

Tracing the consequences of child poverty

Evidence from the Young Lives study
in Ethiopia, India, Peru and Vietnam

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Paul Dorman, Colin Tredoux



‘LAUNCH’ PRESENTATION

Andy Dawes & Colin Tredoux
Discussant: Vivienne Taylor



UNIVERSITY OF CAPE TOWN
APRIL 10th 2019

<https://policy.bristoluniversitypress.co.uk/tracing-the-consequences-of-child-poverty>

Or tinyurl.com/young-lives-book

OVERVIEW

1. Welcome and process
2. Film: Introduction to the young Lives Study: Prof Jo Boyden
3. Film: Tracing the consequences of child poverty animation video that tells (mostly) all
4. Young Lives Design and Methods
5. Key Findings
6. Key Policy Recommendations
7. Discussant: Professor Vivienne Taylor
8. Discussion

KEY PLAYERS IN THE YOUNG LIVES CAST



JO BOYDEN
DIRECTOR



PAUL DORNAN
CHIEF POLICY OFFICER



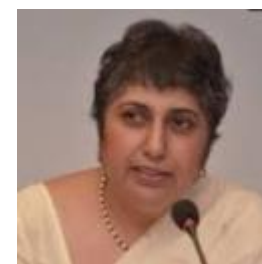
NGUYEN THANG
CD VIETNAM



ALAN SANCHEZ
CD PERU



MARTIN WOODHEAD
ASSOC DIRECTOR



RENU SINGH
CD INDIA



ALULA PANKHURST
CD ETHIOPIA



Introduction to the Young Lives study

Prof Jo Boyden

<https://www.youtube.com/watch?v=p08yWI43A6c>

Video

Tracing the Consequences of Child Poverty

<https://www.youtube.com/watch?v=UvX2ewv3jdA>

STUDY DESIGN AND METHODS

Sentinel site samples in each country

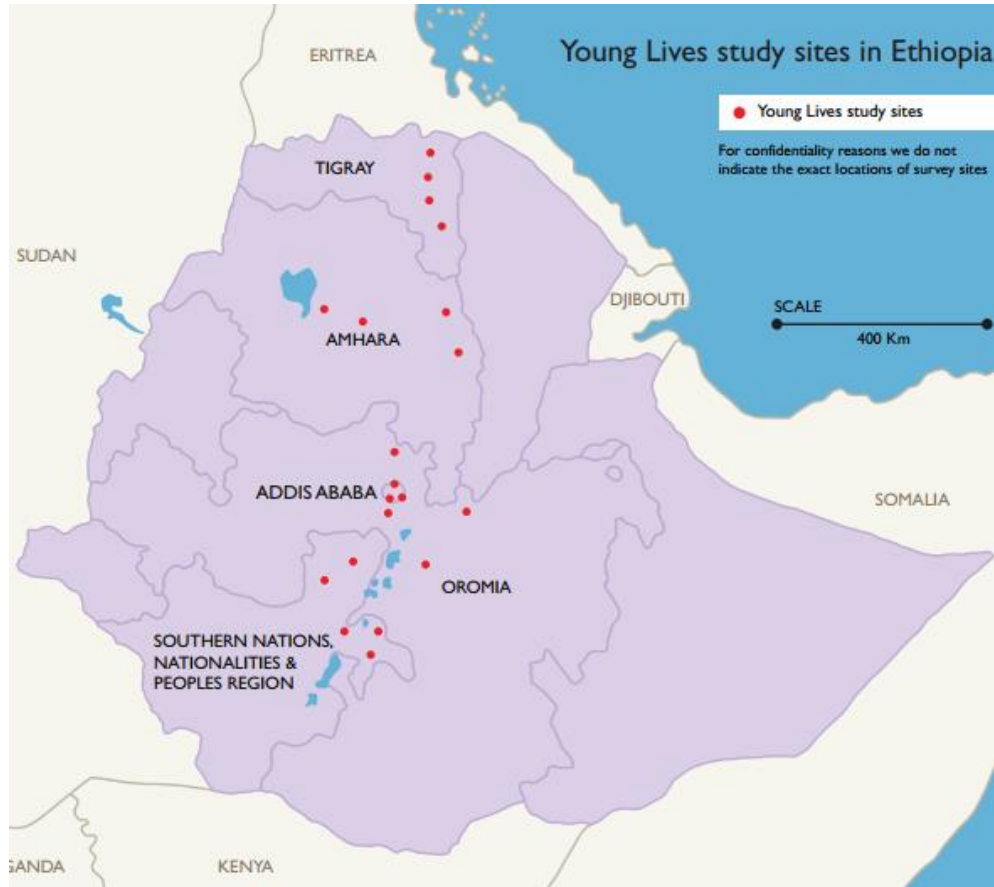
A **sentinel research site** represents a certain type of population; is expected to show typical trends affecting that group or area

1. 20 compact sentinel sites purposively selected in each country for intensive study at level of **houshold**, individual **child**, **community** and **school**
2. Each site: Random selection of Households
 - **100** with a child born in 2001-02 (Younger Cohort)
 - **50** with a child born in 1994-95 (Older Cohort)
3. Poor households oversampled

Country sentinel sites: India & Ethiopia



MAIN CHILD TEST LANGUAGES: Telugu
English

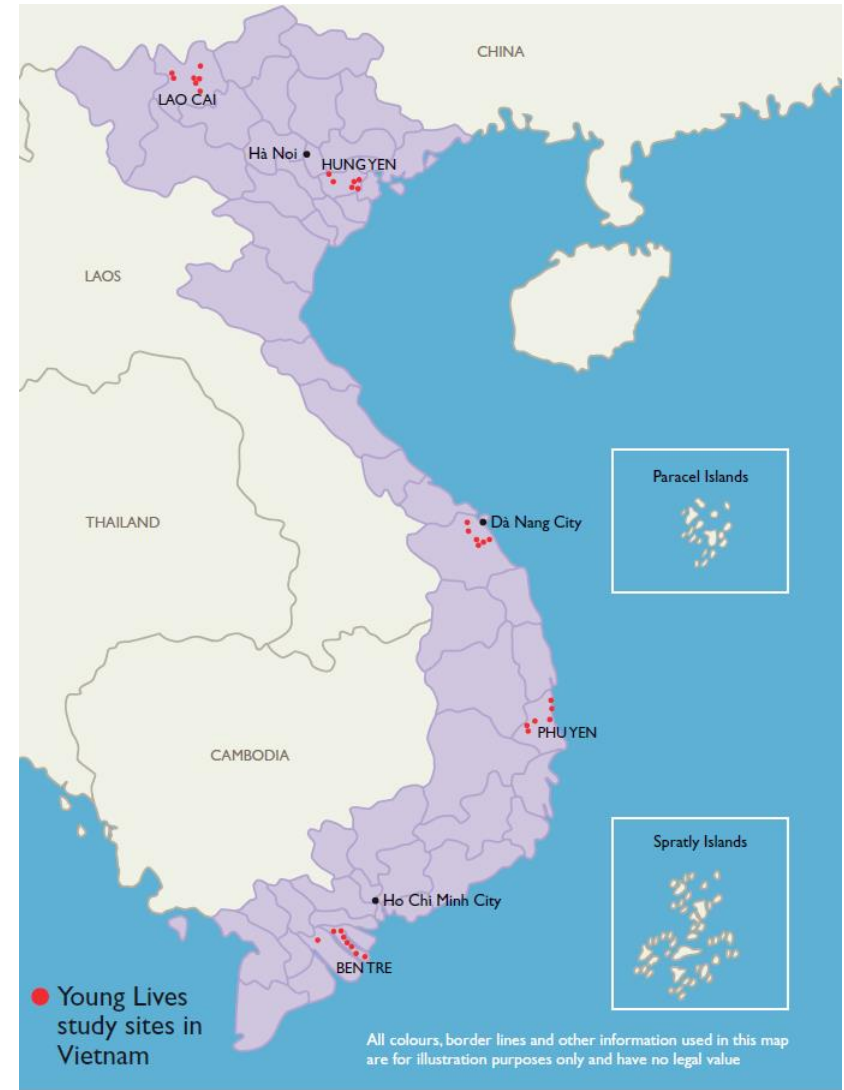


MAIN CHILD TEST LANGUAGES: Amharic
Oromifa Tigrinya (many others)

Country sentinel sites: Peru & Vietnam



MAIN CHILD TEST LANGUAGES: Castellano
Quechua



MAIN CHILD TEST LANGUAGES:
Vietnamese (54 OTHERS)

Value of a cross-national cohort study

Cross-national research is valuable, even indispensable, for establishing the validity of interpretations derived from single-nation studies.

In no other way can we be certain that what we believe to be social-structural regularities are not merely particularities, the product of some limited set of historical or cultural or political circumstances.

Kohn (1987: 713) (External Validity)

Value of studying within-country variation

Comparisons within countries (like **NIDS**) of:

1. Wealthier and poorer households
2. Urban / Rural / Region
3. Static and migrant families and children
4. Ethnic majority and minority children
5. Girls and boys

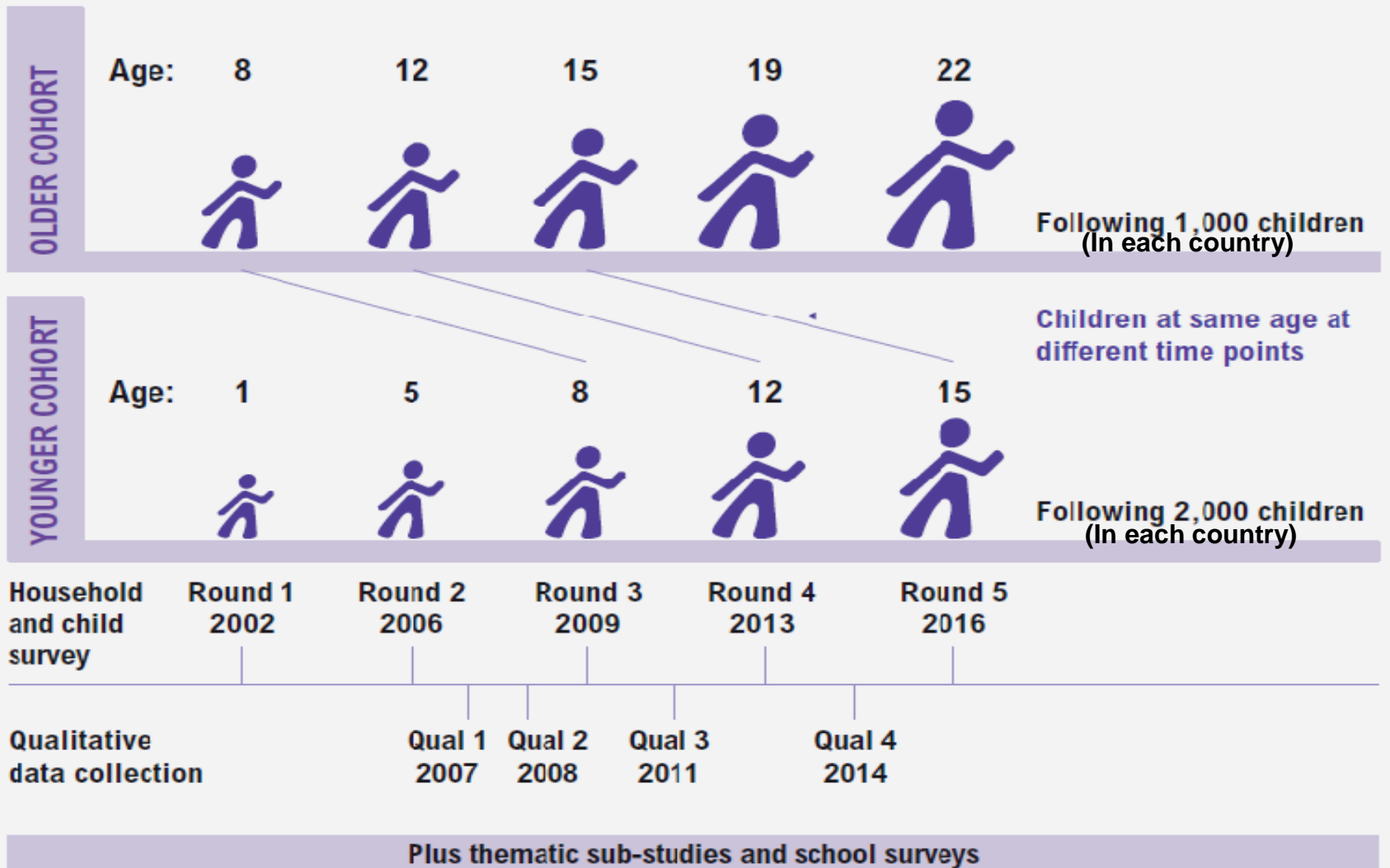
Developmental science and longitudinal studies

Longitudinal cohort data:

- Permits in-depth exploration, over time, of the developmental outcomes for children exposed to multiple deprivations and stressors.
- Provides insight into factors that enable children to thrive despite the odds.
- Informs actions that need to be taken to reduce the impact of disadvantage and realise the SDGs.

Cross-sequential cohort design

Young Lives longitudinal data collected in 4 countries:
Ethiopia, India (Andhra Pradesh and Telangana), Peru, Vietnam



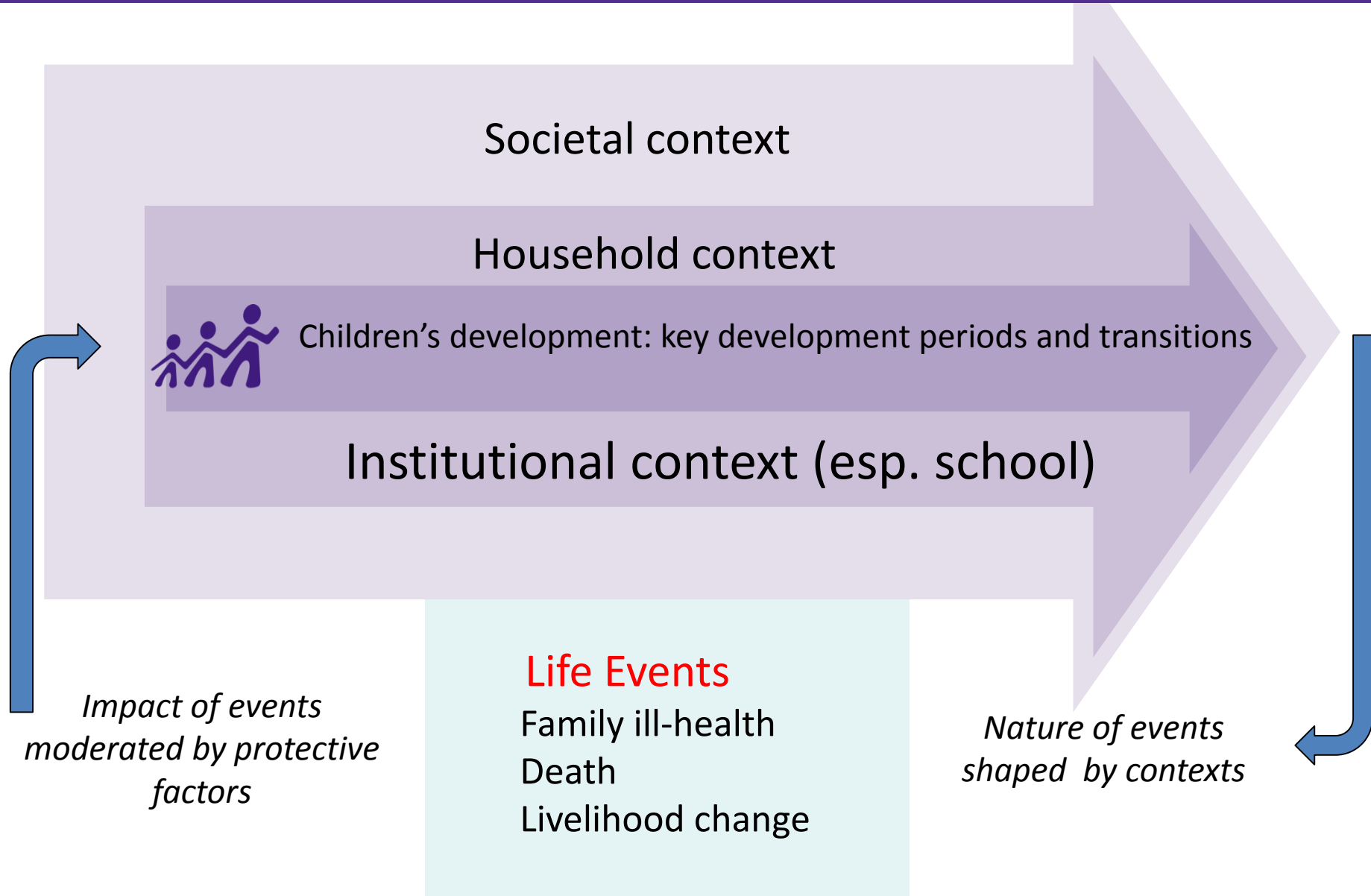
Study attrition and deaths 2002-2016

| | <u>Younger Cohort</u> | <u>Older Cohort</u> | | |
|-------------|-----------------------|---------------------|------------------|---------------|
| | <u>Attrition</u> | <u>Deaths</u> | <u>Attrition</u> | <u>Deaths</u> |
| Ethiopia | 5.3 | 4.3 | 17.7 | 1.1 |
| India (UAP) | 3.7 | 2.3 | 7.6 | 1.7 |
| Peru | 8.2 | 1.2 | 14.1 | 0.8 |
| Vietnam | 2.5 | 0.7 | 8.6 | 0.3 |

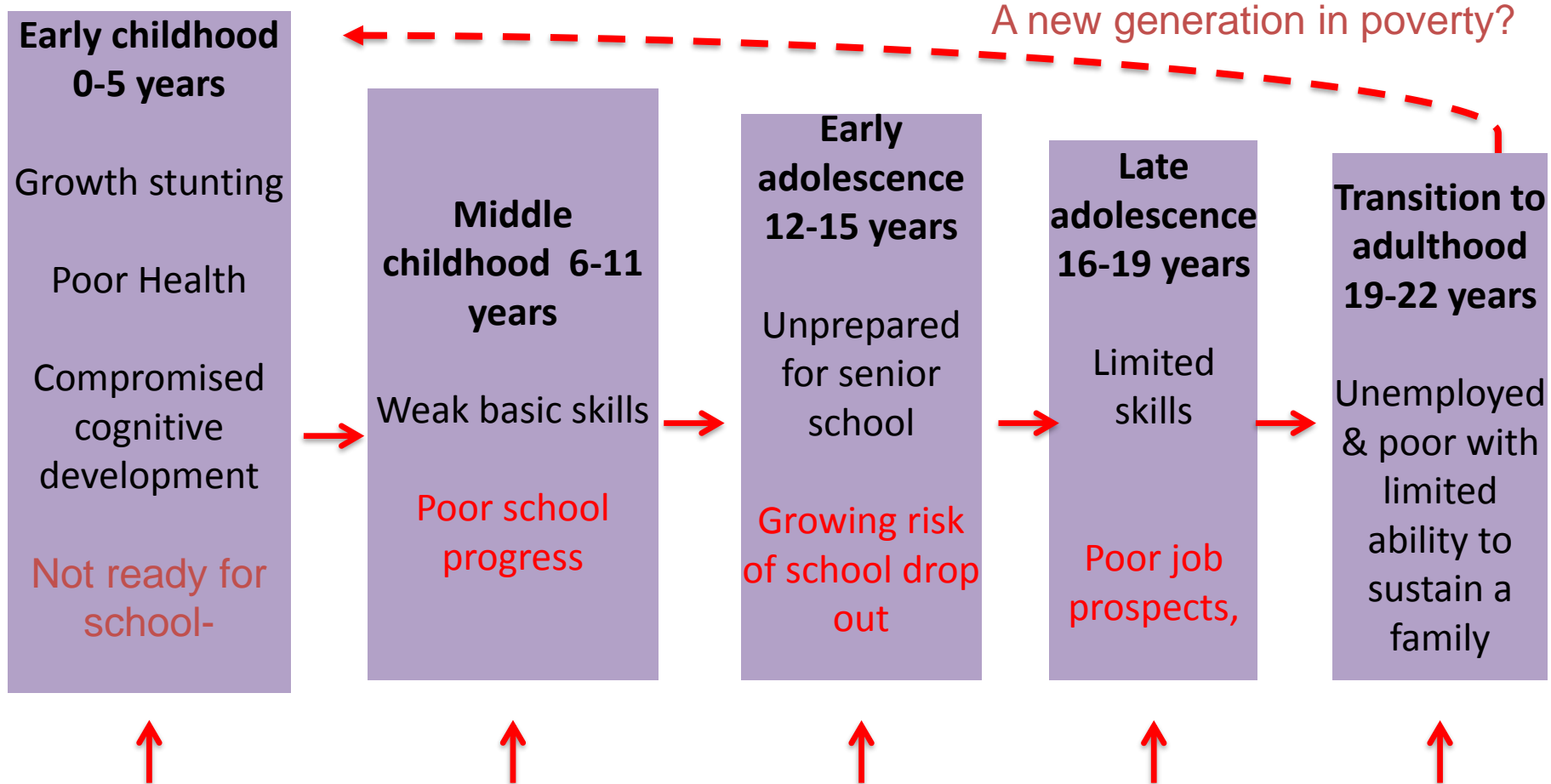
Percentages of 2002 sample

Conceptual framework

Ecological / systems & life course development



CONCEPTUAL FRAMEWORK: DEVELOPMENTAL CASCADE



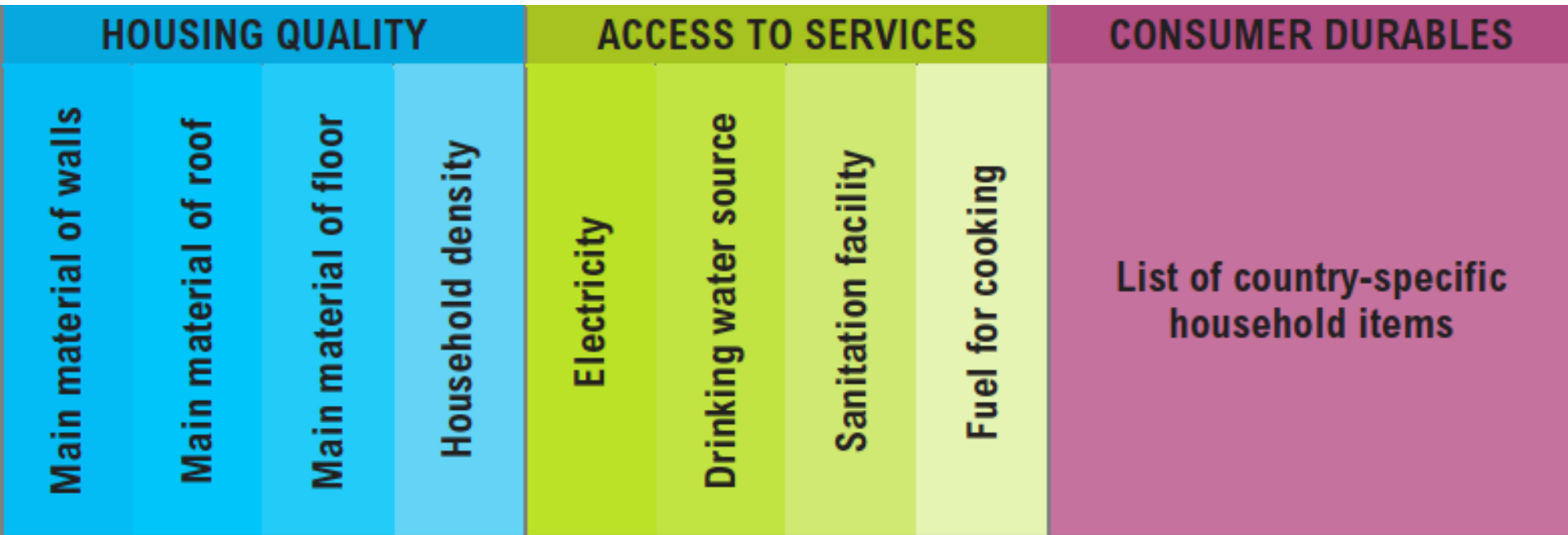
Household Context: Poverty; food insecurity; family stress; shocks

Policy & Institutional Context: Inadequate access to social protection; Weak basic services; Limited opportunities to learn and progress in school; Poor public health services

Main measures considered here

- Wealth Index
- Child growth Height for Age Z Score (WHO)
- Language Development:
 - Peabody Picture Vocabulary Test (PPVT) (5,8,12,15yrs)
 - Comprehension (8 & 15yrs)
- Cognitive Development Assessment (CDA) (5yrs)
- Young Lives Mathematics Tests

Young Lives Wealth Index

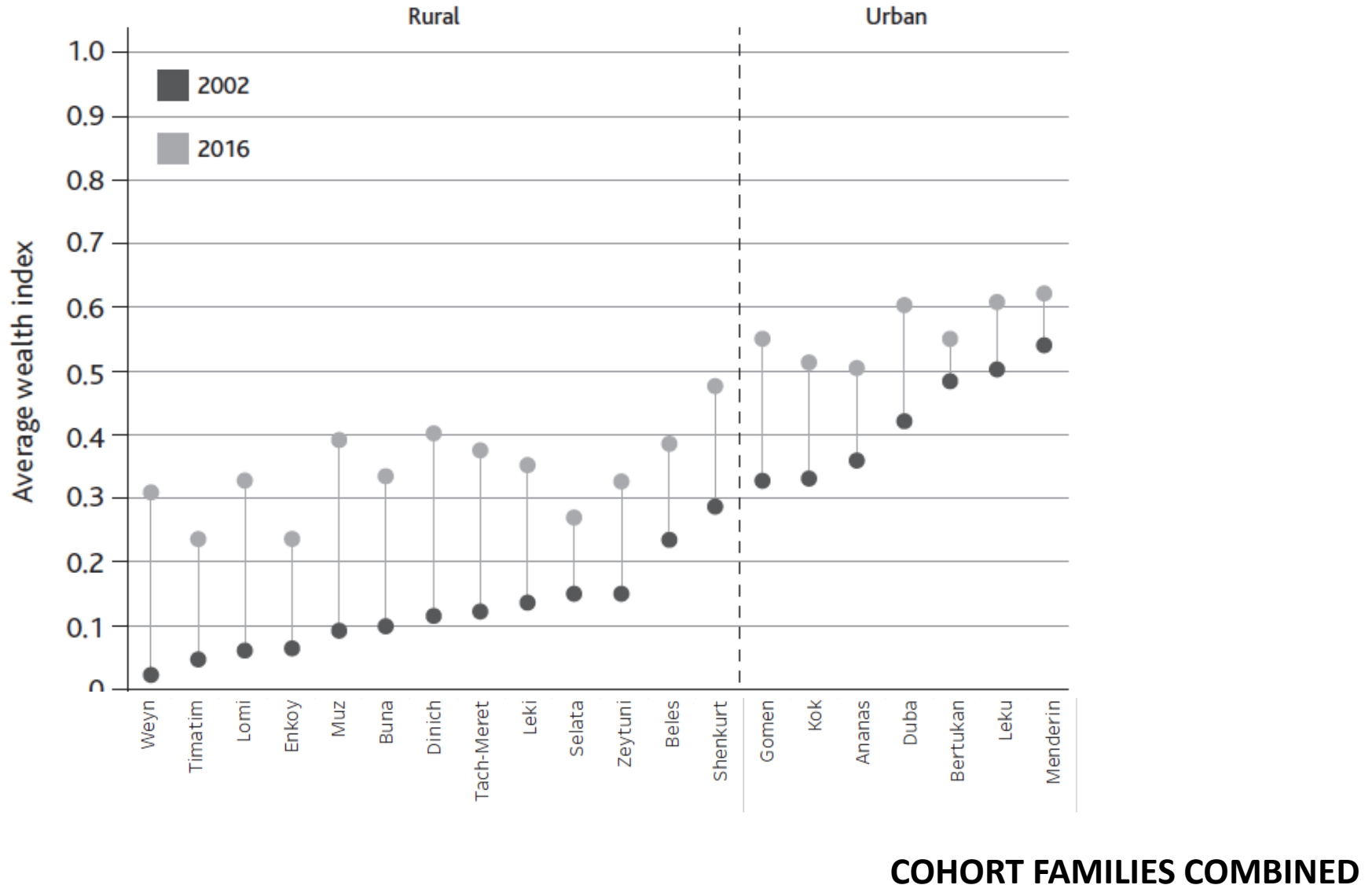


Briones, C. (2017). How many rooms are there in your house? Constructing the Young Lives Wealth Index. *Young Lives Technical Note*, 43.

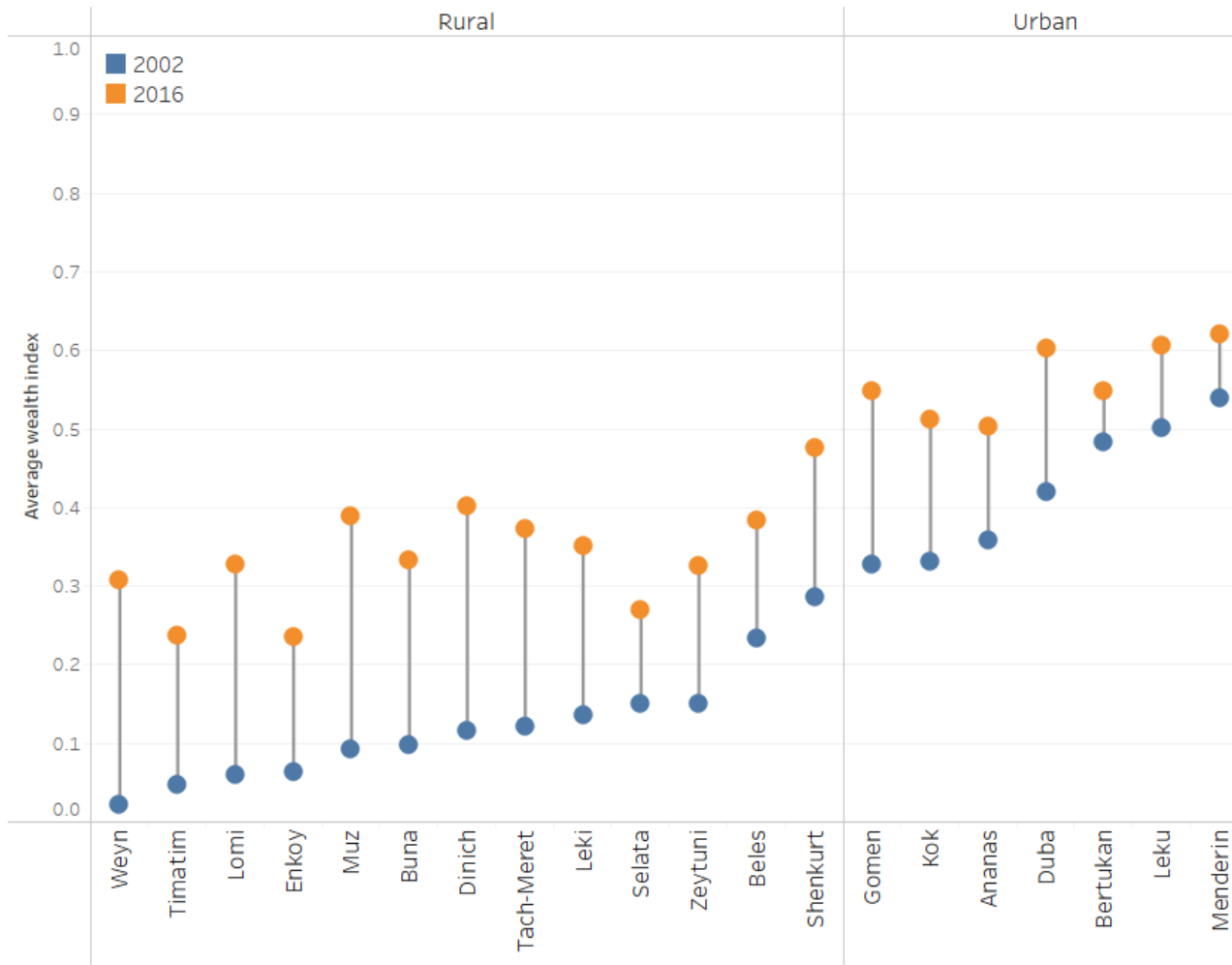
TRACING THE CONSEQUENCES OF CHILD POVERTY

KEY FINDINGS

Wealth levels improve but relative positions remain static: eg Ethiopia



Improving material conditions but ongoing disparities (Ethiopian communities)



It is very sad to talk about our toilet. There is no toilet in the compound and near our house so we are supposed to walk 3–5 minutes and pay 0.25 cents to use one. This might be tolerable for adults but it is very difficult for children.

Mother, urban Ethiopia

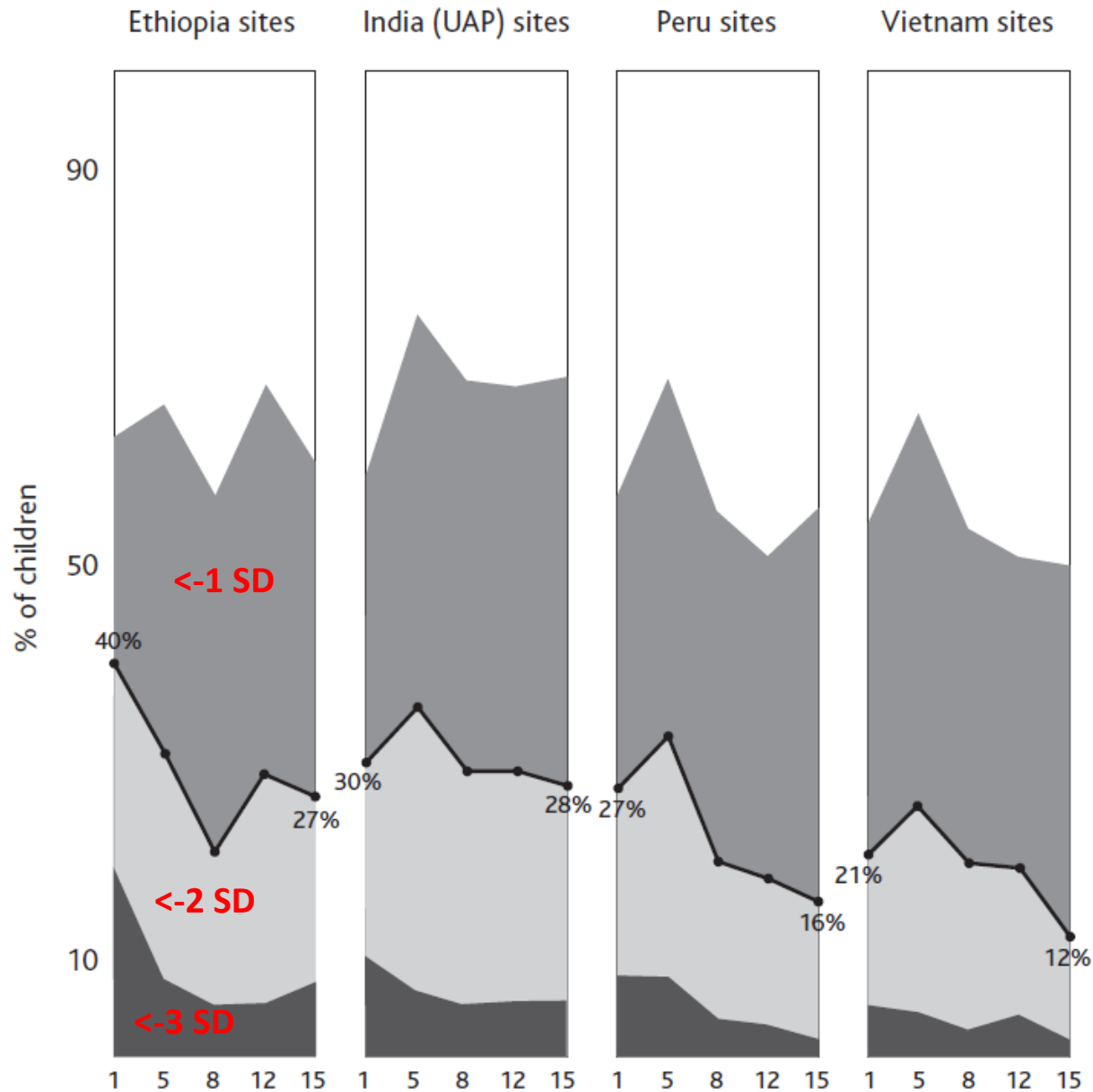


A KEY ADVANTAGE OF THIS LONGITUDINAL STUDY:

We could measure physical growth status

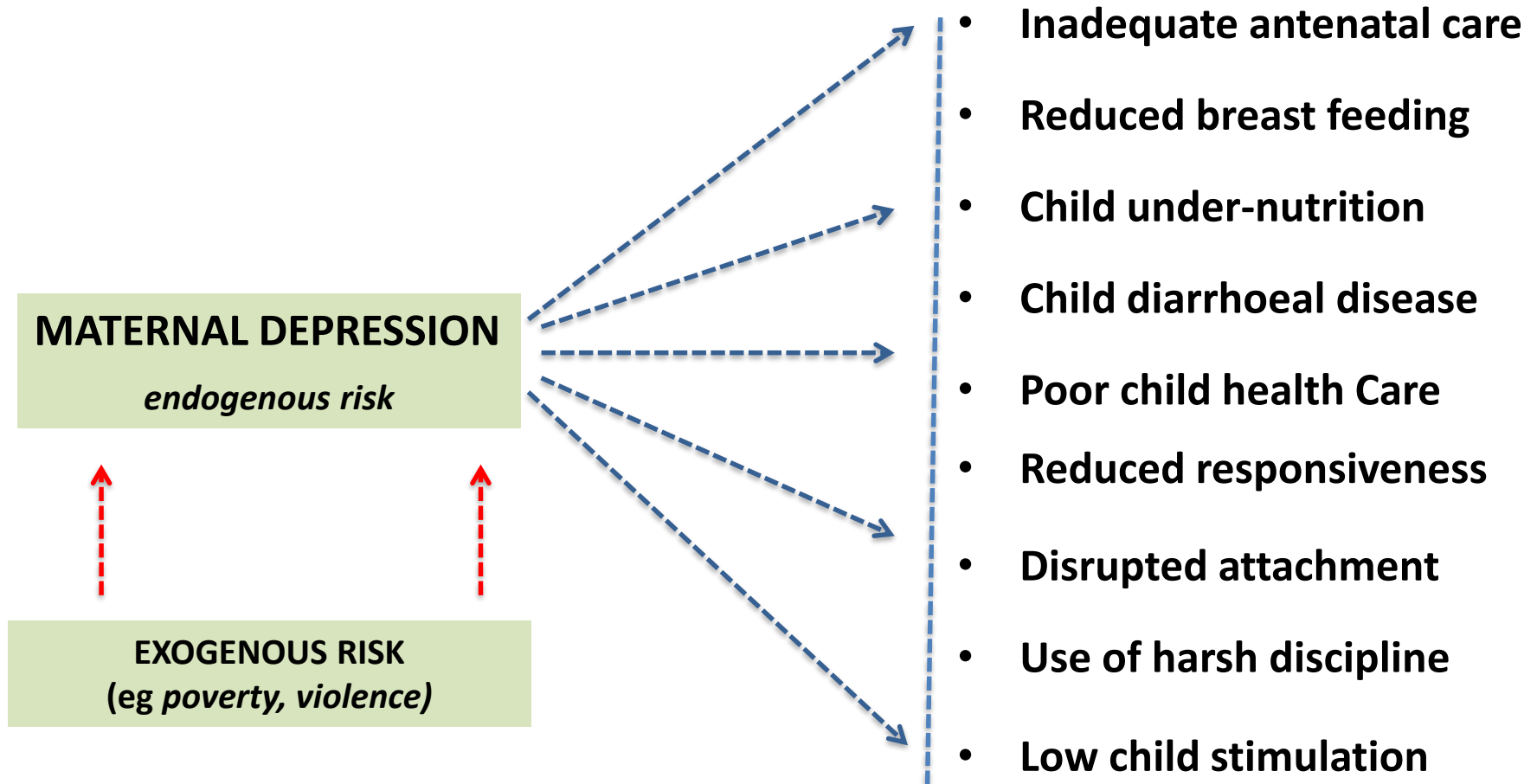
GROWTH STUNTING (Height for Age < 2 SD below WHO reference median)

Stunting rates : 1-15 years



Key Finding: Poverty predicts risk for maternal depression in early childhood

Maternal depression, in turn, predicts stunting and later cognitive deficit



Based on Wachs & Rahman 2013

Correlates of growth recovery

Post-infancy recovery is associated with 4 factors:

- maternal height
- poverty level
- social protection measures
- sanitation and health services.

Post-infancy recovery is associated with a key human capital outcome:

Poor performance on **maths** and **vocabulary** tests (at 8yrs and 12yrs) is not determined by early stunting (those who were never stunted do best of all).

EDUCATION

(Young Lives Household and School Effectiveness surveys)

Generational shift in access to school

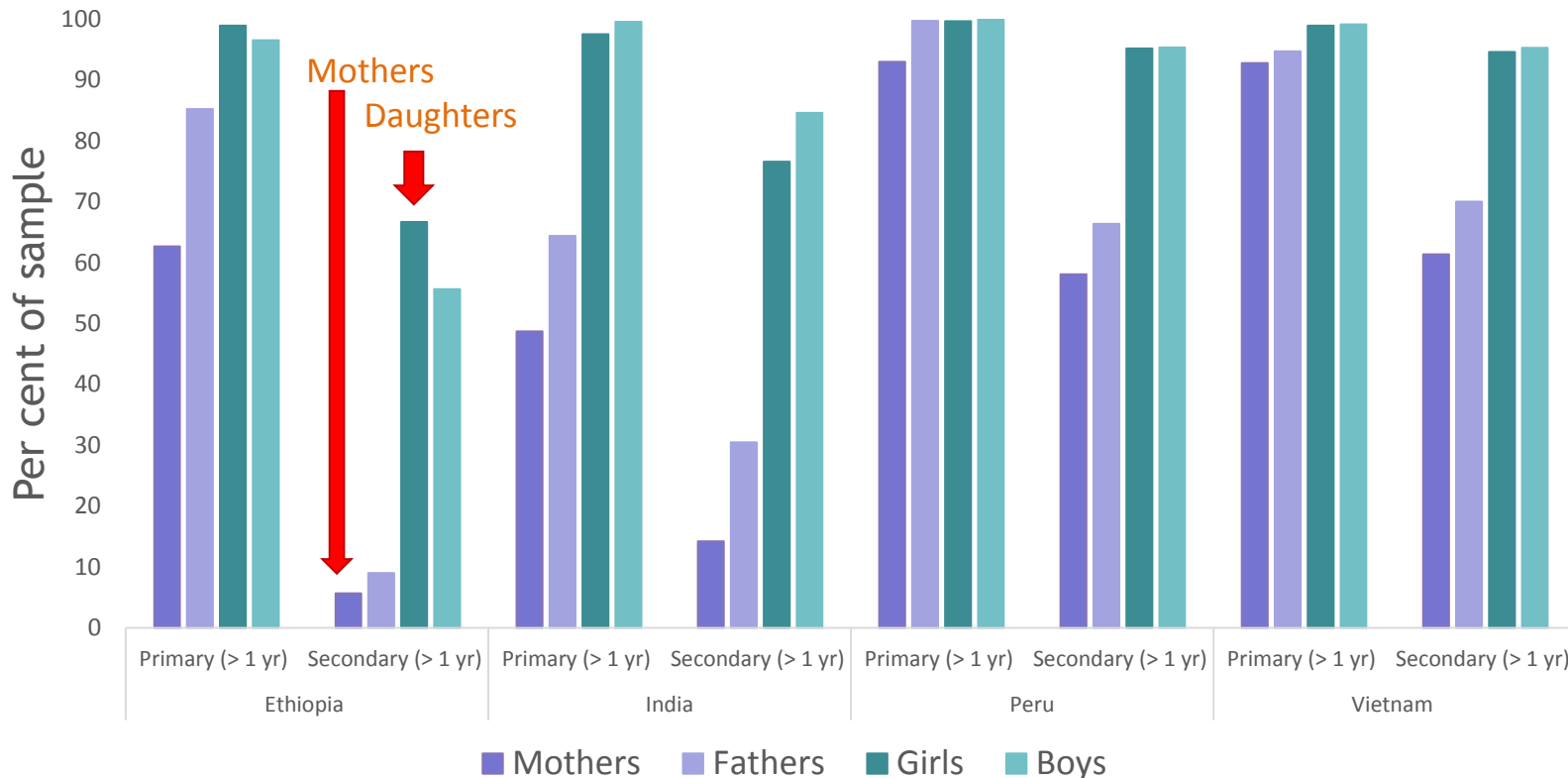
If one can learn and study hard, they will always have a good job

Girl, Ethiopia

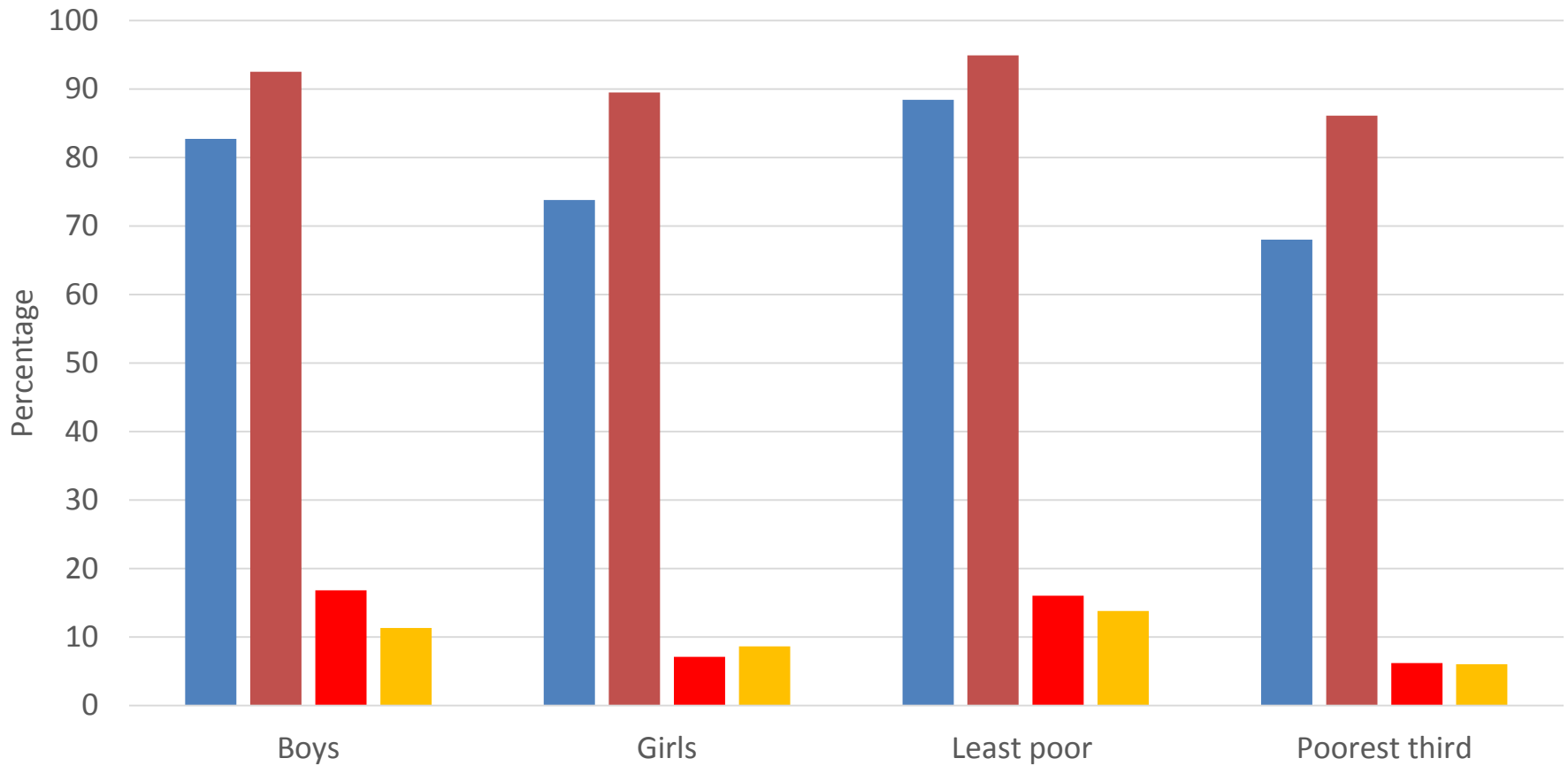
We're not going to suffer like this in the mud ... it's better that I go and study.

Girl, rural Peru

More 22 year olds have been educated than their caregivers, and for longer



Pro-poor access, but access isn't learning (India)

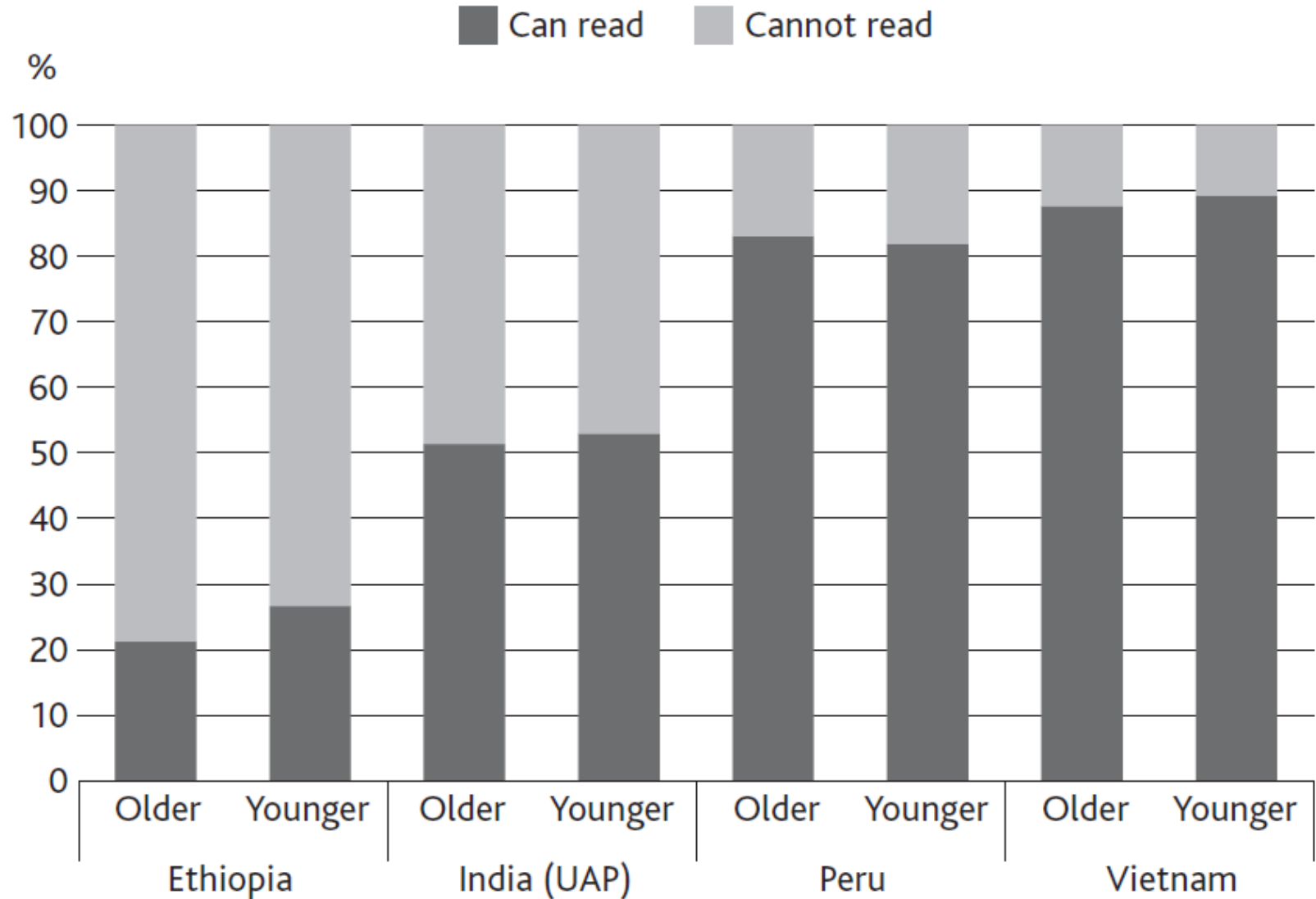


- Enrolment (older cohort, 15 years)
- Enrolment (younger cohort, 15 years)
- Able to answer 3 comparable maths questions (older cohort, 15 years)
- Able to answer 3 comparable maths questions (younger cohort, 15 years)



Reading levels at age 8 yrs - not a lot of change

Older cohort 2002 and Younger cohort 2009



Characteristics of classrooms that add value Vietnam

1. Better classroom and teaching resources
2. Teachers better trained
3. Teachers more committed to teaching
4. Teachers evaluated more frequently
5. Teachers less likely to have work outside school
6. Teachers believed they could make a difference
7. Teachers less likely to believe background / ethnicity dominates children's ability to learn

DEVELOPMENTAL CASCADES

**Influences on development across childhood and
adolescence**

Young Lives evidence

A positive cascade across linked domains

Cognitive skills at 8yrs predict

- Learning at 12yrs (4 countries)
- Self-esteem, self-efficacy, self-respect at 12yrs (3 countries)

Cognitive skills at 12yrs predict

- Learning at 15yrs (4 countries)
- Self-efficacy, self-esteem, self-respect at 15yrs (2 countries)

Self-efficacy, self-esteem, self-respect at 12yrs predict

- Learning at 15yrs (2 countries)

Height at 8 predicts

- learning at 12 (2 countries)
- Self-esteem, self-efficacy, self-respect at 12 (2 countries)

Height at 12 predicts

- Learning at 15 (3 countries)

Age:

8

12

15

Sources: Sanchez (2013); Dornan and Woodhead (2015)

Predictors of completing secondary school

Early learning & caregiver education

Example 1: India (UAP)

More likely to complete secondary school if:

- a boy
- can read at age 8
- sense of self-efficacy at age 12
- father educated to secondary school level
- not undertaking paid work, or having less than 3 hours of unpaid work at age 12

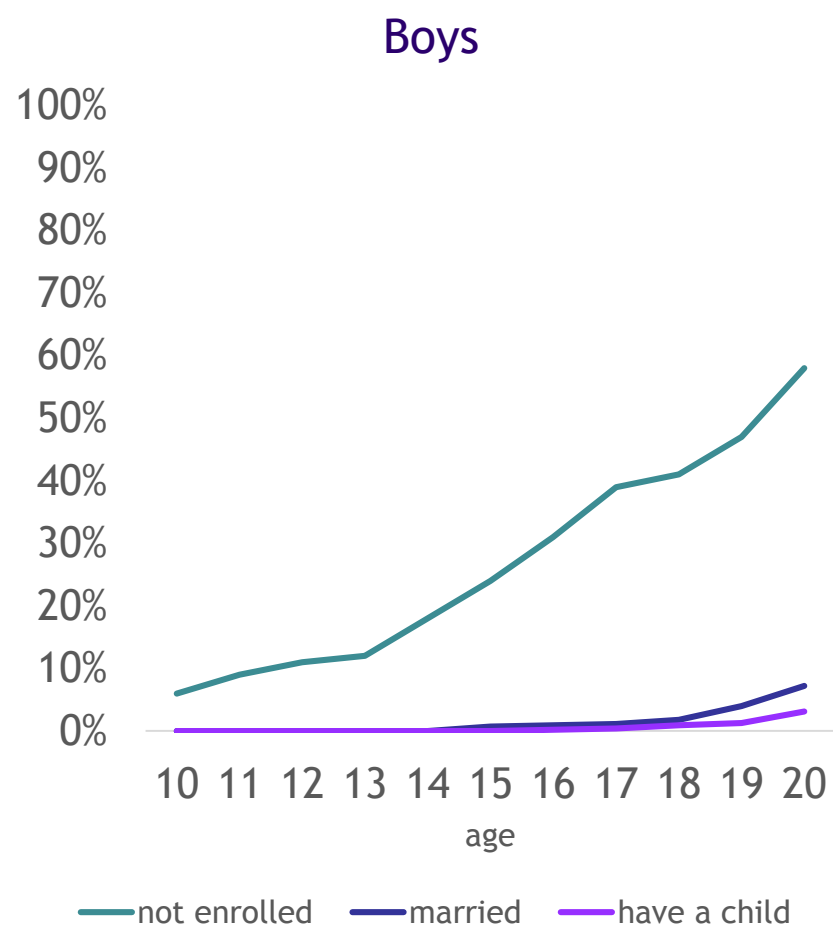
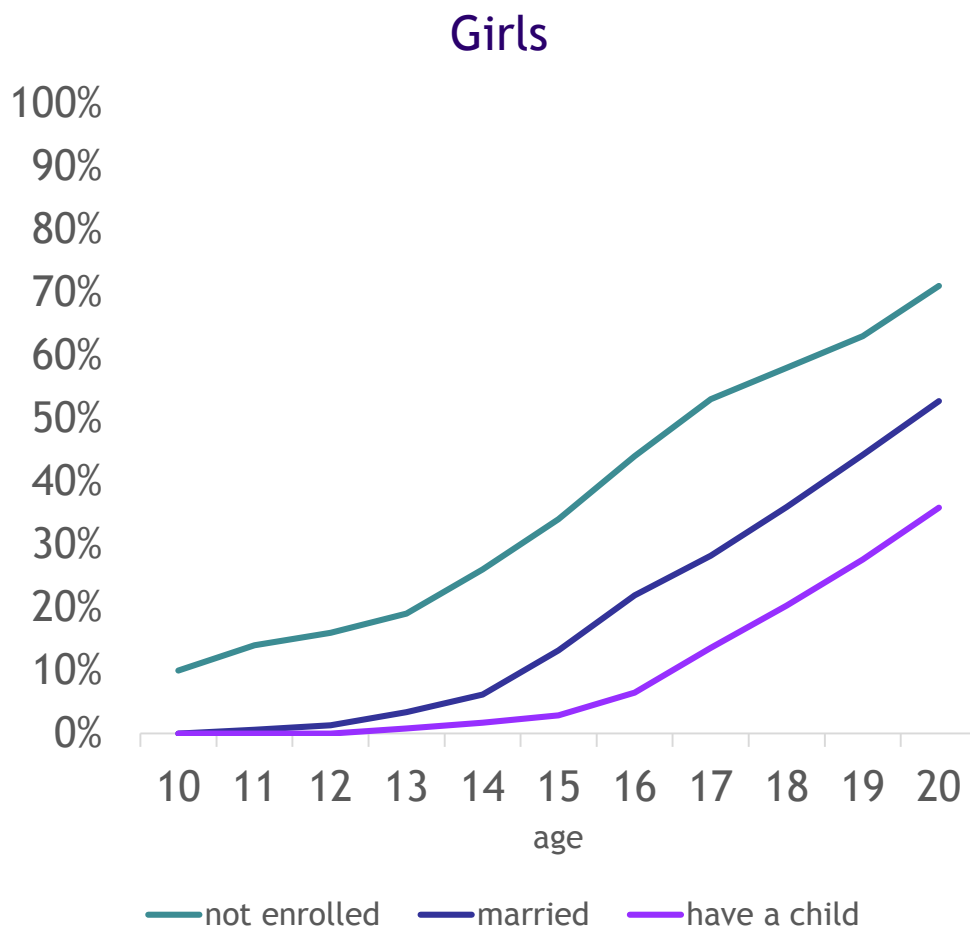
Example 2: Vietnam

More likely to complete lower secondary education level if:

- performed well in tests at age 12
- household had more assets and higher consumption expenditure
- caregivers completed at least lower secondary education

Gender makes a difference

School-leaving, marriage and parenthood: evidence from India



WHAT MATTERS AND WHEN?

Modelling language and quantitative ability longitudinally in the 4 Young Lives countries

How to integrate complex findings?

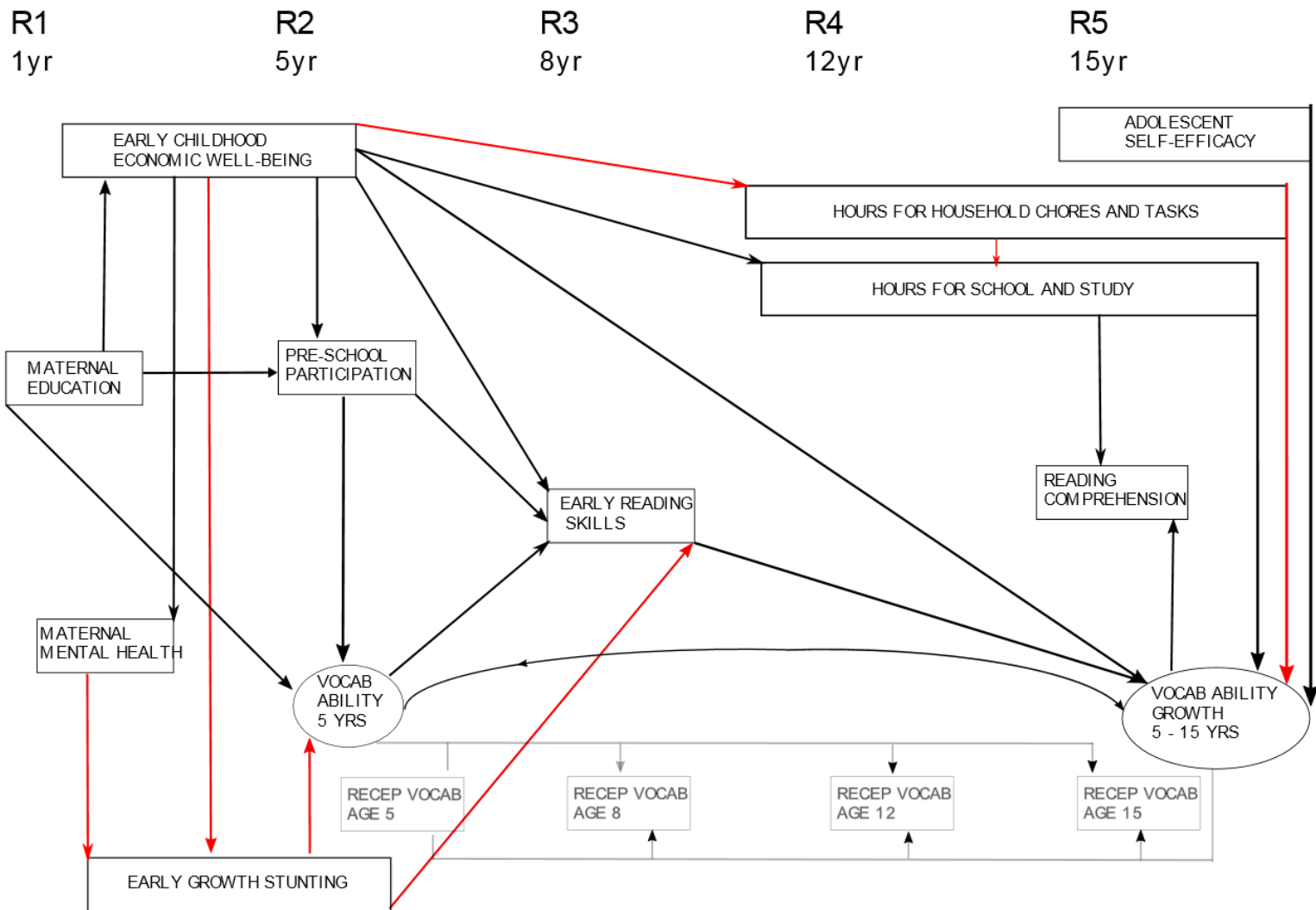
- Many factors are important in the development of the YL children
 - physical growth
 - mother's wellness
 - material resources
 - availability of pre-school care
 - quality of pre-school care
 - investment of parents in education
 - need to assist with household tasks
 - time for study
 - and many, many other factors (over 800 papers published on YL data)

What are the important outcomes?

- Given the nature of YL data, we opted for **development of language and quantitative** abilities
 - important for successful graduation from school, and the many things thus enabled
 - important achievements in their own right
 - Round 6 data – funding not obtained yet, but looks promising – will allow us to look at outcomes in adult life (employment, continued health, etc)

Integrating the findings

- We wanted to consider a range of important factors on the outcomes in question, bearing in mind their inter-correlatedness, over time
- We considered the following type of model for language and quantitative ability (over all 4 countries, $N > 7000$)



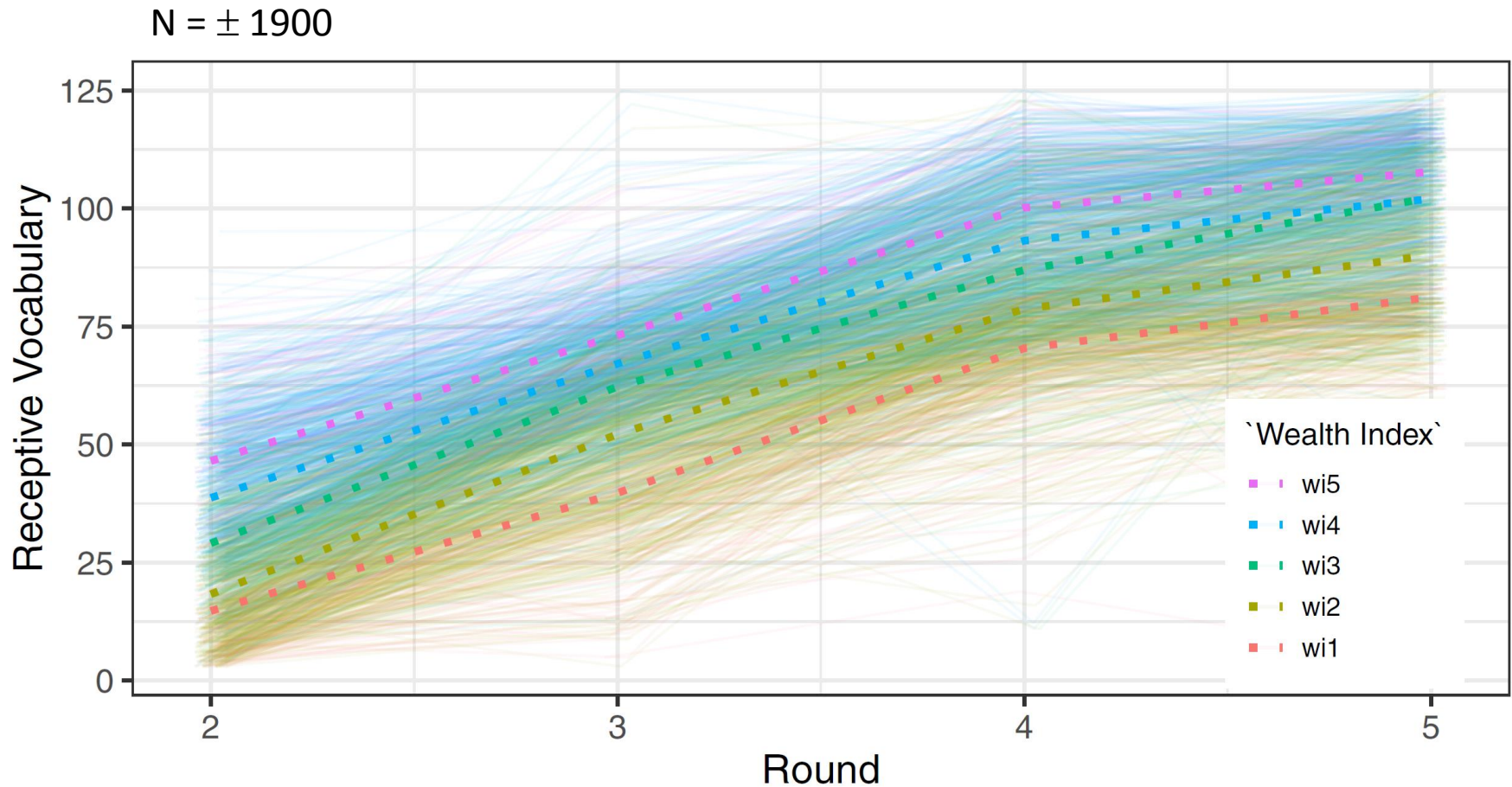
Black lines = expected positive relationships

Red lines = expected negative relationships

Analysis - considerations

- That is a very complex model to analyse, and required making a lot of assumptions
- Many possible ways of modelling it, none that we are aware of that is optimal
- We opted for latent growth modelling
 - allowed us to model change over time
 - taking into account differences between individual children
 - but without being able to take into account some important things (eg change in predictors over time)

Modeling change in language ability, Peru

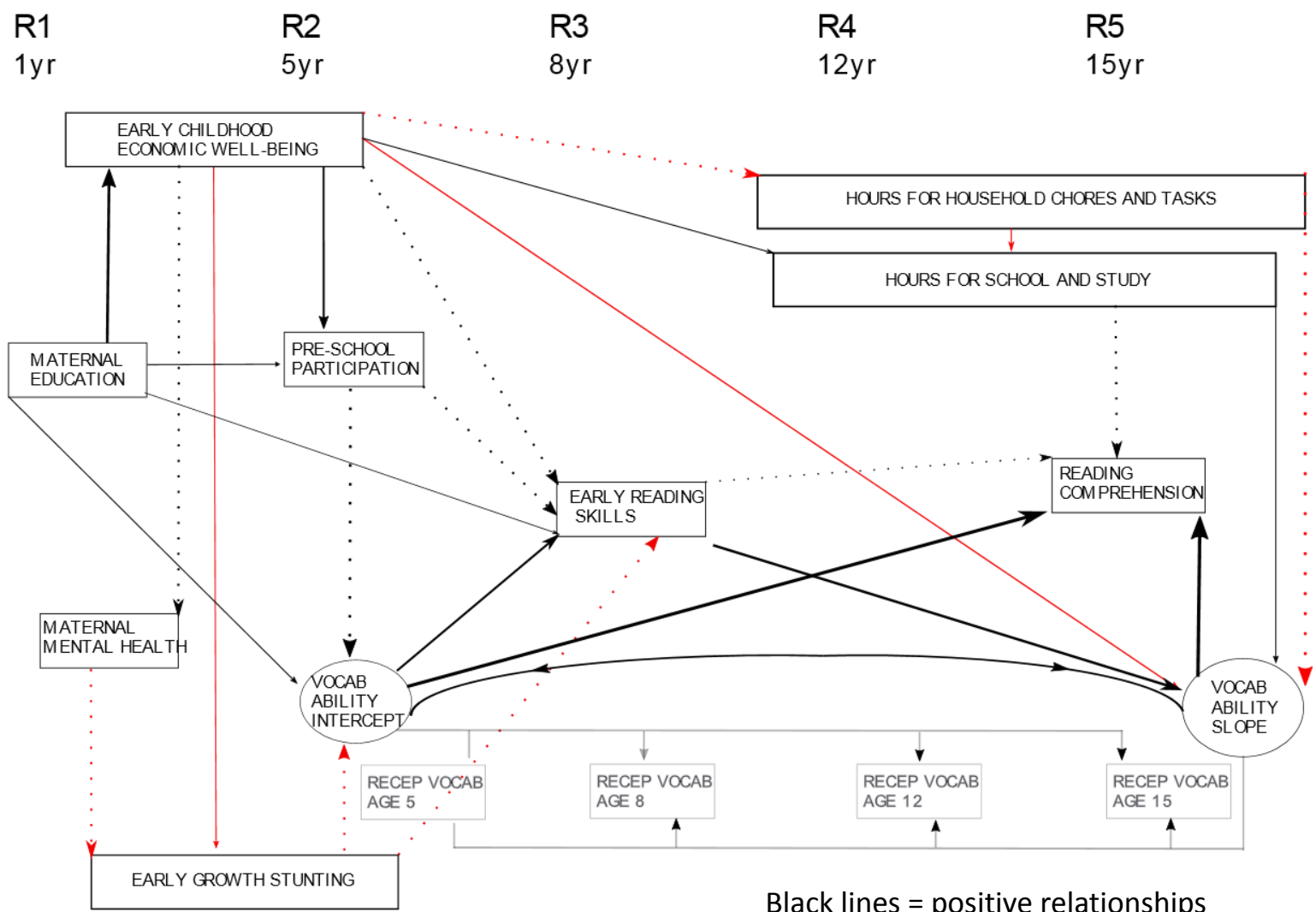


Growth in receptive vocabulary from ± 5 to 16 years.

Each line is a child's personal growth trajectory

Lines are colour coded by wealth index

Modeling change in language ability, all 4 countries



Black lines = positive relationships
 Red lines = negative relationships
 Thickness of line is proportional to effect size
 Solid lines = found in all 4 countries
 Dashed lines = found in at least 2 countries

Summarising effects of interest

- **Individual variables**

- Economic well being (wealth index at/before 5yrs)
- Mother's education
- Language ability at 5yrs

- **Strong paths**

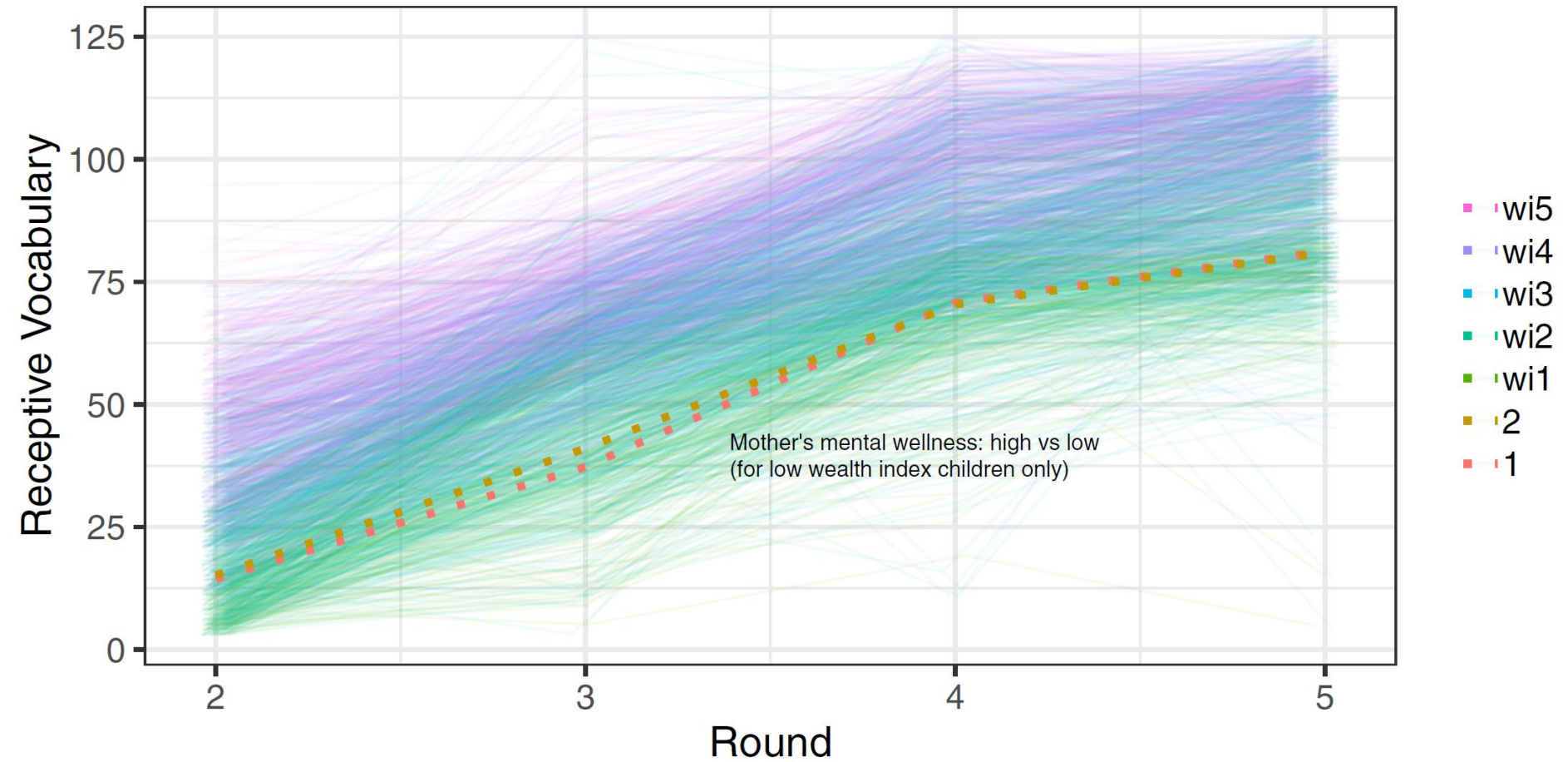
- Economic well-being → stunting... → ... language growth
- Maternal education → preschool, early literacy → (onward)

- **Country-varying paths**

- Economic well-being → M. mental wellness... → ... stunting
- Paths through pre-school attendance/quality
- Time on house chores → language outcomes
- Time spent studying in / out of school → language outcomes

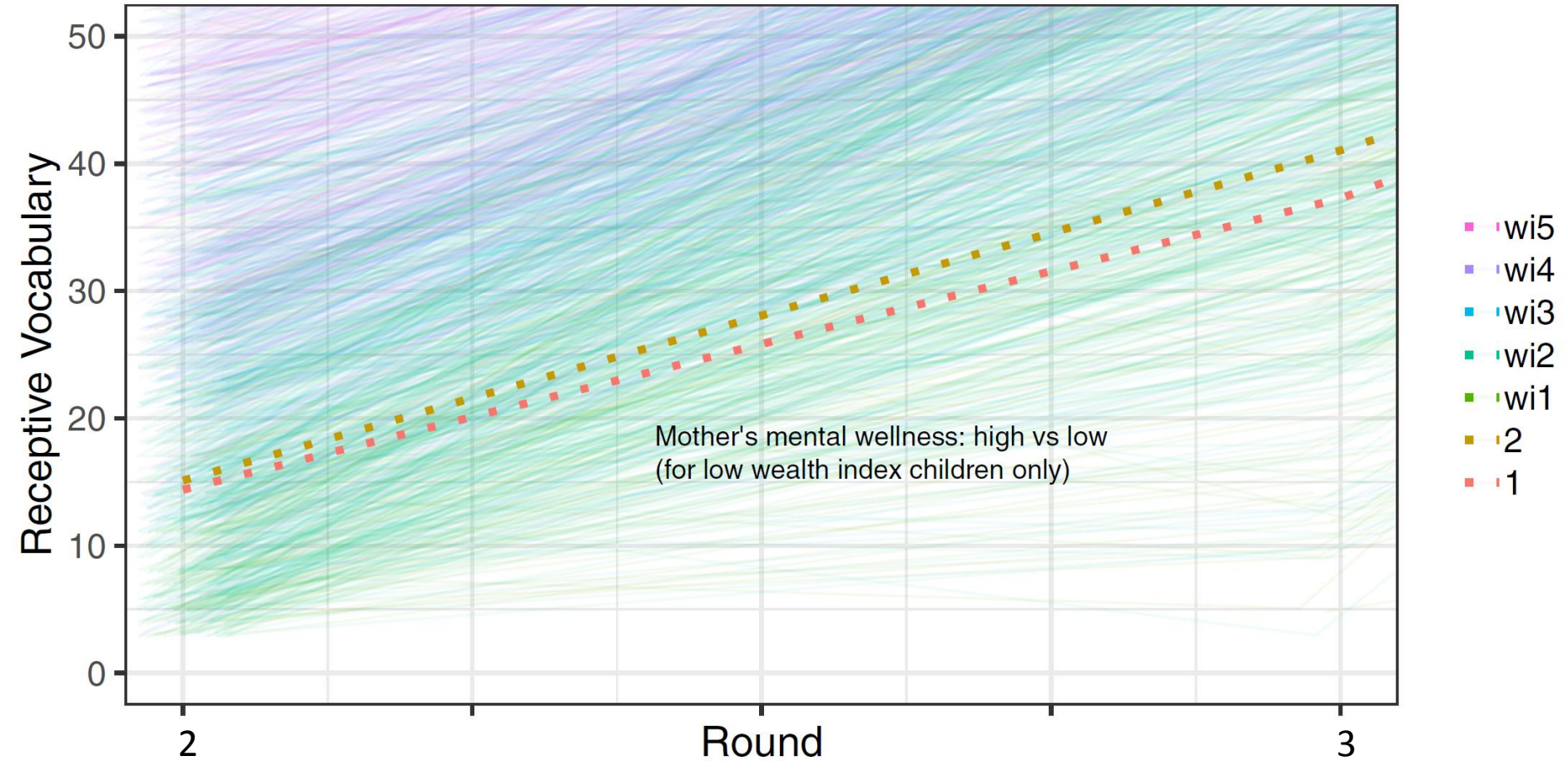
Illustrating effects, Peru data

Mother's mental wellness



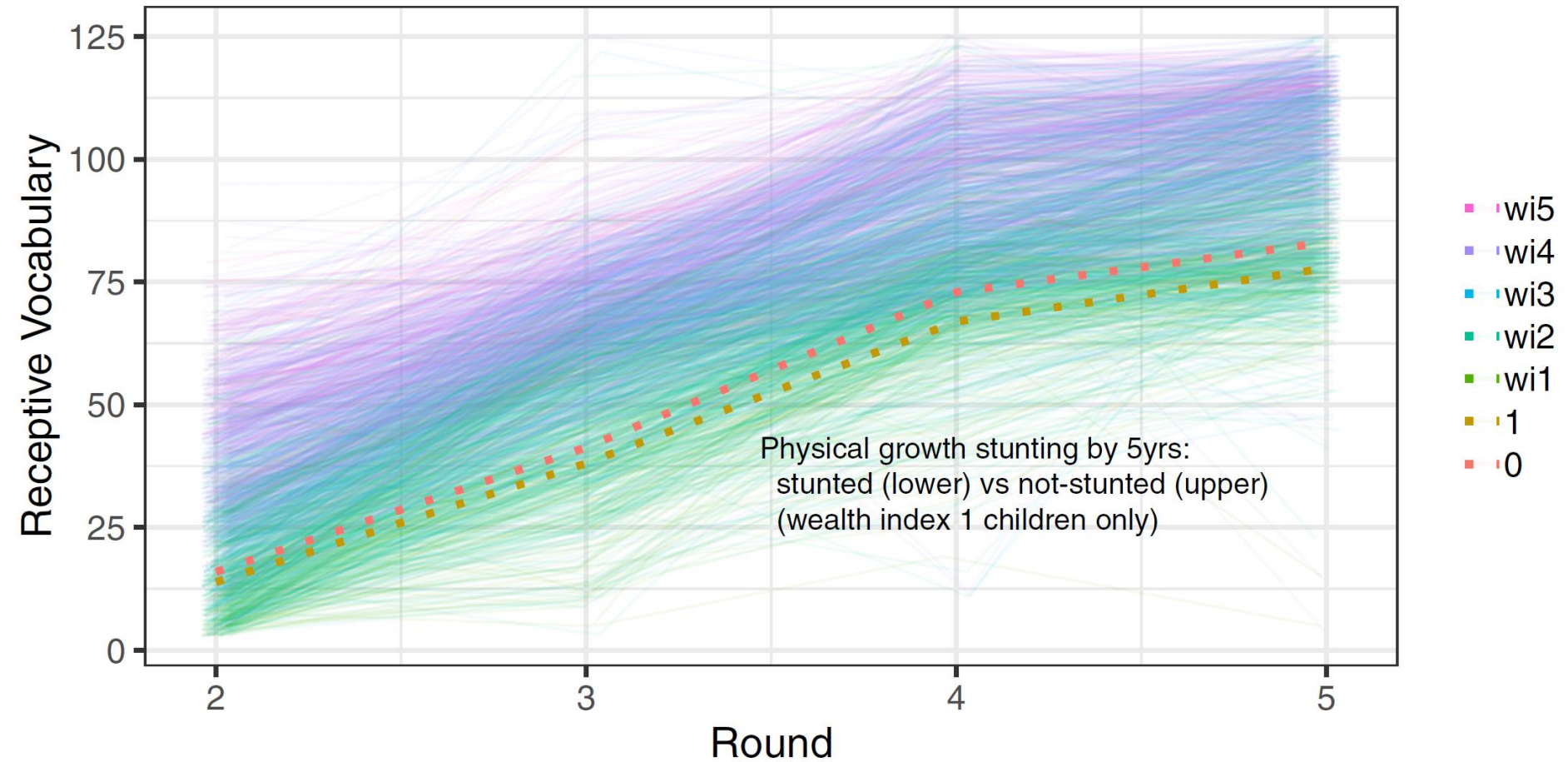
Illustrating effects, Peru data

Mother's mental wellness



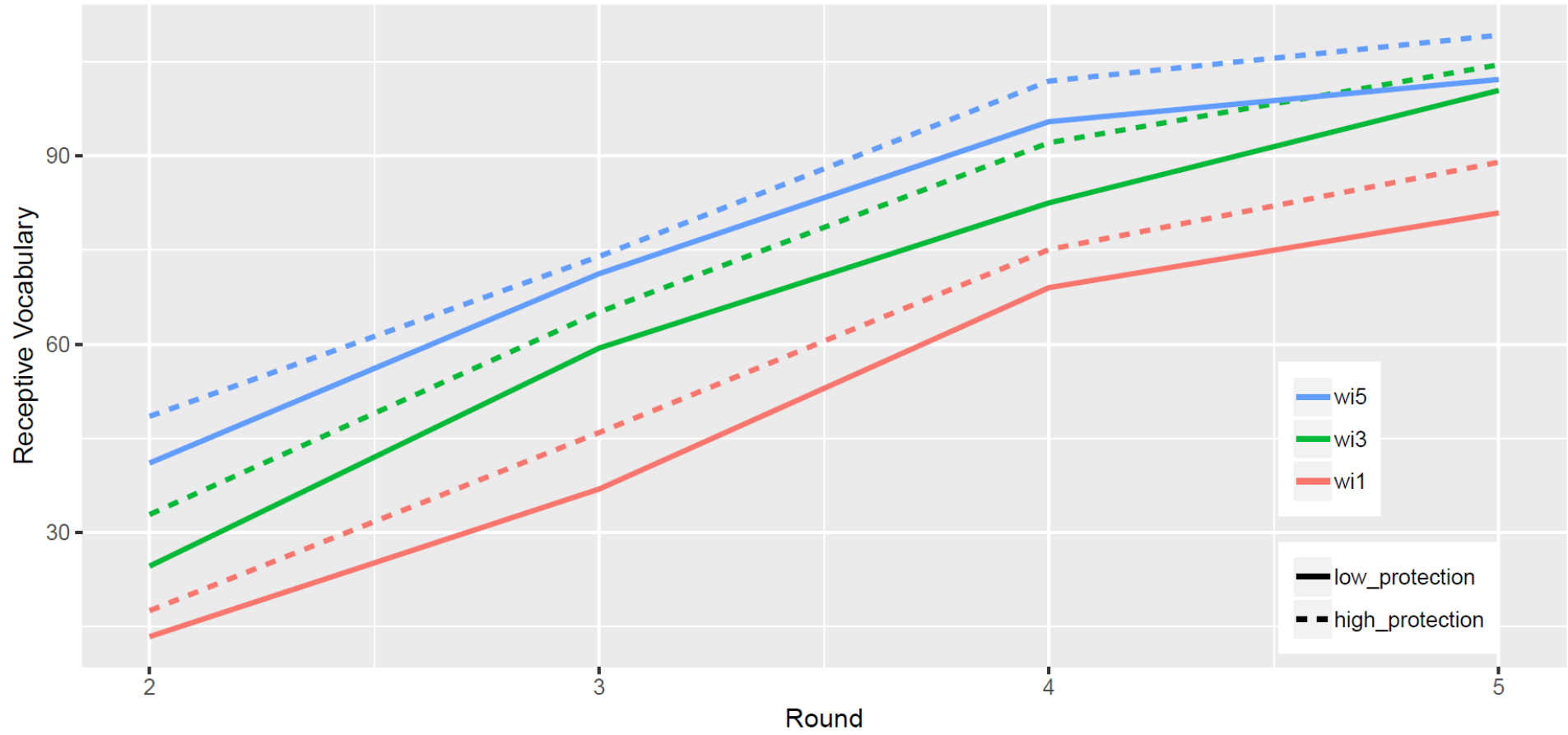
Illustrating effects, Peru data

Growth stunting



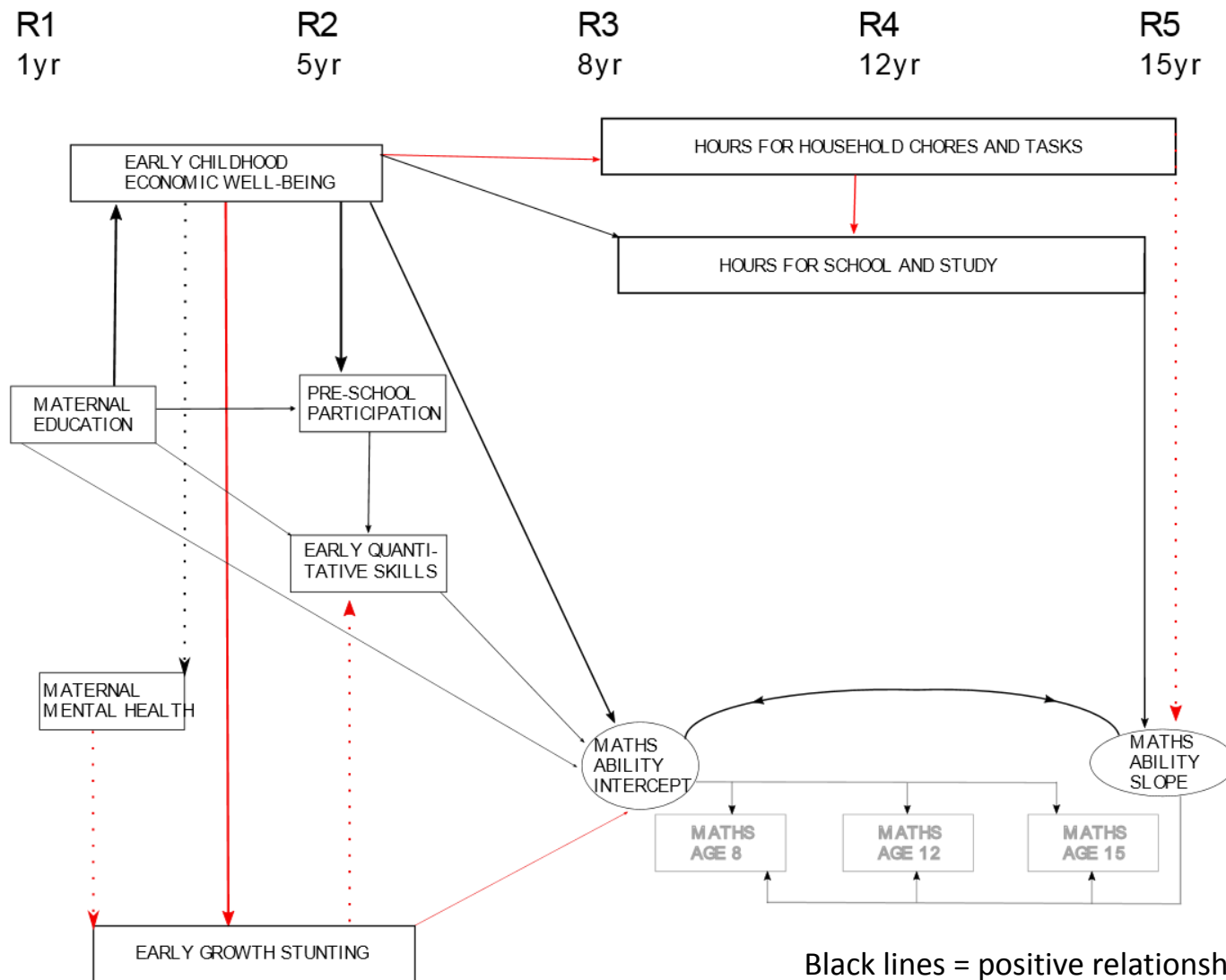
Illustrating effects, Peru data

A combination of protective factors : high and low scorers



wi = wealth index (quintiles)

Modeling change in quant ability, all 4 countries



Black lines = positive relationships
 Red lines = negative relationships
 Thickness of line is proportional to effect size
 Solid lines = found in all 4 countries
 Dashed lines = found in at least 2 countries

Modeling change in quant ability, all 4 countries

- Similar key factors to development of language ability, with some nuances
 - eg direct effects of early economic well-being seem limited to factors in rounds 1-3

Modeling change : limitations and prospects

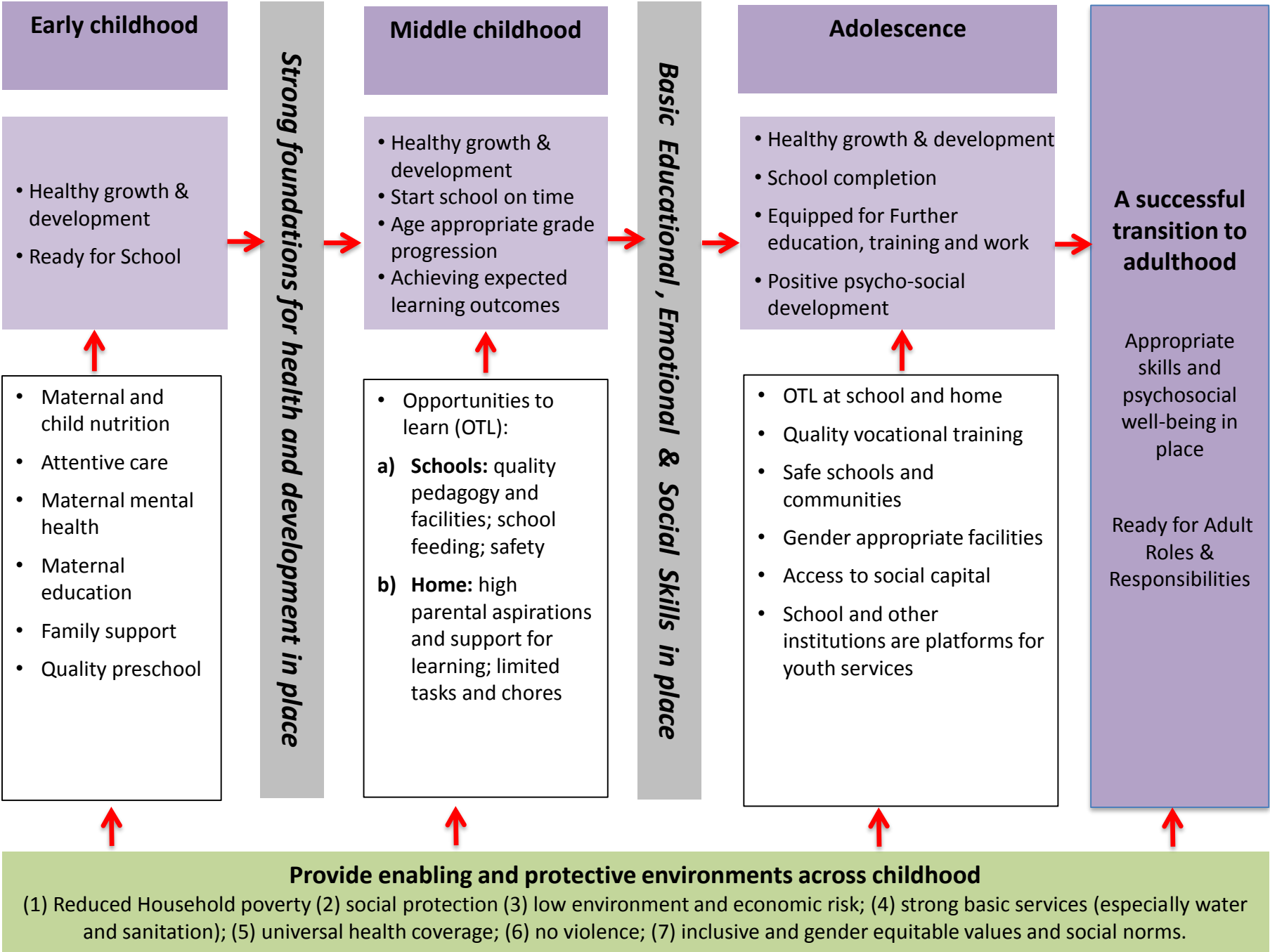
- Assumptions for this kind of modelling seen as problematic by many
 - direction? Bi-directionality?
 - unincluded variables could be at work, confounding things
 - we were not able to include changes in predictor variables, eg change in wealth index over the rounds
 - we were unable to include a measurement model for some of our scale predictors
- But the prospect of integrating many predictors and pathways (cascades?) over several countries to understand development of children and the connection to varying wealth remains important

POLICY & INTERVENTION

Promoting positive cascades

What matters

What makes a difference





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