Do children have a vocabulary spurt during their second year?

There is currently rather little agreement about the existence of, and explanation for, a vocabulary spurt in children during the second year.

Proposed explanations for a vocabulary spurt

(1) Developmental factors endogenous to the child (e.g., Dore, Franklin, Miller, & Ramer, 1976; Goldfield & Reznick, 1990; McMurray, 2007; Mitchell & McMurray, 2008)
(2) Quantifies spurts (maxima in velocity)
(3) Visually inspect plots of vocabulary data over age (Dromi, 1987)

Methods

Automatic Maxima Detection (AMD) Results

(1) Automatically detects statistically reliable spurts
(2) Quantifies spurts (maxima in velocity)
(i.e., maxima in the velocity function (first derivative))

Summary plot for 20 children

Average of all children

Example: child with 4 significant spurts

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