Do Young Children Have Adult Syntactic Competence?
Michael Tomasello (1999)

Introduction
Fluent speakers of a language must be conventional and creative
- adhere to norms (conventions) in order to be understood
- produce novel utterances

Young children (under 3) regularly are creative with nominals: hear "allgone juice!"; will say "allgone paper!"
Nominal substitution indicates they treat nouns as a category that share behaviors
Not as creative with verbs: hear "the window broke", will not produce "he broke it"
Treat verbs as individual items, not as a group

Continuity assumption: a child's grammatical rules are the same as adults'; children have adult competence

A lot of young children's speech is grammatical.
Two possibilities: adult-like competence or imitation
Two ways to test it: spontaneous speech and nonsense words (tracer elements)

Purposes of article:
- present new data that shows early language is more concrete and item-based than is generally recognized
- discuss the implications of the new data for generative (Chomsky's UG) linguistics
- generally outline an alternative theory that does not attribute adult-like syntactic competence to children

Observational Data

Tomasello (1992): sampled 1 child for 1 hr every 2 weeks from 15-24 mo.
162 verbs; ½ used in only one construction
Mommy break, Daddy break (1 construction)
Mommy break cup, Break cup, Break with stick (3 constructions)
Unevenness: similar verbs appeared with/without subjects, markers, etc
Best predictor of utterance was not the production of other verbs the same day, but of the same verb on preceding days

Verb Island Hypothesis
Early language is organized and structured totally around individual verbs; aside from nouns, there is no syntactic organization

Similar results were found for determiners (Lieven, et al 1997), and in Italian (Pizutto and Caselli 1994) and Brazilian Portuguese (Rubino and Pine 1998) speakers. As expected, the verb forms that were most widely used were those that were most frequently heard, such as first person singular, as opposed to third person plural. Berman and Armon-Lotem (1995) showed that in Hebrew, the first 20 verbs learned by children were memorized and morphologically unanalyzed.

Overgeneralization Errors
Bowerman (1982, 1988)
Pinker (1989)
Overgeneralization is absent prior to age 3
Shows that before 3, there is no schema or rule

Experimental Data
We've seen if given a tracer element, children, by 3.5-4.0, can assimilate
Tomasello et al (1997)

Wanted to test younger children
15 kids 1;6-1;11, exposed to multiple adult models of two novel nouns and two novel verbs multiple times a day over 10 days

Look! The wug!
Look! Meeking!
Look what Ernie is doing to Big Bird! It's called meeking!
(used to ensure comprehension of transitive)

No difference in production/ comprehension of novel verbs/nouns
Big difference in combination:
Combined nouns freely (I see wug, I pushing wug) (14.5/child)
Only 1 transitive utterance of verb (I meeking it)

Olguin and Tomasello (1993) (two studies): produced similar results with kids 1;11-2;3
Dodson and Tomasello (1998): same method, 3/18 between 2;5-3;0 produced transitive, 3/6 over 3 did; therefore 3 is an important milestone

Akhtar and Tomasello (1997): tried to account for performance factors
Had a training phase modeling transitive utterances
8/10 3;8s produced, 1/10 2;9s did

Akhtar and Tomasello (1997): tested comprehension, not production
Kids heard “This is called dacking, Make Cookie Monster dack Big Bird.”
10/10 3;8s performed 90%+ correct
3/10 2;9s were above chance, though most did well with a control group of familiar verbs
Adults acted out a novel action, then said “can you make X meek Y?”
Was child’s first exposure to word (more natural occurrence)
2;9s still performed at chance

New method: expose group 1 to a new verb in a transitive form, expose group 2 to same verb in non-transitive form

Brooks and Tomasello (1999): 20 kids, avg. 2;10
93% of group 1 reproduced transitive
28% of group 2 produced it

Tomasello and Brooks (1998): 16 2;0, 16 2;6
2;0: group 1 11/16 correct
   group 2 1/16
2;6: group 1 16/16
   group 2 5/16

Lewis and Tomasello (in prep): 18 2;0, 18 2;6, 18 3;0
2;0: group 1 11/18 correct
   group 2 1/18
2;6: group 1 11/18
   group 2 2/18
3;0: group 1 16/18
   group 2 6/18

Similar results have been found in Hebrew and Chilean Spanish

Akhtar (1999): modeled non-canonical English
SOV: Ernie the cow tamming
VSO: Gopping Ernie the tree
1/12 2;8s reproduced it in SVO
4/12 3;6s
8/12 4;4s
Younger children hesitated, showing they knew the construction was strange, but it wasn’t enough to overcome tendency to imitate adults.

**Overall Pattern:** prior to 3, children are not productive with transitive constructions

around 3, we see evidence of an abstract transitive construction

Developmental trajectory:

![Graph showing developmental trajectory of children's ability to use transitive constructions.](image)

Fig. 1. Percentage of children (or in some cases responses - see Table 1) that produce productive transitive utterances using novel verbs in different studies (see Table 1 to identify studies and some of their characteristics).

Children's improvement is fueled by three constraints:

**Semantic Subclasses** (attributed to Pinker):

Verbs belong to subclasses which directs behavior

*Manner of Locomotion* verbs:

- I walked the dog, I drive the car
- *I comed her to school
- *She falled me down

**Entrenchment:** The more children hear a verb used in a particular construction, the less likely they will be to extend them

**Preemption:** Hearing a construction preempts use of an incorrect one

If a child expects "He disappeared the rabbit" but hears "He made the rabbit disappear," he is less likely to produce the former

Brooks et al (in press): tested kids 3;5-8;0

gave them pairs of verbs, one of which was frequent/entrenched, the other less so come/arrive, take/remove, hit/strike, disappear/vanish

less likely to overgeneralize the entrenched one

Brooks and Tomasello (in press): used Pinker's semantic criterion for verb subclasses, taught novel verbs to 2;6s, 4;6s, 7;0s.

some conformed to criterion, some did not (Tamming the ball vs making the ball tam)

4;6+ generalized based on perceived subclass, and were less likely to generalize if preempted by adult construction

Entrenchment appears around 3;0, Preemption and Subclasses at 4;6.

Caveats:

Constraints based on only 2 experimental studies
So far, phenomenon confined to transitives, but studies are emerging with similar results for intransitives, imperatives, and passives

Implications
Continuity assumption is in trouble because the data show that children’s grammar is not the same as adults’
Generativists respond by saying the grammar is complete, but external factors conceal true competence

Clahsen (1996): 3 theories:

1. Full competence plus external developments
External factors: memory, processing limitations (Valian 1991) and pragmatic limitations (Wessenbaum 1992)
No attempts to measure performance limitations
A number of the control measures in the above data rule out performance
Some children who failed to use transitive utterances were highly productive with novel nouns, performed conservatively in comprehension tasks also, and produced a transitive if they heard an adult say it first

2. Full competence plus maturation
Maturation refers not to UG but in peripheral linguistic competence, such as tense (Wexler 1994) and CP heads (Rizzi 1993)
Again, no research
All factors that might be subject to maturation were shared by experimental and control groups, still saw distinction

3. Lexicalism
All UG principles are in place but the grammar of particular language develops gradually through the interaction of abstract knowledge and learning of lexicon
If that is true, children must hear each specific verb used in each possible construction, which makes generativist accounts no different from usage-based ones
Also, there is no explanation for how a child links item-specific linguistic knowledge with UG

   a) list of key syntactic categories
   b) list of key experiential categories
   c) set of innate linking rules/linking hierarchy (agent, theme, goal)
Child sees a dog bite a man, hears “the dog bit the man,” general causal cognition tells child that the dog is the agent, linking rule tells child that agent=subject
But…
Ergative languages do not have subjects that operate like English, so the connection from agent to subject is not possible
2 analyses of early child language failed to find evidence for linking rules

Lieven et al (1997) analyzed first sentences of 12 kids, found no agents
   I like it
   I see it

Bowerman (1990, 1997): Children violate linking hierarchy regularly
   Pete hurt by car (patient=subject)

Parameter Setting:
Different languages have different parameters (head-initial/head-final)
Mazuka (1995): Children have to recognize the parts before they can set the parameters, at which point it becomes obsolete

Usage-Based Account

Most evidence for UG is just evidence against learning-based approaches
Adult endpoint doesn’t have to be so abstract

alternative: Functional and Cognitive Linguistics conceptualized it in a more child-accessible way, redefines how children learn, construct abstract entities

Cognitive-Functional Linguistics:

Children have to master language’s linguistic symbols/schemas
Attempts to explain all aspects of human language

Abstractness of a construction (its productivity) does not mean it is central to English
Incredulity construction:
   Him be a doctor!
   My mother ride a motorcycle!

A fluent speaker can create many more, but it is an odd construction
   accusative case, non finite verb

Nominal extraposition construction:
   It’s amazing the people you see here

Mixed constructions:
   I wouldn’t live in Boston, let alone New York
   Distinct communicative function, depends on a single lexical item (let alone)

Children have a structured inventory of constructions
   similar constructions are group toward the core-like center, others are in periphery

Cognitive-Functional Linguistics Process:
   Learn individual, item-based constructions
   Find patterns
   Make abstractions
   Create Inheritance Hierarchies

Theory involves a continuity of process between children and adults, not a continuity of structure
Everything is derived from comprehension and production

Children’s Learning Techniques:

1. Intention Reading/ Cultural Learning

   There are over 5,000 languages; children must be born prepared to deal with variation
   A large part of the task is imitative learning, not just mimicking because learner understands purpose and function of the behavior

Meltzoff (1995): 18 mo children attempted to reproduce adult action, even if it wasn’t completed

Carpenter, Akhtar and Tomasello (1998a): 16 mo children attempted to reproduce intentional actions of adults, not accidental ones
Utterances like “Her open it” is usually evidence against imitation, but children often hear “Let her open it” and “Help her open it;” they’ve just memorized the last part. They never say “Mary hit I” because they don’t hear that.

People make analogies between events based on relational structure

Gentner (1983):
When analogies are made:
specific properties are discarded
relations are preserved
connected systems of relations (like causality) are more likely to be transferred

Around late-preschool, children begin to make relations between existing relations

3 stages:
- given utterances using “push,” children will construct verb island
- given verbs similar to “push,” they will construct transitive construction: NP V NP
- given similar constructions, older children create higher order constructions: Subject-Predicate

3. Structure Combining
Children don’t just combine words, they combine precompiled linguistic constructions

Utterance: “See Daddy’s car.”

Child had previously used See____, such as “See Maria” and Daddy’s_____, such as “Daddy’s bread” and combined them to get complex utterance.

Diessel and Tomasello (in press):
looked at children’s earliest complex sentences (2+ verbs)
main clause was an epistemic matrix verb (think, know)
complement was a simple sentence the child had already mastered

they found:
first person only
no negations
present tense only
no complementizers

complex sentences were not a product of sentence embedding

Summary

The continuity assumption can’t be justified negatively
We have to conceive of adult linguistic competence as more psychological and less mathematical
We must recognize that children’s skills of cognition are greater than suspected
Usage-based approach has no linking problem and preserves continuity of process