitative findings: Social Domain example

Potential Theories by Domain from Initial Qual Analyses	VIC 1	NSW 2	NSW 3	NSW 4	SA 5	QLD 6	QLD 7	ACT 8
There is greater **stigma** in OnDis LCs than Off+ LCs	✓	✓	✓	✓	✓	✓	✓	✗
There is more **sense of community** in Off+ LCs than OnDis LCs	✓	✗	✗	✓	✓	✗	✓	?
Perceived **crime** in lower in Off+ LCs than OnDis LCs	✓	✓	✓	✓	⚖	✓	⚖	⚖
There is better **social capital and social networks** in Off+ LCs than OnDis LCs	✓	⚖	⚖	✓	⚖	⚖	⚖	?
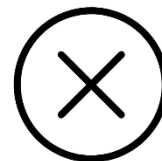
Legend:
- ✓ Supports theory
- ✗ Supports opposite direction
- ⚖ Did not differentiate
- ? Not sure/ need to explore further

Descriptives for each variable – table example

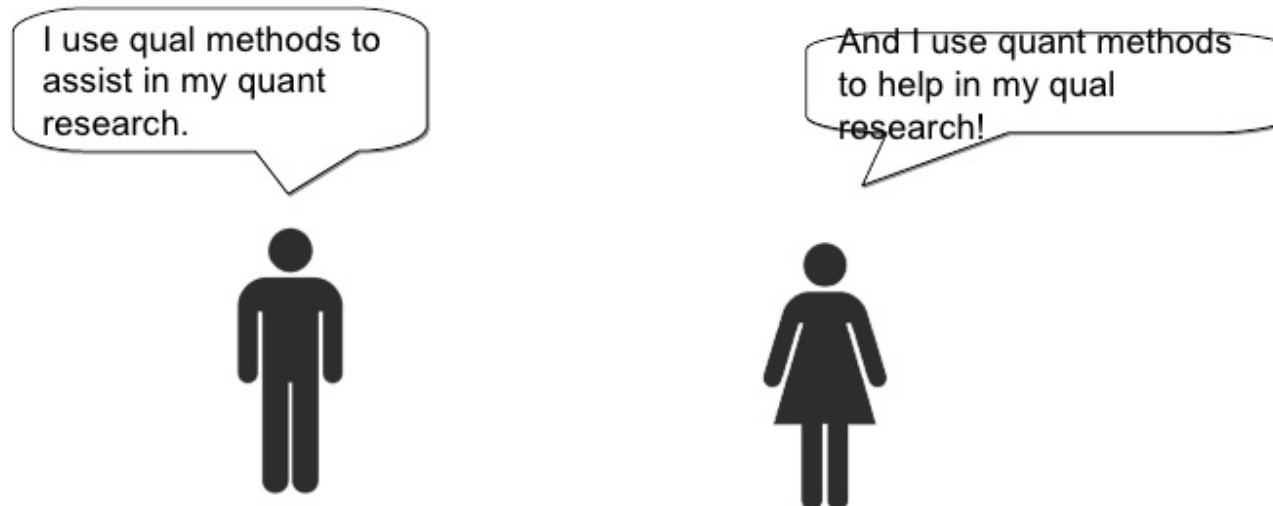|	community local community diagonality ses	Pair 1		Compare the pair	Pair 2		Compare the pair
ACTIVITIES IN AND OUT OF SUBURB	SumTotalActivity_inside	2.76	1.98	+39	1.64	1.58	+4
OPPORTUNITIES TO HAVE A SAY	a3b: Opportunity for say	1.30	0.96	+36	1.22	1.03	+19
AVAILABLE SERVICES IN AREA	Avail_AllServ	3.50	2.77	+27	3.22	3.15	+2
	b1e: Parks in suburb	1.00	0.90	+11	1.00	0.89	+12
QUALITY OF SERVICES IN AREA	Qual_AllServ_scale	2.93	2.31	+27	1.94	2.20	-12
	Qual_AllServ	11.68	9.22	+27	7.78	8.74	-11
	b2e: Quality of Parks	3.95	3.14	+26	3.47	3.25	+7
USE OF SERVICES IN AREA	UseAllServ_insub	0.98	0.40	+148	0.40	0.81	-50
	UseAllServ_adjsub	0.40	0.60	-33	0.53	0.21	+155
	UseAllServ_othersub	0.43	0.44	-2	0.80	0.17	+376
	b3e___1: Play/Park-my suburb	0.72	0.24	+207	0.49	0.33	+50
	b3e___2: Play/Park-adj suburb	0.20	0.23	-17	0.22	0.07	+200
	b3e___3: Play/Park-other suburb	0.24	0.24	-3	0.24	0.13	+87
TRANSPORT IN USUAL WEEK	TotalWalking	4.61	4.46	+3	2.85	4.62	-38
	c1a5: public transport fm sub	0.57	1.14	-50	0.53	0.83	-36
TRAFFIC SAFETY	TrafficSafety	3.29	2.96	+11	3.02	2.59	+16

Visualising quantitative results – an example

Indicator	VIC Pair 1 (Off+ vs. OnDis)	NSW Pair 2 (Off+ vs. OnDis)	NSW Pair 3 (Off+ vs. OnDis)	NSW Pair 4 (Off+ vs. OnDis)	SA Pair 5 (Off- vs. OnAdv)	QLD Pair 6 (Off+ vs. OnDis)	QLD Pair 7 (Off+ vs. OnDis)	ACT Pair 8 (Off+ vs. OnDis)
Age	No	No	No	Yes – Off Diag slightly older	No	Yes – Off Diag older	Yes – Off Diag younger	No
English Proficiency	No	Yes – Off D had higher proportion speaking English only	No	No	No	Yes – Off D had higher proportion speaking English only	No	Yes – Off D had higher proportion speaking English only
Highest level of schooling	No	Yes – Off Diag had higher levels of education	Yes – Off Diag had higher levels of education	No	No	No	No	No
Rental Type	Yes – Off Diag had higher proportion renters	Yes – Off Diag had slightly higher proportion of public renters	Yes – Off Diag had much lower proportion of renters	No	Yes – Off Diag had lower proportion renters	Yes – Off Diag had lower proportion renters	Yes – Off Diag has slightly lower proportion renters	Yes – Off Diag had lower proportion renters
Usual address 5 years ago	No	No	No	No	Yes – Off Diag had slightly higher proportion in same SA2 as 2011	Yes – Off Diag had higher proportion in same SA2 as 2011	Yes – Off Diag had higher proportion with address outside 5 years ago	Yes – Off Diag had higher proportion in same SA2 as 2011
Transport to Work	Yes – Off diagonal had lower proportyion private and higher proportion active	Yes – Off Diag had slightly higher proportion private	Yes – Off Diag had higher proportion private	No	No	No	Yes – Off Diag has higher proportion private	Yes – Off Diag has higher proportion private
Working in same SA2 as living in	Yes – Off Diagonal had higher proportion working in SA2 living in	No	Yes – Off Diag had higher proportion working in SA2 living in	No	Yes – Off Diag had slightly lower proportion working in SA2 living in	Yes – Off Diag had higher proportion working in SA2 living in	Yes – Off Diag has lower proportion working in SA2 living in	No

Triangulation

For each 'matched' qualitative and quantitative measure:

- Phase 1 'Triangulation *within* communities': For each community pair, does this factor/theme differentiate the off vs. on-diagonal local community?

- Phase 2 'Triangulation *across* communities': Is there a consistent pattern emerging in the communities (e.g. ≥4 community pairs)?

- Phase 3 'Overall triangulation': Do the qualitative and quantitative findings align?

Triangulation example:

Sub-domain	Type of measure	Theme/theory/hypothesis	VIC 1	NSW 2	NSW 3	NSW 4	SA 5	QLD 6	QLD 7	ACT 8	=	▲
Income	Qual	**Level of SES (economic diversity) in Off+ is greater than OnDis** (or > in OnAdv than Off-)	✓	✓	✓	✓	✗	✓	✓	✗	✓	✗
	Quant	**Gini coefficient in Off+ is higher than OnDis** (or > in OnAdv than Off-)	⚖	⚖	⚖	⚖	⚖	⚖	⚖	⚖	⚖	
Cultural Identity	Qual	**Level of cultural diversity in Off+ is greater in OnDis** (or > OnAdv than Off-)	⚖	✗	✗	⚖	⚖	⚖	✗	✗	⚖	✓
	Quant	**More non-English speakers in Off+ than OnDis** (or > in OnAdv than Off-)	⚖	✗	⚖	⚖	⚖	✗	⚖	✗	⚖	

Sociodemographic Domain
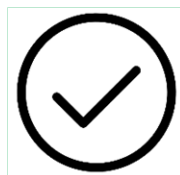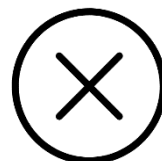
✓ Supports   ✗ Supports opposite direction   ⚖ Does not differentiate

Challenges

Qualitative data
> So much data! Requires considerable resources and time for community engagement, data collection, and analyses
> So much 'rich' data

Quantitative data
> Lack of representativeness
> Small sample size for further modelling
> Lack of geocoded built environment data for area-level analyses (potential for measurement error)

Overall
> Complementary mixed methods – provides in-depth localised information
> Beginning of determining potential indicators…not the end

Next steps

- Set of potential community-level indicators for ECD

- Draft manual of measures and methodologies

- **Knowledge translation** activities:
  - Community Reports
  - Data visualisation
  - Local feedback
  - AEDC Website
  - Research snapshots
  - Peer-reviewed papers

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Thank you!

Please contact us if you have any other comments