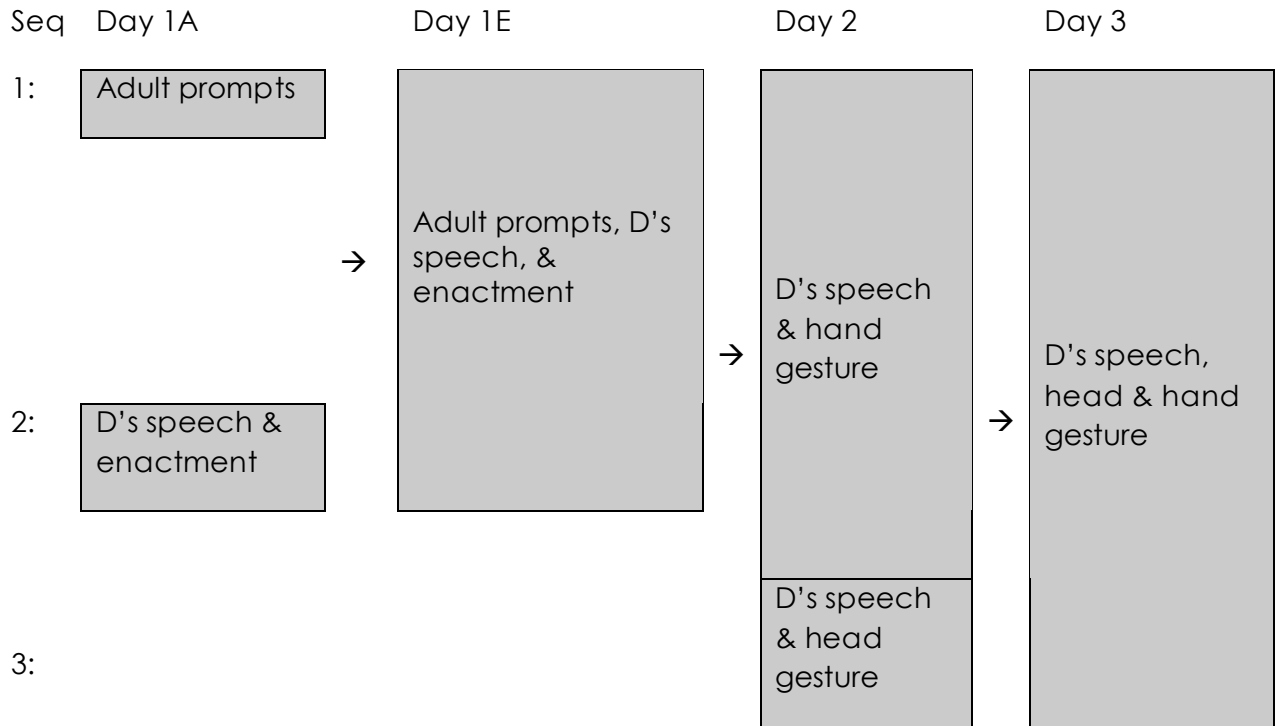


Figure 1b: Path of target utterance: Summary of milestones



Sequence 1: Boy traveling to school
 Sequence 2: Balloon following boy
 Sequence 3: manner of movement of balloon

Figure 2

Event sequence in film	First descriptions in discourse	Linguistic segment of target utterance on Day 3
Sequence 1: <u>boy traveling to school by bus</u>	Two-person utterances on Day 1A	Segment 1: “to school”
Sequence 2: <u>balloon following boy</u>	Combination of speech and enactment later on Day 1A	Segment 2: “the balloon followed him” (hand gesture)
Sequence 3: <u>manner of motion of balloon on the way to school</u>	Combination of speech and enactment on Day 2	Segment 3: “and back and forth back and forth” (head and hand gesture)

Figure 3
Day 1E

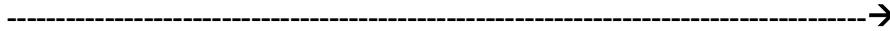
David is sitting on piano bench, talking to H:

- 1) *I need David to tell me what the beginning of the movie was about*
- 2) it was about red balloon a red 3) and guess what the little boy did?
- 4) I'm gonna act it out (gets up from seat and moves forward)...
- 5) the little boy climbed up (moves arms up & down as if climbing up a pole)
- 6) got the balloon (starting to turn in a circle with arms up, as if holding a balloon over head).
- 7) (carried it around/followed him) everywhere (still turning in circular motion with holding gesture)
- 8) & then he he he- the balloon followed me everywhere right here (walks out of room with arms down)

Figure 4

(Example 15.2 and lines 6-8 in Figure 3)

Day 1A	Day 1E	Day 1E
upper body circling motion, as if <u>balloon</u> circling <u>boy</u>	full-body circling motion with arms over head, as if holding <u>balloon</u>	straight line motion out of room, with arms at sides, as if <u>boy</u> with <u>balloon</u> following



“followed him [everywhere]”	“got the balloon”	“(carried it around/followed him) everywhere”	“the balloon followed <u>me</u> everywhere right here”
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Figure 5

Day 1E

(explicit indexical ground in boldface)

- 1) (walks to back of room; starts walking first) [the kid was] walking around and then walking around (still walking to back of room)
- 2) (reaches door at back of room, turns around and starts walking back toward camera; then speaks) and then the balloon- okay (stops) pretend this is a balloon (not visible to camera) (*M: yeah*)
- 3) and the balloon (starts to walk to back of room again) followed me everywhere
- 4) *M: and where was the first place that the boy went?* (reaches doorway at back of room and stands still) [I know] the mirror store (looks at parents)
- 5) *M: no that wasn't the first place...where was the first place he went?...*(starts to walk back toward camera before he speaks) walk through the town (drawing out speech, and as he talks he walks further than before – around the kitchen)
- 6) *M: ...why did he walk all across the town? was he walking?* (still walking extended route) Yes he was.
- 7) *M: and why did he walk? why didn't he take some transportation? why didn't he go in a car or a bus or a whatever it was that he was supposed to, what was he supposed to go on?* (D walking to back of room as M talks; reaches doorway) **pretend (turns around to face camera; standing in same spot, swings arms slightly) this is the bus** okay (*M: okay*)
- 8) we're on the bus
- 9) *M: Was he on the bus? Did he get on the bus?* yes he did (still standing in same spot, swinging arms) (*M: uh huh*) and then the little boy went to get on the bus (no gesture)
- 10) **(starts to jump as he starts to speak) pretend this is the bus**
- 11) (standing still) he jumped on the bus...
- 12) And then the bus [unintell] (interrupted by M)
- 13) *M: what happened? was the balloon on the bus too?* yes he was (standing still, facing camera)
- 14) *M: was the balloon in the bus too?* No (still standing still)
- 15) *M: ...you're right, the bus- the balloon wasn't on the bus why wasn't the balloon on the bus?* because [unintell] the balloon was floating in the air
- 16) *M: ...As the little boy was in the bus and the bus was moving along, where was the balloon floating?* In...the...air ...and then the balloon balloon followed him to school (no gesture)
- 17) *M: ...and where did he get off the bus?* [unintell] off off (jumps far forward as he says the second "off")
- 18) *M: and then what did he do?* and then he (starts to walk to front of room) walked...what? (turns and starts to walk to back of room)
- 19) *M...where did he go?* then he- **pretend this is school (walking to back of room) ... (continues walking in silence to door at back of room)**
- 20) then he (jumps) walked in
- 21) then the balloon walked in (spoken while standing still)
(starts walking again, through doorway, as if doorway is door to school) and then he said "hi [unintell] what are you doing?"

22) and then (turns to face camera, and starts to walk toward front of room) he said, “my name is [unintell] [how you doing] here?” (still walking)

23) and then... (*M: how think about the movie*) the end

1	2	3	4	5	6
Day 2 Retelling 1 sitting on couch, facing E; fidgeting	Day 2 Retelling 2 sitting on couch, facing E; fidgeting and apparently not focused	Day 2 Retelling 3 sitting on bed, talking to H; for the first time sitting still & apparently trying to concentrate; no hand gestures	Day 2 Retelling 4 Sitting still	Day 2 Retelling 5 after break, video started in mid- utterance; sitting still & concentrating	Day 3
	then he went to the bus			he walked with it	went to the school bus
				& then he went to school	& then the school bus took him to school
	& he went to the bus				
& he followed the bus	& then [he] (LH beat) [followed the balloon to school] (LH moves up & down)	& & then the balloon balloon followed him to school	then the balloon followed the bus	& then he followed the bus & then he- the balloon followed the bus	& then the balloon [followed him] (RH, IF extended, moves in downward curve) [& back & forth back & forth] all the way to school (head & RH, index finger extended, move side to side)
he went to school					
& then the balloon went in & out in & out in & out (head moving side to side)		& then he went back & then he went back & forth & back & forth & & this & that (head moving side to side)			
& & then he & then he went to school					

Figure 6

Notes

ⁱ Throughout the text, underlining represents what we take to be the speakers' intended referents.

Quotation marks are used to represent expressions that actually occur in (that is, are tokens of) the participants' speech.

ⁱⁱ D was diagnosed with "autistic disorder" (personal communication with his psychiatrist).

ⁱⁱⁱ This interpretation—of cohesively linked utterances on Day 3—is supported by the following underlined speech error, an inappropriately used pronoun "he," and its transformation to the fully appropriate full noun phrase, also underlined, "the balloon": "He cannot find the balloon (sitting still). And then he- and then the balloon got lost in the mirror." This change suggests that D was now taking into account the informational status of referents in his own earlier speech, and linking spoken utterances on a truly intralinguistic basis.

^{iv} The film shows two attempted trips to school by bus, one in the morning and the second after returning home for lunch. In the first, the boy and balloon run to school because they are not allowed on the bus, and in the second the boy travels on the bus with the balloon following. The two-party utterances on Day 1A make sense only with respect to the second attempted trip. The occurrence of two related yet different scenes in the film may have created difficulties not only for D, but for his mother as well, who, like most American viewers, were unfamiliar with the daily routine of schoolchildren returning home for lunch and back to school on the same day.

^v This conjecture is most compelling for the single word, "everywhere," that was clearly articulated in the utterance on Day 1E, the same word that was accompanied by the circling motion in the earlier utterance on Day 1A

^{vi} This is not meant to imply that the units of speech were re-used as unanalyzed wholes; that is, repeated in a parrot-like fashion. Rather, D's elaborations of earlier speech suggest the process was more active and dynamic; that he *actively made use of lexicogrammatical categories instantiated in earlier speech* to scaffold his new productions.

^{vii} The concept of a 'minimal unit' with the property of being a whole is from Vygotsky (1987: 4-5), concisely stated in this passage: "By a unit we mean a product of analysis which, in distinction from elements, possesses all the basic properties of a whole. Further, these properties must be a living portion of the unified whole which cannot be broken down further..." (Vygotsky, *Thinking and Speech* [Russian 1934], p. 9, quoted in Zinchenko, 1985: 97).

^{viii} A growth point is inferred (not 'operationally defined') from a) gesture form, b) coincident linguistic segment(s), c) co-expression of the same idea unit, and d) what Vygotsky (1987: 243) termed a 'psychological predicate' in the immediate context of speaking.

^{ix} The reasons why semiotic opposition creates instability and initiates change include:

- a) *conflict* (between semiotic modes: analog imagery/analytic categorical), and
- b) *resolution* (through change: fueling thinking-for-speaking, seeking stability).

Simultaneous semiotic modes comprise an inherently dynamic psycholinguistic model.

^x This way of putting “I”/”me” risks overstating the GP emergence and its unpacking as a temporal succession. While they may be successive, they need not be (cf. McNeill, 2005, p. 123, for an example of simultaneous GP differentiation and unpacking). The key difference is not time but function. Differentiation creates the idea unit, the cognitive core of the utterance at the moment of speaking; unpacking creates a frame in which to cradle it. These involve different meanings, which must obviously be compatible, but they can arise together or in succession, and both have been observed (cf. McNeill, 2005).

^{xi} This conjecture is supported by a recent imaging study (Kana, Keller, Cherkassky, Minshew and Just, 2008) which provides evidence that “people with autism are more reliant [than nonautistic participants] on visualization to support language comprehension.”

^{xii} This account holds out hope that some autistic behaviors can be overcome. In fact, an urgent question to be answered by future research is the extent to which the slow-motion emergence we witness across D’s retellings is parallel to the slow-motion emergence of typical ontogenesis, although at much younger ages.