Age-of-Walking as a Predictor of Childhood Vocabulary

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Gestures, walking, talking

Individual differences in toddler **gestures predict vocabulary size** two years later. Why?

- Gestures and later vocabulary may both represent a common underlying communicative ability.

- Or, gesturing may play a causal role because pointing and gesturing may prompt adult clarifications and expansions.

What leads to individual differences in gesturing?

- Imitation of parent gesturing, which show stable individual differences

- Alternative possibility: Age of first steps influences gesturing because infant walking is linked to increased engagement, social interactions, vocalization, and gesturing.

- Unlike crawling, **walking frees the hands** for gesturing and **raises the head** from the floor to a position more suited to social interactions.

- If early walking increases gesturing and if gesturing facilitates vocabulary, then age at walking should contribute to the prediction of later vocabulary size.

Implication

| Early Walking | → | More gesturing | → | Better vocabulary |

Testing the Prediction

Sample: Country-wide sample from Statistics Canada's National Longitudinal Survey of Children and Youth.

Walking measure: Parent report of age (to the nearest month) when the child took their first steps.

Vocabulary measure: Peabody Picture Vocabulary Test-Revised (PPVT-R) at 4- to-5 years.

Numbers

**Multiple regression predictors of PPVT-R raw scores**

- **Family**: education, income, marital status, number of children in home

- **Pregnancy and birth**: maternal health, maternal age, gestational age at birth, and birth weight

- **Child characteristics:** gender, months of breastfeeding, and age at PPVT-R administration

- **Walking:** age (mos.) at first steps

- **N = 1162** with complete data

Full model was significant ($F = 39.95$, $p < .0001$) and accounted for 26% of PPVT-R variance.

Age at first steps predicted PPVT-R scores ($F = 7.88$, $p < .01$), though **effect was small: r = -.03** (later age at walking with lower PPVT-R).

Other significant predictors of PPVT were: education (+), income,(+) months of breastfeeding (+), age at PPTV-R test (+), and number of children in the home (-).

Receptive Vocabulary by Age of Walking

Mean standard PPVT-R score ±1SE — Age at taking first steps (months)
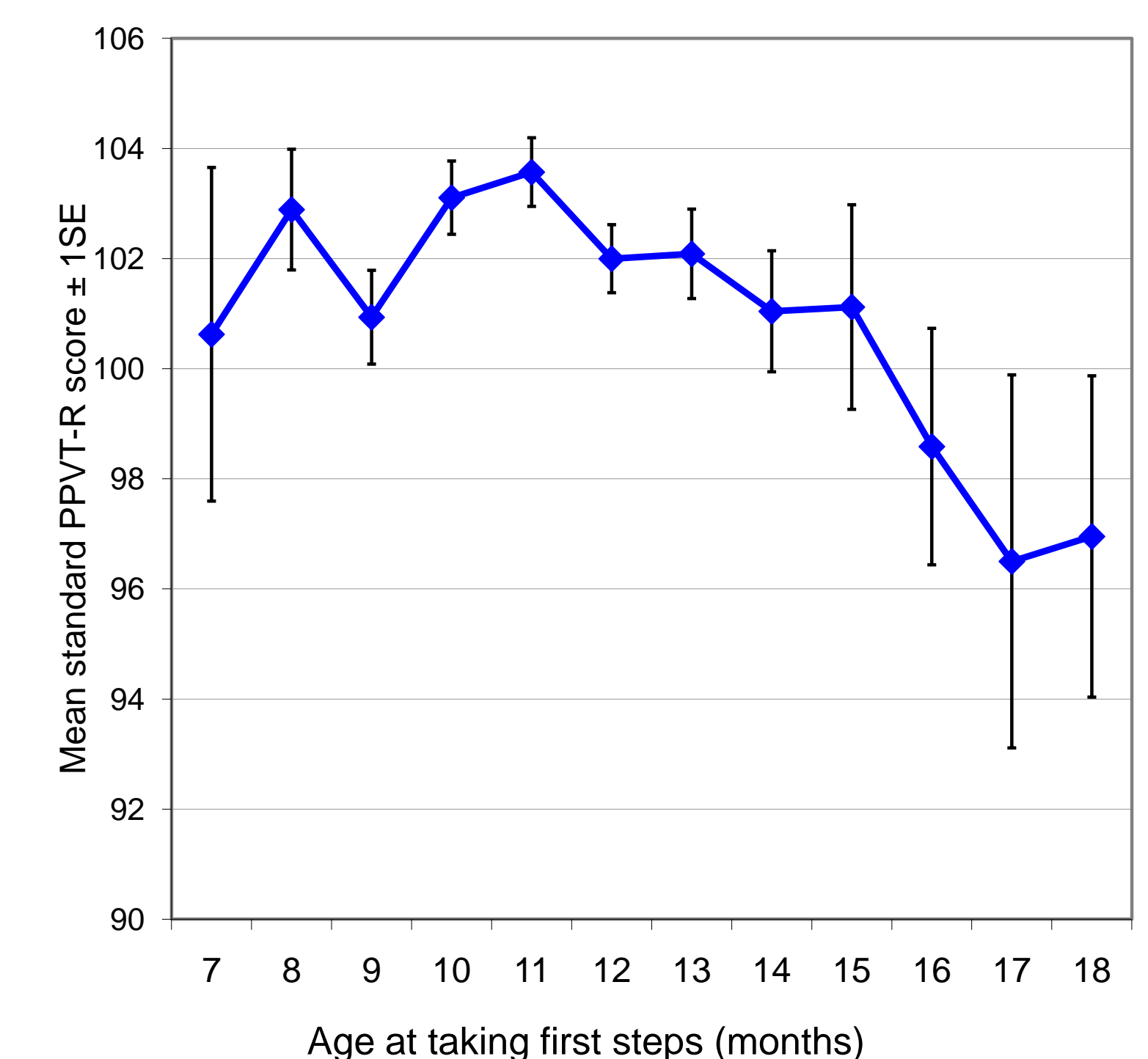
Meaning?

Because more gesturing is predictive of better later vocabulary and because early walking is predictive of more gesturing, we hypothesized that age of walking would be predictive of better later vocabulary. It was.

Walking creates conditions that facilitate social communication (e.g., gesturing), and early walkers, compared to late walkers, are advantaged by having more time under such facilitative conditions.

These findings underscore the potential **importance of individual variation in rate of progress through developmental milestones**.