“It Was So Much Fun. It Was 20 Fun!”

Cognitive and Linguistic Invitations to the Development of Scalar Predicates

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The choices that speakers make as they piece together sentences from the lexical, syntactic, and morphological resources of their language are not carried out independently of one another. Learning how to coordinate the components of grammar is an important aspect of first-language development. (Bowerman, 1981, p. 179)

How do children develop complex linguistic systems that necessarily involve multiple concurrent developments in semantic, syntactic, and cognitive realms? Research is often of necessity restricted to examining developments within one realm or another (e.g., syntactic, semantic, or cognitive)?

1 Sadie 3.4.8 (see text for further details on this utterance).
2 I am using the terms semantic and cognitive throughout fairly narrowly: semantic to refer to meaning that gets encoded in language, and cognitive to conceptual understanding of the world irrespective of how and whether those concepts get encoded in the language. The two are inextricably linked, of course, but are not one and the same; for example, young infants learning both Korean and English may well understand (i.e., cognitively) that spatial relations between objects may involve tight fit, as opposed to loose fit (Choi, 2006; Casasola, Wibourn, & Yang, 2006), but Korean-speaking children need to learn as well that this notion gets encoded semantically in Korean, while English-speaking children learn it is irrelevant to English semantic structure (Choi, 2006).
or within a small set of linguistic structures within a given domain (e.g., tense or inflectional elements, active vs. passive sentences, word meaning, development of one word (more, big) or a few related words (e.g., more and less; more and -er; all, every, some). We do not often get many glimpses of real-language data that allow us to see how the acquisition of multiple sets of constructs interact over time. Bowerman’s work has provided some of the most valuable insights into such interaction, showing how distinct structures influence each other when they begin to “bump up against each other’s territories” (Bowerman, 1978, p. 391; Bowerman, 1982). Her ground-breaking work on late-emerging errors in a number of realms (e.g., spatial and temporal terms, causative verbs, Figure–Ground expressions, and verb–argument structure) has provided countless new insights into the ways in which the child goes about constructing a grammar that encompasses a wide range of substructures. That work has provided some of the impetus behind much current theorizing on language development positing that children establish systems on the basis of networks in interaction, or dynamical systems. These theories suggest that the more children learn, the more their knowledge in one realm will begin to influence their knowledge in another (Elman, 1998; Gershkoff-Stowe & Thelen, 2004; Smith, 1999). The purpose of this chapter is to examine closely another wide range of structures in order to gauge the extent to which their acquisition hinges on such interaction between structures, and on interaction between syntactic, semantic, and cognitive factors. The data are interpreted as indicating that such interactions occur at multiple levels throughout the development of the forms in question.

The structures of interest here are a complex set of English constructions that broadly involve quantification and the specification of degree. These are related in the adult language through common syntactic patterns as well as related semantic content. The question addressed here is how the development of these constructs proceeds in the English-speaking child. Of critical interest are several major questions:

To what extent do children approach these structures on the basis of broad syntactic categories and structures? That is, does knowledge of syntactic structure guide children’s acquisition of these forms, or do the syntactic structures emerge out of the children’s experience with the forms?

Are the developments in the syntactic and semantic (and cognitive) realms autonomous, or do developments in one area influence developments in another?

Do children follow a common trajectory in the development of these systems, or is the developmental path followed idiosyncratic and distinct across children?

Does language lead cognitive development, cognitive development lead language, or a mixture of these two?

An examination of spontaneous speech data from two children will reveal that the process of learning is long and drawn out, involving considerable early lexically specific knowledge that evolves through small, repeated steps involving the child’s discovery of syntactic and semantic linkages, into a complex network of structures.
The structures to be examined are primarily those shown in (1) (related forms will be included as relevant). These involve degree markers such as too, -er, -est, enough, and the first as in constructs with adjectival and nominal heads, as in (1a) and (1b), as well as standard markers, which introduce standards of comparison, such as the last as in (1ai) and (1bi) and then in (1av) and (1by).

(1) a. As:
   i. J is as happy (as T).
   ii. J is too happy (for his own good to Y).
   iii. J is that happy.
   iv. J is so happy [that...]
   v. J is happier (than a lark than S). J is more intelligent (than...)
   vi. J is the happiest (of all in the world). J is the most intelligent....
   vii. J is happy enough (to Y for Y).

b. Ns:
   i. J has as much bread as many meatballs (as T).
   ii. J has too much bread too many meatballs (for his own good).
   iii. J has that much bread that many meatballs.
   iv. J has so much bread so many meatballs [that...]
   v. J has more bread more meatballs (than T).
   vi. J has the most bread the most meatballs (of all in the whole class).
   vii. J has enough bread enough meatballs (to Y for Y).

Such structures are relevant to the questions above for a number of reasons. First, they involve a whole set of structures that are interlinked. By examining their development, we can explore the extent to which a child builds up a system, rather than (or in addition to) storing individual constructions, and we might discover the point at which such a system might emerge.

Second, the structures are complex, both syntactically and semantically, as outlined below. An examination of their acquisition by children can therefore provide some insight into how children tackle complex constructs with complex interrelations.

Third, they involve individual lexical items that themselves show a range of lexical complexity. Many of the lexical items are polysemous or homophonous (e.g., as [I is as tall as H; J cried as he entered the room; J works as a plumber], too [I is too tall; M is tall, too, so J is so happy; J sat down so he could rest, and Mary did so too]). Many of them show syntactic co-occurrence or agreement patterns; for example, -er must take standard marker than; degree marker as requires standard marker as; and so forth.

Fourth, discovering how these develop across time could provide a possible window into the relationship between syntactic, semantic, and cognitive development. The semantic content of these structures is closely tied with certain cognitive concepts (e.g., they involve comparison across instances or items, assessment of relative degrees of the presence of a property or item, assessment of the serial order of the presence of such a property, and so forth). They may thus provide
substantial information on the relationship between language and cognition and possible insights into how and when language might “lead” cognition, and how and when cognition might “lead” language.

Fifth, examining such a broad range of structures in several children’s development may provide a possible window into universals and individual differences across children in the course of development.

In what follows, I will first review some of the relevant properties of the syntactic and semantic makeup of these structures, in order that we can then examine the syntactic and semantic development in children. It will become clear, even with this rather cursory overview, that these structures involve complex and sometimes unpredictable relations, both at the syntactic and semantic levels. The syntactic complexities involve orders of constituents within phrases, co-occurrence restrictions both within local forms and between elements and their complement types, and lexically specific idiosyncratic patterns of usage; the semantic complexities involve the polysemy of many forms, restrictions on semantic modification, and relative levels of semantic complexity across forms. I will go into considerable detail regarding the syntactic and semantic patterns observed in adult English, to provide the reader with a taste of the complex nature of this set of structures, and to help the reader gain an appreciation of the enormity of the task faced by the young language-learning child.

Following the initial layout of these structures, I will then outline some of what is already known about the acquisition of such structures. This will then be followed with the data from the children reported on here and an assessment of the relevance of those data to theories of acquisition in general.

SYNTACTIC CONSIDERATIONS

Local Form

One could briefly describe the shared syntactic makeup of these structures as involving degree markers, as in (2a), and quantifiers, as in (2b).

(2) a. Degree markers: as, too, that, so, -er, -est, how
    b. Quantifiers: much, many, little, few, enough

With adjectives, the degree markers occur immediately before the adjective in most cases: as happy, too happy, that happy, so happy, how happy, as in (3a), but the bound forms -er and -est attach as suffixes to many adjectives (happier, happiest).

With nouns, the degree markers alone cannot occur immediately preceding the noun, but must occur with a quantifier, as in (3b): as much bread, too much bread, that much bread, so little bread, how little bread. Mass nouns select much and little as quantifiers, count nouns select many and few (as many meatballs, too few meatballs, etc.).

The bound forms -er and -est can overtly attach to the quantifier few (fewer, fewest), but suppletive forms more and most are used instead of much-er, many-
er, much-est, many-est. Similarly, suppletive forms less and least occur instead of little-er and little-est.3

The quantifier enough can occur with adjectives, but must occur after them (happy enough), as well as with (both mass and count) nouns (enough bread, enough meatballs), as in (3c). Enough cannot occur with any of the degree markers: *so enough bread, *that happy enough.

(3) a. as/too/so happy
   b. as much/too little/so much bread [Mass N]
      as many/too few/so few meatballs [Count N]
   c. happy enough
      enough bread
      enough meatballs

Finally, while many adjectives (mostly single syllable, and two-syllable forms ending in an unstressed vowel (happy), /sr/, or syllabic /l/, plus a few idiosyncratic forms (e.g., quiet) (Quirk & Greenbaum, 1973)) show suffix -er and -est for the comparative and superlative; longer adjectives (other two-syllable forms and longer forms) take more and most: more intelligent, the most interesting.

The precise syntactic structure of these forms is hotly debated. Disagreements concern, among others, the status of the degree markers: Are they specifiers of APs, as in (4) (e.g., White, 1998); modifiers of As, as in (5) (Bresnan, 1973); DP heads, as in (6) (Corver, 1990; White, 1998), etc.? Is more of the Q (Corver, 1997b) or Deg (Rijkhooek, 1998) category, and are enough, much, etc., Q heads (Corver, 1997b) or adjuncts (Doetjes, 1997, Doetjes, Neeleman, & Van de Koot 1998)? Also in dispute is the number of distinct structural types involved (e.g., Bresnan, 1973: one; Corver, 1997b: two; Kennedy & McNally, 2005: three), related to the questions of whether the adjectival modifiers and the nominal modifiers derive from the same or different structures and whether the degree markers are of the same or different syntactic classes (Deg vs. Q). (For a sample of alternative treatments, see, e.g., Bowers, 1970; Bresnan, 1973; Corver, 1997a, 1997b; Doetjes, 1997; Doetjes, Neeleman, & Van de Koot, 1998; Hackl, 2001; Hukin, 1977; Huddleston, 1967; Keenan, 1987; Kennedy, 2000; Kennedy & McNally, 2005; Liao, 2005; Matsushansky, 2002; Napoli, 1983; Pinkham, 1985; Rayner & Banks, 1990; Rijkhooek, 1998; White, 1998). (See Androutsopoulou and Español-Echevarría [2006] for a comparison of English with another language, Spanish.)

These considerations are well beyond the scope of this chapter. However, they highlight the intricate nature of the syntax of even the local constructs and should alert us to potential key questions regarding acquisition: Does a given modifier (e.g., so) emerge with adjectives and nouns at the same time, and do children treat its use with adjectives and nouns in the same way? Do all, or even a subset, of the modifiers develop concurrently, indicating a shared syntactic source, or do they develop separately?

3 The forms littler and littlest occur as the comparative and superlative forms of the adjective little, of course, but not as the comparative and superlative of the quantifier little.
(4) \[ \text{AP} \]
\[ \text{Deg P} \quad \text{A'} \]
\[ \text{Deg} \quad \text{A} \]
\[ \text{as} \quad \text{happy} \]
\[ \text{too} \quad \text{that} \]
\[ \text{so} \quad \text{er} \]
\[ \text{est} \quad \text{how} \]

(5) \[ \text{AP} \]
\[ \text{QP} \quad \text{A} \]
\[ \text{Deg} \quad \text{Q} \quad \text{happy} \]
\[ \text{as} \quad \text{much} \]
\[ \text{too} \quad \text{many} \]
\[ \text{that} \quad \text{little} \]
\[ \text{so} \quad \text{few} \]
\[ \text{er} \quad \text{est} \quad \text{enough} \]
\[ \text{how} \]

(6) \[ \text{Deg P} \]
\[ \text{Deg} \quad \text{AP} \]
\[ \text{as} \quad \text{A} \]
\[ \text{too} \quad \text{happy} \]
\[ \text{so} \quad \text{er} \]
\[ \text{est} \quad \text{how} \]

**Elaborated Forms**

Beyond these local/immediate patterns, one key feature of these constructs in English is the ability to “stack” or employ “multiple modification” with these phrases. Thus, one can use phrases such as *much, so much, as much* in conjunction with Decks *too* and *-er* as in (7):
(7) a. Adjectives:
   *J is much too courageous for...*
   *J is so much happier than T*
   *J is as much more courageous than T as B is.*

b. Nouns:
   *M has much more courage than A.*
   *M has so much more courage than A.*
   *M has that many too many meatballs.*
   *M has many too many friends.*

Again, researchers have disagreed on the best syntactic analysis of such structures in the adult language, primarily according to whether local degree modifiers are viewed as specifiers of AP, in which case, the structure might be, for example [\textsc{ap} \textsc{degp} \textsc{dp} so much more courageous] (Bresnan, 1973); or as DP heads, in which case, the structure might be [\textsc{degp} \textsc{dp} so much more [\textsc{ap} courageous]] (White, 1998).

Despite the differences in analyses, some important aspects of the behavior of these structures are relevant to any analysis. For the purposes of exposition, I will not make any assumptions regarding the internal structure of these constructs and will use "Deg" and "Q" for the elements in each of the two "modifiers" in the sequence, so each multiple modification can be described as involving a sequence \textsc{deg1} - \textsc{q1} - \textsc{deg2} - \textsc{q2} [with or without one or more elements in this sequence as null elements].

Some important co-occurrence restrictions apply to the multiple modification of forms:

First, the first modifier must have a nonempty \textsc{q1}. One cannot say, for example, "so more courageous, "so happier, "so more courage, but must say "so much more courageous, so much happier, so much more courage.

Second, \textsc{deg2} must be nonempty. One cannot say, for example, "so much much courage, "this much much courage, "that much happy but can say, e.g., "so much more courage, this much too much courage, that much happier. This implies that enough cannot occur as \textsc{q1}, which is the case: "so much enough courage.

Third, the only degree markers that can occur as \textsc{deg2} are -er and too: so much happier, this much too much milk are possible, but not "so much as much courage, "so much as courageous, "this much enough milk. This appears to be related to the semantics of -er and too, described below.

Finally, multiple modification is not restricted to these forms. Other quantifiers and terms expressing quantities besides much, many, few, and little can occur in initial position, as in (8):

(8) *I gave us two gallons too much water.*
   *J has five dollars too much.*
   *There are tens more people here than we thought.*
   *J is five inches taller than M.*
   *This dress is a (little) bit too short.*
   *It is way too short.*
   *It is a lot shorter than hers.*
(See Kennedy and McNally [2005] for a proposed syntactic and semantic analysis of the full set of forms into three types.)

**Status of Very**

One word that participates in many of these constructions is *very*. The syntactic status of *very* is unclear (e.g., Androutsopoulou & Español-Echavarria, 2006; Bresnan, 1973). In some ways, *very* acts similar to the Deg markers above, in that it can combine with adjectives and quantifiers, as in (9a) and can combine with a \( Q_{1} \) *much/many* to act as a modifier of a Deg\(_{2} \) - Q\(_{2} \) structure, as in (9b).

(9) a. *very* happy
   *very* much bread/*very* many meatballs

b. *very* much bigger
   *very* much more intelligent
   *very* much too big
   *very* much more N
   *very* many more N

Compare (9) with the forms in (10) with the semantically similar forms *really* (and *real* in colloquial American English), which are not allowed in many of these structures. Note also that the acceptable forms—10d, 10f, 10h—take on the meaning “truly much bigger,” and so on, not “very much bigger.”

(10) a. *really* /real happy

   b. *really/ *real* much/many N

   c. *[really/real much] bigger

   d. really [much bigger]

   e. *[really much] too big

   f. really [much too big]

   g. *[really much/many] more N

   h. really [much/many more N]

On the other hand, *very* is unlike the Deg markers in that it can modify a second Deg\(_{2} \) - est, without an intervening \( Q_{1} \), as in (11a) (and 11b?), and it can occur in combination with an immediately preceding Deg\(_{2} \) without *much* intervening, as in (11c). However, even its acceptability modifying -est is restricted: It is (marginally?) acceptable with *most* in adjectival modifying -est (11b), but not in nominal phrases (11d).

(11) a. *the very* biggest / *the very much* biggest

   b. *the very* most intelligent

   c. *so* very big / *so much* very big

   d. *the very* most bread / *the very most* meatballs

These idiosyncratic properties of *very* appear related to and grounded in its source meaning, “true,” coming from Old French *verai* (F vrai) (Cassell’s Concise
Dictionary, 1997; see Slobin, 1997, for similar relic semantics invading the use of indirect and direct object markers in Chinese and Persian.) Indeed, in earlier times, English allowed *cerver* and *veriest*, but these are now obsolete. It is also of note that there are some polysemous uses of *very* that also reflect and derive from this earlier meaning; see (12).

(12) Polysemous uses of *very*:
   a. *the very end; the very top; the very bottom* [ = absolute]
   b. *her very own; the very same day* [ = absolutely, exactly]
   c. *the very thought; the very idea* [ = mere?]

Order of Constituents within NPs

When an NP contains both a nominal Det (*a, the*) and an adjectival phrase containing a degree marker, the order of constituents depends on whether the Deg form is bound (*-er, -est*) or free (*too, so, as, this, that*). If Deg is free (and, therefore, precedes the adjectival), the nominal Det must occur between the A and the N, as in (13). (Note that in this regard *very* does not act like a free Deg; see (14).)

(13) a. *a too happy N
   b. *too happy a N
   c. *an as happy N as...
   d. *as happy a N as...
   e. *a that happy N
   f. *that happy a N
   g. *a so happy N
   h. *so happy a N

(14) a. *a very happy N
   b. *very happy a N

Also note that an alternative to *so A a N*, as in (13h), is *such a A N*, as in (15) (see Bresnan, 1973):¹

(15) *such a happy N*

When Deg is *-er* and *-est*, however, both orders are used, but acceptability depends on whether the *-er* and *-est* have been suffixed to the following adjective or occur in the suppletive forms *more* and *most*, and on the desired meaning. In (16), for example, the order in (16b), (16f), and (16h) appear archaic or obsolete, but in (16d), the comparable order appears acceptable. In (16g), *the most handsome N*

¹ Note that if constructions like that in (15) are viewed as deriving from *a so much happy N*, with a rule that *so + much + such*, there is a problem in that this rule could not apply to comparable phrases such as *so much rice* and *so many things*, as these do not mean the same as *such rice* and *such things* (Bresnan, 1973).
has a superlative meaning, whereas *a most handsome* N has an "intensifier" meaning ( = "a very handsome N"). In contrast, in (16h), only the form with *a* is even marginally acceptable, and it carries the meaning of intensification; the form with *the* appears unacceptable.

(16) I never saw...
   a. *a* happier N
   b. Archaic: happier a N
   c. *a* more handsome N
   d. more handsome a N

   He is...
   e. the happiest N
   f. "happiest the N
   g. a/the most handsome N
   h. Archaic: most handsome a/the N

Long Distance Co-Occurrence Limitations

Complement Types One key aspect of the syntax of these forms is the co-occurrence restrictions on the forms that complements must take for certain structures. The degree markers *as, -er, -est, too, and enough*, all take strictly constrained standard markers and complement types. With degree markers *as and -er*, the standard markers are strictly *as and than*, respectively:5

(17) a. *T is as happy as J.*
   b. *T is as happy "like" than/"from" to/"that" when/"of" J.*
   c. *T is happier than J.*
   d. *T is happier "from" to/"off" in J.*

With -est, too, and enough, wider options of complement types are available, although still restricted:

(18) a. *T is the happiest in the world/of all/ (out) of that group.*
   b. *T is the happiest "from" than them.*
   c. *T is too short to play that part/for that part.*
   d. *T is too short "off/"in" than X.*
   e. *T is tall enough to play that part/for that part.*
   f. *T is tall enough "off/" in/" than X.*

The degree markers so and how do not usually occur with complements (but see, e.g., *T is so happy that he can't stop smiling*). Nor does the degree marker that; this is because that itself expresses the standard of comparison. Thus, *T is that tall* is equivalent to *T is as tall as that.*

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5 In the case of *as...as*, it is of note that the degree marker *as* can be omitted in some contexts, such as more archaic uses (*Its fleece was white as snow, He came in quiet as a mouse*) and some more colloquial and idiomatic speech (*He's blind as a bat*).
Obligatoriness of Complements For most of these forms, in principle, the complement/standard of comparison is not obligatory. If a complement is not specified, the standard of comparison is understood from the discourse or context of the utterance. Thus, given the appropriate contexts, one can say: *This is just as tall/taller/the tallest/too tall/tall enough.*

Nevertheless, an initial examination of real language use reveals important differences in the occurrence of complements across structures: A good, and pertinent, example is a comparison of *as...as* and *-er...than* constructions.

To gauge the occurrence of complements with these two structures, two types of data were consulted: first, a set of written texts, and, second, a collection of Kuczaj’s Abe transcripts from CHILDES (http://childes.psy.cmu.edu). The data show that degree marker *as* is invariably accompanied by standard marker *as* and that *-er* is much less reliably linked with *than*.

**Written Texts:** A search in three written texts (Oller & Eilers, 2002; Schwartz, 2003, n.d.) involving eight different writers and a total of 99,241 words, reveals the following:

**For as...as:** Out of 510 total uses of (any meaning of) *as*, only 5.3% (*N = 27*) involved the degree marker *as*. But within these 27, fully 92% (i.e., 25) involved overt specification of the standard of comparison with *as...*. The remaining two occurrences were both of the type *as A or A-er than* (e.g., “as large or larger than...”), where the use of *than* precluded the use of *as*. In addition, there were other uses of *as* showing distinct semantic usage, see below, as well as two occurrences of *as much as + Number*, three occurrences of *as long as* to mean “providing/provided,” and 30 occurrences of *as well as* (plus 12 occurrences of *as well*). Thus, when degree marker *as* does occur, it seems to be highly linked overtly with its standard marker *as*.

**For -er...than:** There were 402 total occurrences of *-er* forms with comparative import in these written texts. (This leaves out idiomatic or frozen phrases such as adverbial *further, the latter, no longer* (time), and so forth.) Of the 402 *-er* comparatives, 160 involved *better, fewer*; and significantly *A-er*, mostly used in reporting of statistical results in which one or other group was reported as performing “better” or “significantly higher/lower” than another group. Since the occurrence of these forms in these academic texts may inflate the patterns artificially and could skew the general distribution of the use of *than* phrases, the remaining 242 occurrences were examined without these. The remaining 242 occurrences of *-er* forms show 31.8% of the constructions including a *than* phrase, and 68.2% without. Thus, the link between *-er* and its standard marker *than* appears less strong than that between degree marker *as* and its standard marker *as*.

Furthermore, the occurrence of the *than* phrase appears to be related to the overall structure of the sentence. When the *-er* phrases occurred with *than*, only 33.8% of the sentences showed the comparative as a noun modifier (i.e., 66.2% were like *larger than X, not larger N than X*). In contrast, when the *-er* phrase occurred without *than...*, fully 78.2% of the sentences showed the *A-er* modifying a noun (e.g., *larger N*). This difference is likely related to differences in the informational structure of the discourse in the two cases.
It is also worth noting that both A-er...than and A-er without than showed similar numbers (16 vs. 15, i.e., 20.8% of constructs with than vs. 9.1% of constructs without than, respectively) of constructs involving qualification of the A-er form through modification by much, a lot, slightly, somewhat, etc. (e.g., "much stronger than," "slightly smaller than," "considerably weaker than," "notably smaller").

Adult Speech to Children: These glances at the usage of forms by adults in written texts suggest that children may be confronted by a number of different patterns of co-occurrence of usage across what may be deceptively similar constructions. In order to gauge whether these patterns hold also in adults' speech to children, a collection of Kuczaj's Abe files on CHILDES (http://childes.psy.cmu.edu) were examined.

For as...as: To examine the use of as...as by adults, the first and last 50 Abe files (files 1–50 and 161–210) were examined. In all 100 transcripts, Abe's mother and father showed a total of 32 utterances in which (all meanings of) as was used. Out of these 32, 4 involved as as a standard marker occurring with same ("same...as"). Of the remaining 28, 26 (92.9%) involved the degree marker as (as opposed to other semantic uses of as), a proportion of usage that is much higher than for the adult written uses of degree marker as.6 (Of these 26 utterances, 23 (88.5%) also included the standard marker as. Of these 23, 13 were as soon as, 4 were as big as, 2 as far as, 2 as many as, and 1 each of as long as and as good as. The three that did not include standard marker as were all within the scope of negation—not as bright in here, not as annoying, not quite as wobbly.)

This high proportion of occurrence of the standard marker as is in line with the high occurrence in the adult written texts, indicating a reliable occurrence of standard marker as whenever degree marker as is used. Interestingly, on one occasion when Abe used degree marker as without the standard of comparison (in Abe 23), and another when Abe similarly used same (in Abe 180), his parents questioned him: "as much money as what?" "the same as what?"—suggesting the adults' expectation that degree as is accompanied by a standard of comparison introduced by as.

For -er...than: Adults' use of -er forms in speech to children was similarly examined in the first 50 Abe files. In those files, Abe's mother and father and one other adult used 57 comparative forms. Of those, 55 (96.5%) occurred without an accompanying than phrase. One of the two that did occur with than was used in reaction to Abe's "huh?" when the mother first used A-er without than; the other was used by the father in addressing the mother, not Abe. Among the 55 -er forms without than, 26 (47.3%) were uses of later, 14 (25.5%) were uses of better; all but twice in conjunction with a verb (like it, taste, make it, shows up, set, look, feel, aim, work, looks). Only two out of all 57 utterances contained a modified noun (e.g., "better idea"), one of these in imitation of Abe ("bigger shoes").7

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6 The remaining two uses of as were; "We want them to do as they want to do" and "as a matter of fact."
7 See Alrenga (2005) for a discussion of the occurrence of weak and strong nominal determiners in attributive comparative constructions, in which a comparative adjective occurs pronominally.
It is also interesting to note that the only uses of A-er involving multiple modification in speech directed to Abe involved a little (ting) bit A-er, which occurred in 6 of the 55 utterances (10.9%) without than phrases. There was also one use of a lot older than, but this was directed by the father to the mother. Finally, there was a relatively high number of noncomparative uses of better (9 uses) as a quasi-modal, as in his father’s “we better run fast if we see any ghosts # huh?” (Abe 46).8

These data on -er indicate that the link between -er and than in adults’ speech to children is much more tenuous than in the written adult texts, which also showed a less reliable link between -er and than than between as and as. This suggests that the link of -er with than may lack “validity” (in the Competition Model sense [MacWhinney, 1987; McDonald, 1989]) for children. At the same time, the qualification of A-er with multiple modification may be fairly similar in incidence to comparable forms in adult language to adults (here, use in about 10% of -er forms that occurred without than phrases).

We will see below in the data from Sadie and Rachel that these differences between such constructs as as...as and -er...than may have significant consequences in children’s acquisition of these forms.

Challenges for the Child

These syntactic considerations highlight a number of aspects that may pose challenges for children. These include:

- Differences between adjectival and nominal structures in the overt use of a quantifier after Deg modifiers (so happy, *so much happy, *so bread, so much bread): Do children show evidence at any point of treating these as having either separate or common source structure?
- Suppletive forms (less, least, more, most): At what point do children realize that these express comparative and superlative notions and are related to -er and -est?
- Idiosyncrasies of the placement and use of very: Do children treat very like the Deg markers?
- Polysynny of very (and others, see below)
- Local distributional restrictions:
  - Distributional restrictions concerning mass/count forms (much, many, etc.)
  - Distribution of -er versus more as comparative markers on adjectives.

How and when do children link these? Or do they?

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8 In Abe’s speech across these transcripts, he used comparative-looking forms 46 times, all but once with just three forms, better, bigger, and later: He used Modal better 9 times, later (on) 10 times, better with a verb 9 times (6 of these: feel better), bigger 10 times, mostly (80%) with grow (“grow bigger,” “grow bigger and bigger,” “grow bigger and biggest” [also “grow big and big”]). He used bigger N 7 times, and blueer (with uncertain semantic content) once.
• Long distance distributional restrictions:
  • Co-occurrence restrictions, e.g., between -er and than and between as and as: At what point do children observe these?
  • Degree of obligatoriness of standard of comparison: Does the highly reliable and available link in as...as, for example, make as...as easier to learn than the largely unavailable link between -er and than?
  • Form of multiple modification:
    • Must have a nonempty Q
    • Restricted to modification of -er and too as Deg
When do children begin multiple modification, and do they observe these restrictions?
• Order of constituents:
  • A enough vs. enough N
  • Order within NPs with nominal determiners (so great a man vs. such a great man; too great a man vs. a very great man; etc.)
When do children observe these?

We will see that all of these syntactic matters come to bear and pose their own challenges in children’s development of these forms.9 While it is impossible to address all of them thoroughly within the scope of this chapter, the longitudinal data presented will help provide some insights into their answers.

SEMANTIC CONSIDERATIONS

An examination of the semantic content of these forms provides another window into the challenges faced by the child in acquiring these forms. I will discuss the major semantic notions encoded through these forms; examine the complexities involved with the encoding of these notions, their polysemous character, and their relationship with cognitive concepts; and return again to the challenges these pose for children acquiring these forms.

Meanings Encoded

INTENSIFICATION

Modifiers of Adjectives or Quantifiers: First, a wide collection of these forms, as well as others, are used to express INTENSIFICATION,10 or to express “very X” (or

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9 There are, of course, many other matters relevant to the acquisition of the syntax of comparatives, which will not be covered here. These include, for example, the syntax and semantics of post- and pronominal comparatives (She met a [dusser younger than Mary]; She met a younger worker than Mary) (e.g., Lechner, 2000); comparative correlatives (The more you eat, the fatter you get; e.g., den Dikken, 2005).

10 SMALL CAPS will be used throughout to represent semantic concepts.
a similar paraphrasable notion involving "very"). These include all of the fairly
standard degree-marking forms in (19), used to modify adjectives and quantifiers,
as well as more colloquial forms such as those in (20) (which have often evolved by
semantic bleaching from other meanings).

(19) so ___
  very ___
  really ___
  real ___
  quite ___
  reduplication ("a big big X," "a little little X," "itsy bitsy spider")
  lengthening ("a biiiiig X," "a liiiiiittle X")

(20) great ___ ("great big"; selects for big? Probably a variant of reduplication,
given "big" meaning of great—"The Great Lakes")
  all ___ (as in "all dirty," "all clean," "all messy," where all is not inter-
  preted as a quantifier but as an intensifier)
  pitch ___ ("pitch black"; selects for black, dark; from original meaning,
  "as black/dark as pitch")
  damn/darn ___ ("a damn/darn good read")
  stone ___ ("stone cold"; selects for cold; but see: "I'm stone in love with
  you" [Stylistics])

The meaning INTENSIFICATION is also often expressed on adjectives and
quantifiers with the noninterrogative uses of how, as in (21).

(21) "How sweet it is to be loved by you." [sung by James Taylor/Carole King, lyri-
  cs and music by Holland, Dozier, & Holland]
  "I just called to say I love you. I just called to say how much I care. I do.
  (...) And I mean it from the bottom of my heart." [composed and sung
  by Stevie Wonder]

This use of how is quite common in parents' speech to children, as in the following
casually overheard examples:31

(22) [Dad to child, about 3 1/2—Dad bringing pizza to table in airport:]
  Dad: Look how big this pizza is!

31 Note: Throughout the text, and in all tables, cited forms shown in bold are the target forms.
Underlining of cited forms indicates stress.
[M, F, and child (boy, about 3) have walked out to end of pier]
M: Do you see how far out we are!
Boy: How? [with falling intonation]12

Finally, while the marker -est has as its central use the marking of the superlative (below), it is also used, in a semantically bleached fashion, to express intensification, as in (23).

(23) This dress is made of the finest silk. [to mean “very fine silk,” not necessarily the absolute best]
She is the most intelligent person! [to mean “really intelligent,” not necessarily the most intelligent]
This is the best ice cream! [to mean “really good,” not necessarily the best]

Multiple Modification: The meaning INTENSIFICATION is also expressed through quantifiers and other forms modifying a degree marker, Degx, as in (24).

(24) a lot _____ (“a lot bigger”; selects for -er; cannot be used with the other
Degx form, too —“a lot too big)
much _____ (“much bigger,” “much too big,” “much more,” “much too many”; can be used with either Degx form, -er or too)

12The response of this child, using How? with falling intonation and without the modified adjective, instead of the appropriate How far? suggests that the child does not treat how far as a constituent. This type of query is common among young children. Other examples from my son, Jaime, are the following:
(i)  (J 3:9.2)
M: How old is Amy today?
J: How [with falling intonation]?
M: Four.
J: Why?
M: ’Cause it’s her birthday.
J: Is she a mommy?
M: ’No—she’s not as big as her mommy, is she?
J: What’s her mommy?
M: How old is her mommy [checking that is what J meant]?
(J nods).
M: Twenty-nine.
J: And what is Rachel?
(J answers own question by holding up one finger].
M: One.
J: What is Julio? [re: boy living in apt downstairs]
M: How old is Julio?
J: How [with falling intonation]?
M: Two.
(ii)  (J 3:9.11)
J: Cows have three feet.
M: Uh-uh, [“no”]. How many do they have?
J: How [with falling intonation]?
M: Four feet.
way ___ ("way bigger," "way too big," "way more," "way too much/many":
can be used with either Degs form, -er or too)

EXTREME ENDS Another group of forms express the placement of a property or quantity at (the absolute) extreme ends of a scale—that is, encoding that the item in question exemplifies the property in question more than any other item it is being compared with. As noted by Ullman (1972), these express "absolute disparity" (shown through the occurrence of the as the accompanying article). These include -est and its suppletive variants, as in (25).

(25) ___ -est ["biggest," "most intelligent," etc.]
    best [≡ good + -est]
    worst [≡ bad + -est]

The proper identification of X as the entity with the highest degree of presence of some property entails (at least an implicit) comparison of the level of the property in that entity with every other entity. In this regard, the superlative is similar in use to words like favorite, top, bottom, first, last. This makes a superlative, in the adult language, a "specialized" comparative, and this is reflected in the fact that across languages, superlatives are generally more marked than comparatives (Ullman, 1972) (e.g., superlative degree markers are often derived from comparative markers in languages, but not vice-versa). However, because superlatives usually refer to items that show extreme presence of a property, the more complex processing involved in multiple comparisons may be "bypassed" at least sometimes when superlatives are used, which may lead ultimately to a simpler processing than for comparatives. This simpler processing results in the common evolution across languages of the superlative form into a form used for intensification, as in (23) above (Ullman, 1972).

RELATIVE POSITION ON A SCALE A number of these forms express the relative position of an entity along a scale or property in relation to either some explicitly specified standard of comparison or one that is implicitly understood from the context. These include -er, too, enough, and as. The comparative expresses the relative position of an entity or property X in relation to a standard of comparison, Y, along a scale. Explicit comparatives thus

Establish an ordering between objects x and y with respect to gradable property g using special morphology whose conventional meaning has the consequence that the degree to which x is g exceeds the degree to which y is g
(Kennedy, 2005, p. 7)\textsuperscript{3}

\textsuperscript{3}Note that all gradable predicates, including comparatives "...map objects onto abstract representations of measurement (SCALES) formalized as sets of values (DEGREES) ordered along some dimension (HEIGHT, LENGTH, WEIGHT, etc.)" (Kennedy 2005: 2).
The forms *too X* and *X enough* express the surpassing of an upper limit on a desired range or the surpassing of a lower limit on a desired range, respectively.

The meanings of the negative forms of these constructs are fairly straightforward for *-er* and *enough*: *not...X-er* denies that the item in question surpasses the standard of comparison (and is, therefore, either equal to it or below it in the presence of the property in question); *not...enough* denies that the item in question has passed the lower limit into the desired range of a property.

However, for *too X*, the negative has two separate interpretations. When *too X* is accompanied by a complement, or one is understood from the context—"*J* is not too old to play Peter Pan"—or when the negation is denying a prior assertion—"*J* is too old. No, he's not too old"—the interpretation is one in which *not...too X* denies the surpassing of an upper limit on a desired range. However, when *not...too X* is not accompanied by a *to X* or for *X* complement expression, as in (26), the negative form is ambiguous. It often does not mean the denial of a surpassing of an upper limit, but is rather the equivalent of the negation of *very X*, with the resulting meaning “not very X.”

(26) *T* is not *too* bright.
    I don’t have *too* many cards left.

The equative form, *as...as*, expresses that *X* reaches the same level as another entity *Y* along some scale. An important characteristic of the semantics of *as...as*, as for all scalar predicates (Gazdar, 1979; Horn, 2004; Levinson, 2000) is that it only asserts a lower limit (Horn, 1972), not an upper limit. Note, for example, that *as...as* is not equivalent to *the same...as* in (27) to (32). While in (27), the two appear more or less synonymous, this is not true for the others. In (28), (a) indicates that *J* is shorter than *T*, while (b) does not carry that implication. In (29), (a) suggests that *J* has just made it to *T*’s height, while (b) is more likely to be a sarcastic quip that *J* and *T* are not the same height at all. A form like (30a) usually means that *J* is shorter than *T*, while (30b) means simply that the two are different heights (and *J* may be taller). And the forms in (31a) and (32a) are perfectly acceptable, while those in (31b) and (32b) are marginally acceptable, if acceptable at all.

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14I am focusing primarily on internal negation, rather than external negation. Internal negation refers to the normal uses of negation, in which an expression is embedded under a negative term. External negation refers to negation that applies to the choice of expression; it questions the appropriateness of that expression over another. As examples, (iii) presents examples of internal negation, (iv) examples of external negation.

(iii) a. *Today’s not a cold day* [i.e., it’s warm]
    b. I don’t have any sisters. [i.e., I have no female siblings]
    c. Bryn Terfel didn’t *sing* last night. [i.e., no melodious sounds came from his mouth]
    d. This window isn’t *too* big. [i.e., it’s not very big]

(iv) a. *Today’s not a cold day; it’s freezing*
    b. I don’t have any sisters; I have extra special sisters.
    c. Bryn Terfel didn’t *sing* last night; he warbled like the angels.
    d. This window isn’t *too* big; it fits the opening exactly.
(27) a. *J is as tall as T.*
   b. *J is the same height as T.*

(28) a. *J is almost as tall as T.*
   b. *J is almost the same height as T.*

(29) a. *J is hardly as tall as T.*
   b. *J is hardly the same height as T.*

(30) a. *J is not as tall as T.*
   b. *J is not the same height as T.*

(31) a. *J is as tall as T, if not taller.*
   b. *¿J is the same height as T, if not a greater height.*

(32) a. *J is at least as tall as T.*
   b. *¿J is at least the same height as T.*

The reason for this discrepancy is that *as...as* asserts meeting the lower limit of a range on a scale (Horn, 1972), with that lower limit specified by the standard of comparison ("T"). This implies a direction on the scale, going from the lower levels to the higher levels. The use of *as...as* conversationally implicates "not more than Y," but this implicature can be overridden, as in (31) and (32), or as in "I'm certainly at least as old as you (if not older, in fact older...)" (Horn, 1972). I shall return to this below.

One final form that should be mentioned in relation to relative position on a scale is the interrogative use of *how*. *How X* ("How many do you want?" "How blue are his eyes?" "How deep is your love?") questions the relative position of an entity along some property or quantity—thus, asking where along a scale this particular item falls. Some noninterrogative uses also relate to the relative position on a scale, as in, *Let's see how many beads we have,* or *The inspector wants to know how clean the restaurant is.* This scalar use of *how*, questioning the relative placement of some item along the scale in question, stands alongside the intensifier use discussed in relation to (21) and (22) above.

**Complexities Involved**

**Polysemy of Forms** One notable aspect of these forms is that they frequently exemplify polysemous uses.15 Take, for example, *as*. In addition to its equative/degree marking use, *as* has a number of other meanings. Some of these uses are quite frequent, as exemplified by the written texts examined above: Out of 510 uses of *as* in the written texts, we find the following distribution of uses:

\[ as = \text{degree marker (discussed above): 5.3\%} \]
\[ as = "like"/"same as": \text{as it is in Grade 5; as in Miami} \text{ 16.1\%} \]

15They can also exemplify homonymic uses—e.g., *-er* of the comparative vs. agentive *-er*. But most of the uses discussed here are taken to be cases of polysemy, unless otherwise noted, so I will use the term *polysemy* throughout.
as = “categorized as”; he worked as a chef; regarded as prestigious; treated as a variable [32.2%]

as = “according to”; as measured by, as explained by [10.8%]
as = “during” or “because”: as he was leaving; as she had heard the news [10.4%]

In addition, there are many idiomatic and semi-idiomatic uses, including as well (as) [8.2%]; (such) as [5.9%]; as a result (of) [1.8%]; as a whole [1.6%]; as opposed to [1.9%]; and, less frequently, as much as + Number, as long as [ = “provided”], as follows, as an example, as a consequence of, as compared to/to that, as if, as such, as to/from [ = “about”], insofar as, as of (these latter uses about 5.9% all together).

Many of the other forms are similarly polysemous: e.g., so [intensifier (so big), “thus” (it was dark, so she turned on the light), place holder (he did so, etc.), too [affirmative too big versus negative not too big; homonymic?) conjunction too; etc.], and eer, mentioned above. (This is also true of some of the other relevant forms as well: e.g., some — see below.) It is not known to what extent such polysemy may affect acquisition. Do all children acquire the same meanings for a form in the same order (i.e., for the same submeanings first, second, etc.)? Does acquisition of one meaning deter the acquisition of another for the same form? Does polysemous use make the meaning of a form opaque? For example, is it harder for English-speaking children to learn the superlative meaning of -est than the comparative meaning of -er because of the polysemous use of -est for both the superlative and intensification? Is it harder for Spanish-speaking children to discover the comparative meaning of más—más grande ‘bigger,’ than it is for English-speaking children to discover the comparative meaning of -er because of the frequent polysemous use of más as an intensifier in constructs such as ¿Qué niño más grande! ‘What a big boy!’

Semantic Modification Given the semantic content of these forms, we can return to a consideration of those Deg forms that allow for multiple modification. It will be recalled that only -er and too can occur as Degs, allowing modification such as so much bigger, a lot taller, way too tall, and so forth. We can now relate this to the semantics of these forms: The two forms -er and too express the relative position of an item on some scale, either in relation to a standard of comparison (in the case of -er) or in relation to some desired range on a scale (in the case of too). The multiple modification allowed with them expresses the quantification of

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Out of 85 uses of so in the written texts discussed earlier, the following meanings were in evidence:

so = intensifier [23.5%]
so = “thus”; it was dark outside, so she entered the house [28.2%]
so = “in order that”; he coughed so she would know he was there [9.4%]
so = place holder: did/did do so; and so on; especially so; and so forth [25.9%]
so = “also,” “and”; … and so did she [3.5%]
and many idiomatic uses [about 9.4%], such as so far [= “up to now”], or so [= “more or less”? something like that], so = “in this way” [“so selected”], so much/many X [ = “a certain amount/number of X”], even so.
the distance of the item being compared from that standard of comparison or the
desired upper limit—*much taller, this much too tall.*

It is not surprising, perhaps, that multiple modification is not allowed, then, in
cases in which other semantic notions do not involve such a comparison—as in the
cases of those expressing INTENSIFICATION or EXTREME ENDS. However, there
are some other forms that, like *-er and too,* express relative position on a scale,
but that nevertheless do not allow expression of modification through multiple
modifications. In particular, one cannot use multiple modification with as or with
*enough:* *'T is this much as tall as J, *'T is way tall enough for the part, *'T is as much
tall enough for the part as J is.*

Another semantic anomaly concerns limitations on the choice of forms as *Deg,*
-*Q,* modifiers that can occur with the two possible *Deg,* forms: While *-er and
too* can both appear as *Deg,* with many forms (*much bigger, much too big; 5 feet
bigger, 5 feet too big*), not all constructs are equally acceptable with *-er and too as
*Deg,* (a *lot bigger, *'a lot too big, so much bigger, *'so much too big*).

These anomalies can be seen as gaps in the system, insofar as not every *Deg,*
element meeting the semantic requirements for multiple modification is accept-
able within the adult system. How do such gaps affect the acquisition of these
forms? Does the semantics of multiple modification guide syntactic development,
or vice-versa (or is there an interaction of the two)? If semantics guides develop-
ment, we might expect that when children first begin using multiple modification,
you will use it for *-er and too,* but also overgeneralize it (only) to as and *enough
(this (much) as big, so (much) big enough.* If syntax guides semantics, we might
expect children to use multiple modification initially with *Deg,*-*Q,* forms that
express wider notions than allowed semantically—producing, for example, *this
(much) so big, so (much) biggest.*

**Semantic/Cognitive Complexity?** Finally, it appears that the semantic con-
tent of the forms in question can be ranked or compared in terms of the cognitive
complexity that may be associated with understanding their full import.

Some forms—the intensifiers—express the presence of a property in one item.
Others entail the assessment and comparison of the same property in two or more
referents (*X-er, X-ext* [in its full superlative meaning]). In terms of cumulative cogni-
tive complexity, we can expect the latter types to be more complex than the
former:

*Intensification:* Judge extent of *A* in *X.*

*Comparative and Superlative:* Judge extent of *A* in *X* and of *A* in *Y,* and com-
pare those extents.

Still other forms (*too, enough*) demand the assessment of a property in some
entity and a comparison of that extent to some desired range, whether that desired
range is explicitly or implicitly specified. Again, in terms of cumulative cognitive
complexity, we can expect these to be more complex than those expressing a simple
specification of the extent of *A* in *X:*
Intensification: Judge extent of A in X.
Too and enough: Judge extent of A in X, and compare this with the limits on
a desired range of that property A.

Finally, some of these expressions entail a direction of the range of a property
on a scale. Thus, -er, as, enough, for example, express the assertion of meeting or
surpassing some limit from below that limit. Their negation expresses that they
have not met or have not surpassed that limit, again coming from the lower end of
the scale upward. Thus, J isn't taller than M does not usually mean that J is shorter,
just that he is either the same height or shorter; J isn't as tall as M does not usually
mean that J might be taller than M, just usually that he is shorter; and so forth.
Cognitively, the understanding of such forms, including the representation of a
directional scale, is necessarily more complex than understanding forms that do
not imply a direction on a scale and only specify whether a given point on a scale is
met (e.g., the same X, not the same X).

Furthermore, these forms that involve an upward perspective on a scale generally
carry the conversational implicature that a higher level on the scale does not
apply. Thus, for example, J is as tall as M generally implies that J is not taller
than M. This implicature is a default interpretation of scalar predicates and is
not an absolute, as the implicature can be denied—J is [at least] as tall as M;
in fact, he's about a foot taller (see Papafragou, 2003b; Papafragou & Musolino,
2003 for discussions). One can predict that the complex pragmatic signals that
govern the licensing or denial of the implicature may demand cognitive abilities
that go beyond the assertional aspects of these structures and will need to build
on such understanding. As such, the child's facility with the pragmatics of implicature
can be expected to be acquired after the semantic aspects of reference
are in place.

**Challenges for the Child** These semantic aspects, like the syntactic aspects
above, highlight some of the major challenges facing children acquiring the meanings
of these constructs. These include:

- Many of the lexical items are polysemous: very (intensification, absolute,
  etc.), -est (superlative/extreme ends, intensification), as, so, too X vs. not
too X, and so forth. How does the child discover the meanings associated
  with such forms, and does their polysemous nature affect acquisition?
- There are restrictions on semantic modification in multiple modification:
  - Only some Deg₃ meanings are modifiable through multiple modification—
    these have to do with relative position on a scale (-er, too); but
    not all forms expressing relative position on a scale can be modified in
    this way (e.g., as, enough, even -est). Do children attempt to express
    multiple modification for such forms?
  - While -er and too can both appear as Deg₃ with many Deg₁ - Q₁
    forms, not all Deg₁-Q₁ options are equally acceptable with -er and too
    as Deg₃. Again, do such gaps in the system pose significant challenges
    for children?
• Semantic/cognitive complexity:
  • While some forms entail the assessment of the presence of a property in one item (e.g., intensifiers—very X, so X), others entail the assessment and comparison of the same property in two or more referents (X-er, X-est, as X as).
  • Some forms (too X, X enough) entail the assessment of the presence of a property for some (often unexpressed) desired purpose, which entails a desired range of the property.
  • The proper use of some forms requires an understanding that their use implies a direction on the scale (e.g., as X as, X enough).
  • The proper interpretation of such forms further requires an understanding and control of the conversational implicatures associated with their use (i.e., understanding that a default interpretation implies that a stronger predicate on the same scale does not apply, but also that such an implicature can be modified—denied or asserted explicitly).17

Do these differences in semantic/cognitive complexity affect the development of these forms in children's speech—especially their order of acquisition and any immature uses?

As with the syntactic complexities, all of these semantic factors play roles in the development of these forms. While it is, again, impossible to address all of these questions thoroughly here, the data presented will provide some insights into possible answers.

SNAPSHOT OF ACQUISITION FROM PREVIOUS RESEARCH

A great deal of work has focused on children's acquisition of some aspects of these structures. Most prominent among these is work on the acquisition of the comparative and superlative and work on the acquisition of the mass/count distinction; some recent work has also begun to address the acquisition of conversational implicature. There are also some suggestions of how children develop the syntax of multiply modified constructs. I will briefly outline some of this background literature before turning to the data at hand.

Comparative, Superlative, and Related Forms

There is a considerable body of literature suggesting that children's very early uses of several of these forms, in particular A-er, too A, A-est, express simply "X" or "very X" (Carey, 1978b; Clark, 1970; Donaldson & Wales, 1970; Ehri, 1976; 17 Even beyond this, children will have to learn the direction of the implications attached to scalar predicates, as they do not always involve upward inferences, but sometimes downward orientation, as, for example, with barely (Horn, 1997).
Gathercole, 1979b, 1983; Townsend, 1976). Some examples of such “absolute” or “intensive” uses of my own data are as in (33).

(33) J 3:3 Put it too close. [requesting candy be moved closer]
R 3:6 I’m too high, Daddy [standing on table to reach light switch, can barely reach; proud of how high she is]
R 3:6 Don’t make this tighter. It’s tighter! [trying to open jar lid, finds she can’t open it]
MO 3:0 Too many ronis. [re: macaroni on his plate. MO then proceeds to eat all his macaroni and go get and eat another helping] (Gathercole, 1979b, p. 312).

Saul 3:3.26 You can carry me ’cause you’re too heavy… [i.e., “you’re very strong”] I’m little and you’re heavy.

Saul 4:3.15
Saul: Sadie’s sweet, and I’m sweeter than her, and you’re sweeter than me, and Daddy’s sweeter than you.
M: Wow! I just thought we were all sweet.
Saul: We are! Didn’t you hear what I was saying? We’re all sweeter!

At the same time, it is clear that these forms don’t quite mean “X,” “very X” for the child—at least their use is not limited to such meanings. In fact, their use appears to be based on either stored prototypical uses of these forms or stored haphazard examples (Gathercole, 1979b, 1983). This is because at the same time as children are using X-er, X-est, and too X for “(very) X,” they also use the forms appropriately (see (34)), and for other uses that appear to have their source in the correct uses—e.g., using the comparative to compare two things that are alike or different (see (35)).

(34) R 3:6
R: Are you done?
M: Mhm. I’m in the clean plate club.
R: Then I eat slower. I’m little. You’re bigger than me, right?
J: 3:9 [carrying large coloring book:]
This is too big for my pocket, right? My pocket’s for little things, right? My fireman’s little. It’s little for my pocket, right? My hand’s little for my pocket, right? [fireman = 1½ in. peg doll]

(35) R 3:6.14 [R comparing lengths of two sticks in picture—refers to the same two sticks with: ]
shorter [vs.] longest; longer [vs.] shorter
R: 3:6.29 [R asking to have crackers after supper; none in sight:]
Two big ones. Two bigger ones. Two big ones.
R: 3:7.1 I don’t get better gloves, but you do. [When asked further, R asserted that mine were better because they’re black]
I have argued (Gathercole, 1979b, 1983) that the range of usage for these forms arises through complex extensions of the forms from the prototypical or stored examples of usage. That is, the child picks up early uses of these forms in appropriate contexts, but then extends their use to contexts that share only a subset of the characteristics of those appropriate contexts (Bowerman, 1978; Carey, 1978a).

The ability to use comparatives beyond absolute or intensive uses develops during the preschool years, and perhaps well into the school age years (Ehri & Ammon, 1974; Gobbo & Agnoli, 1985; Kallio, 1988). Their interpretation by young children is complicated by the child’s developing understanding of the adjectives on which they are built. The fact that some adjectives themselves involve relative degrees of the presence of properties (big, tall, etc.), and that their application depends on the type of referent (cf. big ant vs. big elephant) (see, e.g., Kennedy 2005), as well as the fact that some adjectives refer to positive ends of scales (e.g., unmarked adjectives, like big, tall) while others to negative ends (e.g., marked adjectives like little, short) affect the relative ease with which the structures built on them are acquired (Ehri & Ammon, 1974; Gobbo & Agnoli, 1985; Nelson & Benedict, 1974; Ryalls, 2000; Syrett, Bradley, Kennedy, & Lidz, 2005).

Among the relevant research is work suggesting a strong link between the development of linguistic forms like the comparative and the development of cognitive skills such as seriation and conservation (e.g., Ehri, 1976; Shaffer & Ehri, 1980). Given the semantic notions encoded through the structures of interest here, we might predict that we will find similar links between linguistic and cognitive development with even a broader range of these structures.

**Acquisition of More and Less**

A great deal of research has also focused on the acquisition of just the two words *more* and *less* (see review in Gathercole, 1979a). It is clear that children’s understanding and usage of these words develop over a long stretch of time before all of the meanings and uses are incorporated into children’s linguistic system. The initial uses of *more*, in the one- and two-word periods, tend to be for “recurrence” [*more bottle, more tickle*, etc.] (Bloom, 1970, 1973). Children’s understanding of *more* as referring to the greater of two amounts begins to take hold around 3½ years of age, and may go through a period in which *more* means “additional amount” in the same referent (Gitterman & Johnston, 1983; Hudson, Guthrie, & Santilli, 1982). But children’s full appreciation that *more* can refer to the greater of two distinct amounts, and to a difference *either* in mass or in number does not develop fully until around 5 years of age (Gathercole, 1985b, 1986) or later (e.g., Arendasy, Sommer, Poncey, 2005) (see example of the conflict this can pose for children in (36)). Children’s understanding of *less* appears to come in only after they have gained a relatively full understanding of *more* (around age 4½ to 5 years) and can appreciate the relationship between *more* and *less* (Carey, 1978b; Gathercole, 1979a; Gordon, 1978).
(36) Saul 4:11.12

S: You have 10 fingers and I have 10.
M: So who has more?
S: You.
M: I have more?
S: Yes, because yours are bigger. I mean just look at them!

Children’s use of more as a marker for comparative forms of adjectives (more interesting, more difficult) also takes a long time to develop. Children’s abilities with this use of more appear to come in at around 4½ years of age, long after extensive use of the -er marking for comparatives (Gathercole, 1985b). It is also at about this age that children begin using extensive double marking on adjectives (“more bigger”), suggesting that they have brought the two modifiers together semantically and/or syntactically—they have come to “bump up against each other’s territories,” in Bowerman’s sense (1978, p. 391).

Mass and Count

The development of the linguistic mass–count distinction has also been the subject of extensive research (e.g., Gathercole, 1985a, 1986; Gordon, 1982; Soja, Carey, & Spelke, 1991). There is a wide range of constructs that participate in the mass–count distinction in English (e.g., a/some, categorization of nouns into one group or another, much/many, more for comparative of much vs. for comparative of many). Children’s development across these forms again appears to be protracted and to come in piece by piece. Thus, children learn early that a X refers to a (single) object, while some X refers to a substance (Gathercole, Cramer, Somerville, & Jansen op de Haar, 1995; Soja, 1992; Soja et al., 1991). Children learn early that some nouns can be quantified by numbers, while others cannot (Gordon, 1982, 1988; see Bloom, 1994; Carey, 1994 for discussion). But children take a very long time to sort out where much has to be used and where many is used (Gathercole, 1985a, 1986). We will see below that this may have to do in part with the distinct developmental trajectories for much and many.

Qs and Numbers

There is a considerable body of research on children’s understanding of quantifiers, especially in relation to universal quantification (all, every, each), but also some, many, most, and to the scope of operators, beginning with work by Donaldson and colleagues in the 1970s (e.g., Donaldson & McGarrigle, 1973) and continuing through to the present (see reviews in Brooks, Braine, Jia, & Dias, 2001; Drozd, 2001). Without going into details of this work, it is worth noting here that the quantifiers themselves and their semantic interpretations are fraught with complexities (e.g., Horn, 1997, 2000 for the interpretation of all, some, every, and any) and that the interpretation of quantifiers is highly influenced at young ages by contextual
factors, including nonlinguistic factors (Brooks, Braine, Jia, & Dias 2001; Drozd 1996), linguistic factors (Brooks et al., 2001; Philip, 1995; Takahashi, 1991), and pragmatic factors (Brinkman, Drozd, & Krämer 1996; Crain et al., 1996). Furthermore, their semantics is developing co-temporaneously with the development of number concepts, which may be related (see debate in Bloom & Wynn, 1997; Briars & Sigler, 1984; Carey, 2001, 2004; Cordes & Gelman, 2005; Fuson, 1988; Gelman & Butterworth, 2005; Hurewitz, Papafragou, Gleitman, & Gelman, 2006; Mix, Huttenlocher, & Levine, 2002; Pollmann, 2003; Rips, Asmuth, & Bloomfield, 2006; Sarnecka & Gelman, 2004).

Apart from this possible relationship, the conceptual underpinnings of numbers and their acquisition may be relevant to the structures examined here, and to their acquisition. Of note is the set of concepts that Gelman and colleagues (e.g., Gelman, 1978; Gelman & Gallistel, 1978, Gelman, Meck, & Merkin, 1986; Greeno, Riley, & Gelman, 1984) have proposed are essential to the understanding of number. They have outlined five distinct principles:

1. One-to-One Principle: Each item in an array receives one and only one “tick.” This involves partitioning, grouping the items into those that have been counted and those that have not, and tagging, assigning distinct tags to the items that have been ticked.
2. Stable-Ordering Principle: The tags assigned to items in an array are produced in a stable, repeatable order.
3. Cardinal Principle: The final tag assigned has special significance—it labels the quantity of the array.
4. Abstraction Principle: Any type of items can be counted.
5. Order-Irrelevance Principle: It does not matter which order items are counted in; one will still end up with the same cardinal number.

These principles are relevant in that they indicate—especially Principles 2 and 3—that central to the acquisition of number is the understanding that numbers lie along and represent distinct points on a scale. The timing of the acquisition of these principles is also relevant: Gelman argues that children observe the first three principles, at least with small numbers (up to three), by age 3 (Gelman, 1978, p. 235), and with sets up to size seven by age 5 (Gelman, 1978, p. 233; see also Gelman, 1993). Understanding of number is not complete, however, by age 5; it continues to develop beyond these ages (Gelman, 1978, p. 239; Skwarchuk & Anglin, 2002; Sophian & McGorry, 1994).

As scalar predicates involve “domains that are partially ordered according to some property that permits grading” (Matushansky, 2002, p. 244), the conceptual basis underpinning Gelman’s Principles 2 and 3 is also relevant to scalar predicates. To what extent do the development of numbers and (other) scalar predicates go hand in hand? The data below will suggest that children’s understanding of the scalability of predicates may be facilitated through their understanding of number. (See Carey (2001, 2004) for a somewhat different perspective.)
Scality and Conversational Implicature

A number of studies have also begun examining children's understanding of conversational implicatures associated with scalar predicates. Several studies have reported that preschoolers and school-age children are insensitive to such conversational implicatures. That is, children do not infer from the use of a scalar predicate lower on a scale (e.g., some) that a predicate higher on the scale (all) does not apply. For example, Noveck (2001) found that children aged 7 to 9 treated might as compatible with must, and children aged 8 to 10 treated some as compatible with all; Hurewitz, Papafragou, Gleitman, and Gelman (2006) and Papafragou and Musolino (2003) found that 3-, 4-, and 5-year-olds interpreted some as meaning "at least some, possibly all" (Hurewitz et al. 2006, p. 88); Papafragou (2003b) and Papafragou and Musolino (2003) found that Greek 5-year-olds failed to interpret the words for 'begin,' 'start,' and 'half' as implicating 'not finish' and 'not all'; Papafragou and Schwarz (2006) report similar findings for 4-, 7-, and 10-year-old children's interpretation of most.18 (See also Chierchia, Crain, Guastini, Gualmini, & Meroni, 2001; Gualmini, Crain, Meroni, Chierchia, & Guasti, 2001; Lidz & Musolino, 2002.)

However, there are some qualifications to this insensitivity. First, it depends on the predicate involved. Papafragou (2003a, 2003b), Papafragou and Musolino (2003), and Papafragou and Schwarz (2006) report that 5-year-olds were more successful in interpreting half, two, and three as implicating "not all" than in interpreting begin, start as "not finish" and than treating most as "not all." (These researchers have argued that there may be some difference in implicature interpretations for numbers (or their vagueness) in comparison with other types of scalar predicates at these ages.) In addition, contextual factors influence interpretations (Musolino, 2004; Papafragou, 2003a, 2003b, 2006; Papafragou & Musolino, 2003, Papafragou & Tantalou, 2004).

It may be of significance that many of these studies involve the quantifier some, in its use in contrast to all. One important aspect of some is that it is polysemous: The quantifier some, as in (37), is different from the determiner some, as in (38) (Lyons, 1977).

(37) A: Did all your family go to the party?
    B: Well, some went.

(38) A: Who came to the door?
    B: Some children selling chocolate bars.

In the first, some the quantifier lies on a scale with all at the extreme end. This quantifier some is often used in a partitive construction: some of my family went. As a scalar form, this quantifier some conversationally implicates "not all." In the second case, some acts as the plural equivalent of singular a — a child came selling chocolate bars. This some is not the quantifier but an indefinite determiner. This

18These authors note, importantly, that their youngest group, 4-year-olds, had not yet acquired the semantics of the two quantifiers studied, half and most.
some does not usually occur in a partitive constructions. Critically, determiner some does not carry any conversational implicature about set size.

Most of the studies examining children’s interpretation of implicatures with some have assumed that children are treating some as the quantifier some. However, they may have been interpreting it as determiner some, which is perfectly compatible with an “all” reading. This polysemy of some raises questions regarding the interpretation of results concerning children’s understanding of conversational implicature. Are we sure that children know the (relevant) meanings of the forms tested? What evidence is there regarding children’s acquisition of conversational implicature in the case of forms whose semantic content we know that children understand? The data below suggest that the acquisition of scalar predicates and their conversational implicature entails several distinct components of development—acquiring the semantics of the form, placement of the form on the appropriate scale with competing terms, and viewing the scale in the proper (upward) direction. I will argue that these all must be in place before the conversational implicatures can be understood.

Multiple Modification

Not much is known about how children develop the whole system of degree-marking elements, including multiple modification. In an initial examination of this issue, I analyzed data from 12 children who were observed in groups of four children of the same age on four occasions (Gathercole, 1979b, CHILDES data bank). From this cross-section of data, it appeared that children seem initially to use a given Deg either only with A or only with or as Q, not both. It is only with time that children learn to extend the use of each Deg to use with the other form (Gathercole, 1979b).

The data from this cross-section of children revealed the following pattern:

a. Initially (around 3 to 4½ years of age), the Degs were restricted as follows:
   very, so, how, as/___A
   more, this, that, enough, much, most/ with or as Q

b. At an intermediate age (around 4½ to 5½), children began associating forms initially restricted to use with As to use with Qs: very, so, how/___Q

c. At a still more advanced age (around 5½ to 6½), forms initially restricted to use with or as Qs migrated to use with As: more, this, that, enough, much/___A

However, it should be noted that the numbers of occurrences of these forms overall were small, so any conclusions drawn from that initial set of data had to be tentative. But we will see parallel developments in the data below.
What We Do Not Know

Beyond these, there is little known about a number of issues related to the acquisition of these forms:

- Beyond the study mentioned above, little is known about the acquisition of multiple modification.
- Little is known about the development within each structure. How do uses of each form—very, too, as, than, more, many, etc.—change with time and experience?
- Little is known about how development across the whole range of structures evolves. How do the developments of as...as, -cr...than, X enough, too X interact?
- Not much is known about individual differences in the acquisition of these forms across children.
- Further work is needed regarding the acquisition of language versus the acquisition of cognitive understanding.
- Very little is known still about children's understanding of scalar predicates, such as as...as, too X, X enough, especially in relation to the understanding that they involve the assertion of meeting a lower limit and viewing the scale from below upward.

The research reported here was conducted with the hope of helping to answer some of these open questions. In particular, the data can provide further insight into the developments of individual lexical structures; into the development of links between structures and of the whole linguistic system; into the influences of cognitive, semantic, and syntactic aspects on the course of acquisition; and into the range of individual differences and range of commonalities in the acquisition of these structures.

METHOD

The data reported here come primarily from two children—my daughter, Rachel, and her daughter, Sadie. These data are supplemented, where appropriate, with data from my son, Jaime, and Rachel’s son, Saul, and with occasional data from other children. The data from my own and Rachel’s children consist primarily of error and nonerror data collected by myself, for both Rachel and Sadie (and Jaime and Saul), and by Rachel, for Sadie (and Saul).

Please note: The term error is used here to refer to uses by children that deviate from the adult norm. I do not mean to imply that these forms are “errors” in any sense with regard to the child’s own developing system, nor that the “errors” constitute a regression or lapse on the child’s part. Indeed, as we will see, the “errors” are usually indicative of children’s linguistic advances (see, e.g., Bowerman 1982).
For the data from Rachel (and Jaime), any errors uttered, regardless of type of error (i.e., even outside the structures of interest here), were collected, by writing down the utterances and as much of the conversational exchange as possible immediately following the utterance. Because utterances containing errors in one realm include correct forms in another, the data include both correct and incorrect utterances involving the structures of interest here. For data from Sadie (and Saul), both errors and correct uses of the structures of interest here were targeted, similarly by writing down the utterances and as much of the conversational exchange as possible immediately following the utterances. In the case of Sadie (as well as Saul), Rachel spent virtually 24 hours a day, 7 days a week with her, so the data can be considered extremely representative.

The data reported here span primarily the ages from birth until 4:0 for Sadie and from 1:0 to 6:00 for Rachel. The data from Sadie and Rachel will first be laid out separately. This will be followed by a summary of the shared aspects of development in the two children and the differences between them.

The immediate goals in the examination of the data from these children were the following:

1. To trace each child’s development of the full range of structures of interest here.
2. To uncover commonalities and differences across the development of the structures and across the children.
3. To examine how and if children develop a full system. What are the roles of form, of semantic content, of cognitive underpinnings, of syntactic complexity?

In all of what follows, key criteria for judging the child’s knowledge of the structures in question involved (1) the order and timing of emergence of forms, (2) the contexts of utterances, (3) the nature of errors, and (4) gaps or missed opportunities in the child’s interpretation of others’ uses of forms or in their own use of forms available in their own repertoire.

The data are then examined in the Discussion with regard to the larger questions posed at the outset:

- To what extent do children approach these structures on the basis of broad syntactic categories and structures? That is, does knowledge of syntactic structure guide children’s acquisition of these forms, or do the syntactic structures emerge out of the children’s experience with the forms?
- Are the developments in the syntactic and semantic (and cognitive) realms autonomous, or do developments in one area influence developments in another?
- Do children follow a common trajectory in the development of these systems, or is the developmental path followed idiosyncratic and distinct across children?
- Does language lead cognitive development, cognitive development lead language, or a mixture of these two?
SADIE

The data from Sadie are taken from approximately 900 utterances and exchanges containing relevant forms between birth and 4:0. The examination of the data will focus on three major types of developments: developments with adjectives, developments with quantifiers, and developments with phrases and their elaboration in multiple modification.

Earliest Ages: By 1;7.6

By the age of 1;7, Sadie had 176 words, and she was beginning to produce two-word utterances. By this time, her vocabulary included the following adjectives and quantifiers (exhaustive list):

Adjectives
- stinky
- naked [in relation to self, when she had diaper off]
- heavy
- yucky
- wet
- tired
- ready

Quantifiers
- more [when requesting more of something]
- first
- two [Note: up until 1;8, used for anything more than one—“lots,” plural?]

Earliest Ages: 1;7–3;0

In the following period, Sadie’s development was as follows:

Adjectives  Sadie begins to use modifiers of adjectives during this period:

Ages 1;8–2;2: INTENSIFICATION  Her earliest modification of adjectives consists of the use of so, very, quite, all, really, and reduplication of very and really, all used to express INTENSIFICATION (see Table 11.1A). In addition to these forms, she uses -er once, in later (reminiscent of the later frequently used by Abe’s parents, above), and too A several times, in apparently appropriate contexts (see Table 11.1B). Later misuses of too X, however, suggest perhaps that these earliest uses (“too big,” “too tired”) are “rote learned” or prototypical uses learned in context, as suggested in Gathercole (1983).

Ages 2;4–3;0: Later Modification for INTENSIFICATION  By 2;4, Sadie continues to express INTENSIFICATION through these early means. She also begins adding other intensifying modifiers to her repertoire, such as way, freezing, heck-out, and,
notably, how. The use of these forms goes beyond acceptable use in adult speech, as in “heck-out dirty water,” “freezing tired” (see Table 11.1C).

At this same time, she also begins to generalize the use of reduplication for intensification beyond very and really to adjectives themselves, to verbs, and to adverbials, as in “this large, large thing,” “waiting and waiting and waiting and waiting and waiting,” “I’ve been waiting for a while and a while.” Further, she also begins using other lexical forms expressing intensification, such as love, full, and like crazy (see Table 11.1C).

The expansion of intensification beyond adult usage in these multiple ways suggests that Sadie has discovered that Intensification is a notion that can be expressed, and she draws on multiple sources in the input to be able to express this notion.

**Ages 2;3–2;6:** **Extreme Ends:** At this same time, Sadie begins to use multiple lexical forms to express extreme ends. These include favorite, first, last, best (see Table 11.1D).

**Ages 2;4–2;6:** **Like:** Similarly, during this time, Sadie begins to use lexical forms to express “likeness.” These include same, match, like, as well as this A (“this big”—“big like this”), as in Table 11.1D.

**Ages 2;4–3;0:** **Comparative Forms -er and than:** At this age, Sadie also begins using the modifier -er as well as the standard marker than, as shown in Tables 11.1E and 11.1F. Some of the uses of these forms appear appropriate semantically, but some are clearly inappropriate. For example, at 2;5.10, in reference to sockets in the wall, Sadie says that she herself is “...very little than these. [R: What’s very little than those?] Me! I’m very little than these”; she appears to mean “little like these.” She does not appear to respect the link between -er and than, as the latter appears often with simple adjective forms or forms with other modifiers—very little than,” “so fast than,” “perfect than.” At least sometimes, than in such forms appears to mean “like” (see also Gathercole, 1979b, 1983). The emergence of these comparative forms (-er and than), and their use for likeness/comparisons at the same time as the emergence of lexical forms to mean “like” (same, match, etc.) suggests that their use coincides with a discovery of the fact that likeness can be encoded semantically.

**Quantifiers**

**Ages 1;8–2;2:** By 2;2, Sadie uses a number of quantifiers, a lot, a little bit, in addition to the earlier first, two, more. See Table 11.2A.

**Q Modification:** X + more: The very earliest instances of any type of Q modification occur with more, beginning around 1;11: a lot more, a little bit more, no more, any more. Note that these are all appropriate in form (see Table 11.2B).

**Ages 2;2–2;6:** At a slightly later age (about 2;4), Sadie begins using all and a few, in addition to the earlier Qs (see Table 11.2C). Note that the earliest use of few does not respect mass/count co-occurrence restrictions: “That’s a few toilet paper.” (2;4.22)
TABLE 11.1 Adjectives Sadie 1;7–3;0

Table 11.1A Early Adjective Modification—INTENSIFICATION

so

S: So funny!
M: What's so funny?
S: That box. 1:11.29

ever

F: Don't touch that. [re: something hot in kitchen]
S: Hot.
F: Yes, it's hot.
S: Very hot.
F: Yes.
S: Very very hot. 1:8.14

Very very very hot. [re: pancakes] 1:8.15

Very very very heavy. [S trying to pick up phone book. Can't pick it up.] 1:9.10
Put it [re: cup] on your big hand. I'm gonna put Kaytie's cup on my very big little hand. 2:1.17

quite

It's quite hurting. [describing a hurt she has] 2:1.27

all

All clean! [during bath] 1:9.22

Reduplication of very, really

That hurts very very hurting. 2:1.9

M: Do you like wrestling?
S: Yes. But it hurts me very very very bad.
M: Then why do you like it?
S: Because right now! 2:1.12

I like to eat really really really really really spicy sausage! 2:1.28

Table 11.1B Early Adjective Modification, Beyond INTENSIFICATION

<er

S: Can I eat this?
M: No.
S: Can I eat it later? 2:0.1

too

Too big. [re: something that doesn’t fit] 1:9.13

Saul: Hey, Sadie, do you want a bite of ice cream?
Sadie: No thanks. I'm too tired to bite ice cream. 2:0.17
I'm too tired to play cups. 2:0.29

Table 11.1C Later Expressions of INTENSIFICATION

Continued use of above forms

I closed it. It's very hard to open. [re: a book that snaps shut with a snap] 2:5.6

Very scary. 2:5.10
Toasted bagels are so good! 2:5.15
That pencil you're sharpening is so small! 2:5.15
I was very fast. [re: her running] I got so fast than Saul! 2:6.4
I'm all filthy with milk. (i.e., dirty with spilled milk—"all filthy") 2:9.18
Table 11.1C (continued) Later Expressions of INTENSIFICATION

Additional modifiers for INTENSIFICATION

The cows are way far than me; [i.e., far away from me] 2:4:29
S: I’m gonna be a great big grown-up!
M: When?
S: When I turn six! 2:5.12

They kept going and going and going until they were freezing tired. [i.e., as in “freezing cold!”] 3:0.11
That is heck-out dirty water! 2:9.18
Look how tall I am! [Sad standing on an upside-down bowl] 2:5.15
I want you to watch me how fast I can go! I jump and jump how fast I can go! 2:6.5

Reduplication of very, really and beyond

Look! Big! [i.e., a French fry] Very very long! 2:4.26
Sad waited and waited and waited for bagels! And I was hungry. And Daddy bought bagels for us! Two bagels. [I had bought two bags of six bagels.] And more and more and more bagels.
They might be really really yummy. They smell yummy. 2:5.3
I’ve been waiting and waiting and waiting and waiting and waiting to read this book for a while!
I’ve been waiting for a while and a while! 2:4.10
Look at this large, large thing. [i.e., a one inch by one inch piece of onion in her soup] 2:4.24
Hey, Saul! Look! A little tiny baby pencil! [i.e., a colored pencil that has been worn down because of use] 2:1.25
I do this every every time. [i.e., roll the toilet paper a certain way] Why do you do that every every time? [i.e., roll the mouth every time she brushes her teeth] 2:4.26
[Sad has been waiting for P to get up and read her books. Sad sees P] Oh! I was asking and asking to read those books for a while! 2:5.4
S: Did you hear that noise?
M: Yeah, I did.
S: Do you want to hear it and hear it and hear it again? 2:5.6

They kept going and going and going until they were freezing tired. [i.e., as in “freezing cold!”] 3:0.11

Other INTENSIFICATION

I’m going to make you a beautiful castle. Do you love castles? 2:5.12
Look at my rocks full of the net. [carying fishing net full of pebbles] [Said several times.] [i.e., “my net full of rocks”] 2:6.9
M: Sadie, you’re taking the cake! [i.e., getting lots of pairs in Memory game]
S: Yeah! Actually, it’s cards.
[later:] I think I’m going to clean up the cake! [i.e., win all the pairs in Memory] 2:10.5

Achoo! Whew! I blessed like crazy! [i.e., “I sneezed ...”] 3:0.14*
[*Note: Sadie used bless often to mean “sneezes.” Note that this means that she has interpreted “bless you” as involving “you” as the post-verbal (e) subject.]

Table 11.1D Other Notions Expressed

EXTREME ENDS

This is my favorite song! 2:3.6
[Sad is taking pieces of toilet paper off roll]
M: No more toilet paper.
S: One more last, please? 2:4.30
M: Do you want me to help you write more sentences?
S: Yeah. I want to erase it first. 2:4.17
M: I’m going to make you a taco salad.
S: A taco salad! Mmm! That’s my best! I want a taco salad! 2:4.19
Table 11.1D  (continued) Other Notions Expressed

My favorite candy is tic tacs.  2.5.19
M:  Put away the balloons now, please.
S:  I want one last.
M:  Nope, no more.
S:  Okay.  2.5.28
I have one last of this.  I want you to have it.  2.6.4

LIKE:
S:  Can I do the napkins?
M:  Yes.  Pick three that are the same as each other.
S:  [Sad holding up two.]  Are these same?  2.4.2
These are same!  [re: a racket and its reflection in the glass door]  2.4.24
I’m a kitty and a dog same times.  [i.e., at the same time]  2.4.26
[M has given Sad more water in her cup than usual.]
S:  What full water!
M:  Are you saying that because there’s so much in the cup?
S:  Yeah.  I almost got two cups…at the same time!
M:  Two cups in one cup?  2.5.9
S:  I want to hear “So-so,” Mommy.
M:  You want to hear “So-so”?
S:  It’s a CD song like I once heard.
M:  I’m sorry, I don’t know what song it is.
S:  It’s a CD song.  2.4.25
S:  Will you read me this book?
M:  That book is scary.
S:  Oh.  Is it Daddy’s?
M:  No, it’s for kids, but it’s for big kids.
[appears to mean “not for a baby like me, a big little baby like me?”]  2.5.10
S:  They have “Green Eggs and Ham” like we have “Green Eggs and Ham”?  [re: the book]  We match!
M:  You and Andrea?
S:  You and Andrea.  [re: Andrea is the mother of some friends of Saul and Sadie’s]  2.5.14
I want a piece of cheese.  This big of cheese!  [showing M with her fingers]  2.5.16

Table 11.1E  Use of Comparative Form -er

I don’t like peanut butter on top of my jelly, but I like jelly better than peanut butter.  2.4.13
S:  Can I have some of yours?  [re: fruit leather; Sad and M each have a fruit leather of different flavors]
M:  Some of mine?
S:  It’s even better.  [i.e., even better than mine]  2.4.25
I’m gonna go it faster than I can go it faster!  Because I can go it faster!  [making rocking horse go faster—means “I’m gonna make it go really fast like I can make it go fast?”]  2.9.4

Table 11.1F  Standard Marker than

I don’t like peanut butter on top of my jelly, but I like jelly better than peanut butter.  2.4.13
The cows are way far than me.  [i.e., far away from me]  2.4.29
Table 11.1F (continued) Standard Marker than

| S:  | very little than these. |
| M:  | What's very little than these? |
| S:  | I'm very little than these. [re: sockets in the wall—appears to mean "I'm very little like these"] |
|     | 2:5.10 |

This is more lightly than the kitchen's more lightly. [i.e., brighter] 2:5.30

I was very fast. [re: her running] I got so fast than Saul! [means "faster than Saul?" "very fast like Saul?”] 2:6.4

I'm gonna go it faster than I can go it faster! Because I can go it faster! [making rocking horse go faster—means "I'm gonna make it go really fast like I can make it go fast?"] 2:6.4

M: The one in your hand is perfect. Use that one. [re: spatula in S's hand]
S: But that's perfect than this one. ["that"—a different spatula—it's "more perfect" than the first?] 2:9.23

Q Modification: $Q + Q$: In this period, starting around 2:3, Sadie extends modification of more to not only the appropriately formed "a lot more," "a little bit more," "no more," and "any more," but also to "yes more," "one more," and "some more." She also begins other (inappropriately formed) $Q + Q$ combinations, "a little bit some," "a lot of three" (see Tables 11.2D and 11.2E).

Q Modification: Deg + much: At precisely the same time (2:3), Sadie begins using the quantifier much, always occurring with some Deg modifier—very much, how much, so much (and at least once, a much); see Table 11.2E. Note that these are the first uses of very, so, how in relation to a quantifier; these were previously restricted to use with adjectives. Since these early uses of much always occur with Degs that largely carry the same semantic import of intensification as they had already expressed with adjectives, these structures may serve to "invite" the child to broaden the structural options within these constructs, bringing Degs previously linked only with As into Q expressions. (Note also that this step in development is consistent with step (b) discussed in the introduction in relation to the data from the cross-section of children in Gathercole (1979b).)

Q+Deg/A: Around 2:5 or 2:6, slightly (about two months) after the introduction of new quantifiers modifying more, of some $Q + Q$ forms, and of some Degs linked with much, Sadie starts using some Qs, previously occurring as isolated Qs, as modifiers in adjectival constructions, and as modifiers of Degs in other (verb) constructions: "a little-bit-loose diaper," "all that fast," "a lot salty pretzels," "somewhat better," "a lot similar," "a lot so love you" (see Table 11.2F). (Again note that this is parallel to the sequence observed in Gathercole (1979b).)

---

20Rachel, at a similar age, similarly made a connection between no and yes in adjective modification:

(v) R: That's no good.
M: That's no good?
R: That's yes good.
[R pointing to light in study—changed her mind.] 2:8.5
**TABLE 11.2** Quantifiers Sadie 1;7–3;0

<table>
<thead>
<tr>
<th>1;7 - 2;2</th>
</tr>
</thead>
</table>

**Table 11.2A** Early Uses of Qs

### more

**more** cheese [requesting more] 1;9.22

**more, more** water [wanting M to turn water back on so she can get more water on her toothbrush] 1;9.26

M: I will read these books to you.
Sadie: Read myself.
[S sits down with books to read through herself.]
[S telling story to herself.]
S: Winnie plays ball. Winnie wakes up. Annie wakes up. Winnie’s happy. Annie… Mommy…
Daddy fell. Uh-oh! Annie let her out. Mommy, Annie, Daddly, Winnie barks **more**.
Barks **a lot more**. Winnie plays ball. Hu-Dokey ate it. ["Hu-Dokey" = “Hunky Dorey”]
Winnie barks **more** 1;11.28

(I want) **more** of your cereals! 2;1.5

I want **more** eggs. I want **more** big eggs. [i.e., I want another big bite of eggs] 2;1.14

I want **more** bite. I want **more** bites of your eggs. Give me some bites. I’m gonna feed me bites.
[=I’m going to feed myself bites] 2;1.14

### a lot (of)

Saul: What is Sadie doing [re: with the toilet paper]?
Sadie: Wiping myself!
Sadie: **A lot!** [admiring the toilet paper she has put in the toilet] 2;0.6
Saul: What do you want, Sadie?
Sadie: I want a bananas. I want bananas.
Saul: **How many?**
Sadie: Just one two three four five!
[Saul gives Sadie bananas.]
Saul: What do you want now, Sadie?
Sadie: Maybe a lot of prunes! 2;1.16

Feed me a lot of bites. [M feeds Sad a tiny bite of cereal] No! Not that little. 2;1.23

### a little bit (of)

Can I drink this a little bit of milk? [i.e., this a little bit of milk] 2;2.4

### Table 11.2B Modification of Q more

[S telling story to herself.] Winnie plays ball. Winnie wakes up. Annie wakes up. Winnie’s happy. Annie… Mommy… Daddy fell. Uh-oh! Annie let her out. Mommy, Annie, Daddly, Winnie barks **more**. Barks **a lot more**. Winnie plays ball. Hu-Dokey ate it. ["Hu-Dokey" = “Hunky Dorey”] Winnie barks **more** 1;11.28

S: ‘No other one.
M: No.
S: **No more pieces?** 2;0.6
M: Can I have the rest of your cereal or are you going to eat it?
S: Mommy’s eating it. I’m drinking your milk. Mmm! That’s good milk. You try it.
[M drinks some.]
S: It’s all gone?
M: No.
S: There’s a little bit more? 2;1.5

I cannot wear these **any more**. 2;1.21
I’m gonna not bite you **any more**. 2;1.28
TABLE 11.2  (continued) Quantifiers Sadie 1;7–3;0

2;2–2;6

Table 11.2C  Later Uses of Qs

a lot of
I ate a lot of crackers! 2;3;22
There's a squirrel! In some leaves! A lot of leaves! 2;4;15
M:  Do you want to make another one? [re: S's on paper]
S:  Yeah, a lot of them! 2;4;17
[Sad carrying pile of books:]
S:  Would you read me these books?
F:  I'll read one or two of them.
S:  No, would you read a lot of them! Read all of them! 2;4;17

all of
[Sad carrying pile of books:]
S:  Would you read me these books?
F:  I'll read one or two of them.
S:  No, would you read a lot of them! Read all of them! 2;4;17

a few
M:  Uh-oh, there's no toilet paper left.
S:  [Sad pointing to almost empty roll:] That's a few toilet paper....There's other toilet paper in the other bathroom.
M:  Let's go get some of that.
S:  So it doesn't keep wasting. 2;4;22

Table 11.2D  Modification of more

I want yes more baguette. I want yes more cheese! I forgot I already had baguette! 2;3;7
Some are fixed and some are broken. [re: bubbles to pop in bubble wrap] Let me see some more bubbles. 2;4;11
[Sadie is taking pieces of toilet paper off roll]
M:  No more toilet paper.
S:  One more last, please? 2;4;20
M:  That's the last one (re: piece of silverware to put in the dishwasher)
S:  Is there no more?
M:  Yes, there's no more.
S:  [Sadie pointing to empty detergent container/receptacle in dishwasher:] There's no more. 2;4;17

I want water! [i.e., to drink] [Sadie holding up almost empty water jug:] Is there no more water? 2;4;17
[Sadie has just eaten sliced-up pieces of kiwi] Zach, is there any more kiwi? 2;4;17
I don't want any more deviled eggs. 2;5;6
S:  Daddy's not sleeping!
M:  No, he's not, is he?
S:  Did Daddy sleep?
M:  Yes.
S:  Did Saul sleep?
M:  Yes.
S:  Did I sleep?
M:  Yep.
S:  Did anybody sleep any more? [i.e., is nobody still asleep?]
M:  Everybody's awake!
[re: In morning, when Sad awake to discover F and Saul awake in the living room. She is confused as to whether anybody has slept, and whether everyone is now awake.] 2;5;8
Table 11.2D  (continued) Modification of more

<table>
<thead>
<tr>
<th>There is no more bag of cups!</th>
<th>2:5.14</th>
</tr>
</thead>
<tbody>
<tr>
<td>No more room. [re: paper with stickers] No more room. Yes more room. [deciding there's room after all]</td>
<td>2:6.9</td>
</tr>
</tbody>
</table>

Table 11.2E  Other Q Modification

<table>
<thead>
<tr>
<th>Q modifying Q</th>
</tr>
</thead>
</table>
| Sadie: May I share-chair-io, Saul? [i.e., may I share your chair—with hi-ho the dairy-oh song?]
| Saul: Sure. |
| Sadie: Can I draw? |
| Saul: Yes, at your drawing station. |
| Sadie: All right. I'm gonna be back soon to share-chair-io. |
| Saul: Okay. |
| Sadie: May I borrow a pencil, Saul? |
| Saul: Sure. |
| Sadie: Okay. I'm gonna borrow two pencils. But not three pencils. |
| Saul: It's okay, Sadie. You can borrow three pencils. |
| Sadie: Okay. Can I borrow a lot of three pencils? |
| Saul: You can borrow as many as you want. |
| Sadie: Okay! These are a lot! Can I borrow my crayons? |
| Saul: Of course, Sadie. They're your crayons! |
| Sadie: Okay. 2:3.12 |

I need a little bit some space. [Sad about to set rocks out on seat of chair.] 2:6.9

Modification of much

| I don't like rocks very much. 2:3.3 |
| [to Saul:] How much I love you! Look how much I love you! 2:4.27 |
| Oh, how much I love you, Saul! 2:4.27 |
| Woah! I have so much balls! [Sad carrying five or six balls] 2:5.7 |
| S: This is a much applesauce. |
| M: This is what? |
| S: Much applesauce. 2:5.7 |

I liked and loved Saul's castle very much. 2:5.12
| I don't like it very much. 2:6.4 |
| That's so much I want. [F has just put pile of rice on Sad's plate] [means 'the (large) amount I want?'] 2:6.9 |
| I petted Kumquat so much days. [re: dog named Kumquat, i.e., so many days] 2:6.9 |
| I like the purple dress not very much as that. [means she likes the purple dress more] 2:10.4 |

Table 11.2F  Q Modifying A/Deg

| I a lot so love you. 2:5.19 |
| A nice, new, clean, a-little-bit-loose diaper. 2:5.23 |
| I can go all that fast. [re: riding on a play horse] 2:6.4 |
| They're a lot salty pretzels. 2:6.9 |
| My toe is looking somewhat better. [re: a wound that is healing] 2:9.17 |
| F and Ds look a lot similar. 2:11.21 |
Summary, Early Uses, Sadie

We can summarize these early developments as follows:

- **Semantic encoding:** The semantics expressed through these early morphological forms for modification primarily revolve around the notions of INTENSIFICATION, EXTREME ENDS, and LIKENESS.

- **Form:**
  - Forms of As: The early modification of Adjectives is primarily carried out with intensifiers, including *so, very, real(ly), -er, and reduplication.*
  - Forms of Qs: *much* enters Sadie’s speech always linked with a Deg modifier; these constructs might be considered the germ of Deg + Q forms, but in which the only Q participating is *much.*
  - Elaborated Q forms:
    - Beginning expression of modification of Qs: Sadie begins (around 2.0) with some appropriately formed X + *more* constructs: *a little bit, a lot, no + more*
    - Elaboration of X + *more*:
      - These early uses are followed approximately three months later (around 2.3) by the extension of these forms in two ways:
        - First, Sadie introduces related forms into the pre-*more* slot: *some, any, yes + more.*
        - Second, she introduces other Qs into the slot occupied by *more:* *a little bit, a lot of / _some, 3.*
      - It is exactly at this same time that Sadie begins using expressions containing a Deg and *much:* *so, very, how + much.*
  - Further elaboration of forms:
    - Approximately two months later (around 2.5), she introduces some Quantifier modifiers into adjectival phrases: *a little bit, a lot, all, somewhat/_.(Deg) A.* In some cases, the Q occurs directly before an A (“a little bit loose,” “a lot salty,” “a lot similar”), in other cases, the Q occurs before a Deg + A (“all that fast,” “somewhat better”). (In one case, Sadie uses Q + Deg + Verb: “I a lot so love you.”)

I have expressed these developments in terms of “Deg,” “Q,” and “A,” but it is likely that Sadie did not initially have such broad categories. The evidence supporting this is twofold: first, her initial usage of a number of forms was clearly restricted, and, second, subsequent stages can be seen as clearly emergent from earlier stages.

First, her initial uses of any modification of these forms were limited to the use of intensifiers (*so, very, quite, really, all*) with adjectives, on the one hand, and the forms *any, no, a lot, and a little bit with more,* on the other. The first step beyond these initially restricted forms is that the presence of (legitimate/heard) X + *more* in her speech appears to have opened up a “slot” to be filled preceding *more*; this slot was then filled with other forms related to those already filling that slot (e.g.,
no more → yes more; a lot more, a little bit more → some more, one more). This
in turn seems to have opened up the possibility of inserting elements similar in
meaning to more (some, 3) into the same position as more, leading to expansion to
“a little bit some,” and so forth (see Drozd, 2002 for an alternative view).

Similarly, the introduction of Deg-like elements into quantifier modification
was initially restricted to cases of much modification. The fact that the form much
entered Sadie’s speech at exactly the same time as the introduction of yes more, a
little bit some, and the like, and that it was always accompanied by an intensifier
(of the Deg variety) also suggest that these may all have taken a form modifier +
Q. (And note that the modifiers expressed a variety of notions, suggesting that this
abstract modifier + Q form had a syntactic, not a semantic, base.) The subsequent
(and fairly rapid) expansion to the use of a little bit, a lot as modifiers of adjectives
suggests the beginning of the emergence of a modifier + modified structure at
that point (although subsequent developments, to be outlined below for 3:0 to 4:0,
indicate that she has not yet arrived at a fully general structure). The concurrent
flowering of means of expressing other types of modification—additional lexical
intensifiers for adjectives, such as very A, freezing A, heck-out A, as well as a
proliferation of reduplication on As, Qs, and Vs—at exactly this same time supports
this suggestion.

Thus, the early germs of the emergence of these structures appear to have
come from two source routes: Intensifier + Adjective, on the one hand, and Modifi-
er + more on the other. These separate routes become linked through (a) the
expansion of X + more in two ways—through elaboration of what “X” can be and
through extension to quantifiers like more—and (b) the introduction of Deg +
much structures, involving Deg forms already being used in A modification. These
together seem to lead to the expansion to a broader structure involving a lot, a
little bit, very, how, so + X, where X is indiscriminately a quantifier, an adjective,
or another modifier.

What Is Missing in This Early Period? The forms that are missing from
Sadie’s speech during this early period are as instructive as those that are present.
Up to age 3:0, the following elements seem lacking:

1. Despite some limited very early uses, there is overall little use of too X,
   -er, this X, and that X, and no uses of as...as or enough in these A and Q
   constructions. Note that all of these involve, in adult usage, the expression
   of the presence of a property or quantity along a scale.

2. There are occasional instances in which Sadie either misses opportunities
to use one of these forms or misinterprets others’ use of them or other
scalar expressions (see, for example, Table 11.3A). In one case, she misses
the opportunity to use too A and uses A alone [“It was dirty to eat”]; in
other cases she misinterprets her mother’s use of as A as, too much, and
until, which expresses a point on a scale of an imaginary time line. For
example, on one occasion, when her mother is pretending to be Ernie,
Ernie says, "It's twice as big as I am!" and Sadie responds "No, you're little."

3. During this period, she is developing a rudimentary understanding of the numbers one and two (Table 11.3B), but her understanding beyond this is limited, and she shows confusion of the link between numbers versus names in relation to questions regarding age and name (see Table 11.3C).

4. There is no evidence of respect for a mass/count distinction in the use of much and few; for example, there are many co-occurrence restriction errors, such as "I have so much balls," "I petted Cunquat so much days," "That's a few toilet paper."

5. Despite ending this period with structures allowing for a quantifier modifying an A ("a lot salty pretzels"), there are no instances of more used in A modification during this period.

**Intermediate Ages: By 3;0–4;0**

**Intensification** During the next period, Sadie shows continued use of forms for intensification, and she adds quite as a modifier (see Tables 11.4A and 11.4B). But she also increases her use of so for intensification with verbs (seen already once at 2;5,19: "I a lot so love you") as well ("I so need...") (see Table 11.4C). She also adds to her repertoire new lexical items expressing intensification, such as galore, used to modify a verb ("Mommy, he's been drawing galore!") and gallon (to mean "lots"; see Table 11.4D). Beyond this expansion of the expression of intensification, we see several new developments in Sadie's use of the relevant forms.

**Adjectives** First, with Adjectives, she continues using forms that have already entered her speech (–er), but now with more appropriate meanings, and begins using new modifiers that encode meanings beyond intensification. These forms include how, too, -est, as...as, and enough (see Table 11.5). However, in many cases, the forms are still used inappropriately; for example, Sadie associates how old with the spelling of her name: "How old I am is S-A-D-I-E. My name is S-A-D-I-E," and her use of too old occurs sometimes where very old appears intended.

On other occasions, the forms appear to be used with appropriate semantic content; for example, Sadie's use of the superlative. Note that the superlative is used with double marking on a number of occasions (see below), and the superlative is used with the standard markers out of the world and of the world.

Of particular note are the forms that for the adult encode specification of a property along some scale— particularly too, enough, and as...as. While on a few occasions their use appears inappropriate and perhaps even involving the wrong

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21 It is interesting that it is the Deg so that is brought into these verbal constructions. There may be some influence of the fact that there is a homophonous/polysemous form so that is used with verbs in, for example, and so does she, etc.
TABLE 11.3  Missing Sadie 1;7–3;0

Table 11.3A  Missed Opportunities for Use of Modifiers or Misinterpretations of Another’s Utterance

[M and S playing; M pretending to be “Ernie” (= “Little Buddy”).]

<table>
<thead>
<tr>
<th>S:</th>
<th>I not eat my sandwich, Little Buddy.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ernie:</td>
<td>Why not?</td>
</tr>
<tr>
<td>S:</td>
<td>It was dirty to eat, Little Buddy. (missing “too...” i.e., “it was too dirty...”) 2:1.27</td>
</tr>
<tr>
<td>[M “talking for” Ernie, a doll that is about 5 inches tall:]</td>
<td></td>
</tr>
<tr>
<td>Ernie:</td>
<td>I can’t write anything with that pen. It’s twice as big as I am!</td>
</tr>
<tr>
<td>S:</td>
<td>No, you’re little.</td>
</tr>
<tr>
<td>E:</td>
<td>I know.</td>
</tr>
<tr>
<td>S:</td>
<td>I’m little too.</td>
</tr>
<tr>
<td>[S has misinterpreted Ernie’s utterance as saying that Ernie is big.] 2:4.17</td>
<td></td>
</tr>
<tr>
<td>M:</td>
<td>There’s too much stuff on the counter, isn’t there?</td>
</tr>
<tr>
<td>S:</td>
<td>Yeah! There’s many stuff, like ___ and ___ and ___ and ___... 3:1.30</td>
</tr>
<tr>
<td>S:</td>
<td>You might have to help me. [re: putting blocks into a tub]</td>
</tr>
<tr>
<td>M:</td>
<td>Actually, we’ll have to wait until Daddy says the tub is (clean and) ready for us to use.</td>
</tr>
<tr>
<td>S:</td>
<td>Okay. Until the tub’s clean, you might have to help me. [means “…when...”; not scalar] 2:9.18</td>
</tr>
</tbody>
</table>

Table 11.3B  Number Concepts

<table>
<thead>
<tr>
<th>M:</th>
<th>How many kisses do you have for me?</th>
</tr>
</thead>
<tbody>
<tr>
<td>S:</td>
<td>Two kisses!</td>
</tr>
<tr>
<td>[S sometimes says “Three kisses”] 1:9.22</td>
<td></td>
</tr>
<tr>
<td>Sadie:</td>
<td>May I share-chair-io, Saul? [i.e., may I share your chair—with hi-ho the dairy-oh song]</td>
</tr>
<tr>
<td>Saul:</td>
<td>Sure.</td>
</tr>
<tr>
<td>Sadie:</td>
<td>Can I draw?</td>
</tr>
<tr>
<td>Saul:</td>
<td>Yes, at your drawing station.</td>
</tr>
<tr>
<td>Sadie:</td>
<td>All right. I’m gonna be back soon to share-chair-io.</td>
</tr>
<tr>
<td>Saul:</td>
<td>Okay.</td>
</tr>
<tr>
<td>Sadie:</td>
<td>May I borrow a pencil, Saul?</td>
</tr>
<tr>
<td>Saul:</td>
<td>Sure.</td>
</tr>
<tr>
<td>Sadie:</td>
<td>Okay. I’m gonna borrow two pencils. But not three pencils.</td>
</tr>
<tr>
<td>Saul:</td>
<td>It’s okay, Sadie. You can borrow three pencils.</td>
</tr>
<tr>
<td>Sadie:</td>
<td>Okay. Can I borrow a lot of three pencils?</td>
</tr>
<tr>
<td>Saul:</td>
<td>You can borrow as many as you want.</td>
</tr>
<tr>
<td>Sadie:</td>
<td>Okay! These are a lot! Can I borrow my crayons?</td>
</tr>
<tr>
<td>Saul:</td>
<td>Of course, Sadie. They’re your crayons!</td>
</tr>
<tr>
<td>Sadie:</td>
<td>Okay. 2:3.12</td>
</tr>
<tr>
<td>Sadie:</td>
<td>I’m back to share-chair-io. Can I draw on your paper?</td>
</tr>
<tr>
<td>Saul:</td>
<td>No, but you can draw at your drawing station.</td>
</tr>
<tr>
<td>Sadie:</td>
<td>Okay. Can I borrow one of your pencils?</td>
</tr>
<tr>
<td>Saul:</td>
<td>Yes.</td>
</tr>
<tr>
<td>Sadie:</td>
<td>Okay. I’m gonna borrow two. And a marker. 2:3.12</td>
</tr>
</tbody>
</table>
Table 11.3B  (continued) Number Concepts

I’m gonna borrow one of these.  2.3.12
Saul:  Take one of these cushions.
Sadie: One of these cushions?
Saul: Yeah. Any cushion.  2.4.13

[Sadie is taking pieces of toilet paper off roll]
M:  No more toilet paper.
S:  One more last, please?  2.4.20

There’s one chair. There’s not two chairs! [i.e., like there usually are]  2.4.20
Saul waited and waited for bagels! And I was hungry. And Daddy bought bagels for us!
Two bagels. [I had bought two bags of six bagels.] And more and more and more bagels. They
might be really really yummy. They smell yummy.  2.5.3
I have a crayon! And I have two bagels! Peanut butter on my bagel and no peanut butter on my
bagel. Just nothing—only bread! [One half-bagel is plain and one half-bagel has peanut butter
on it.]  2.5.4

[M has given Sadie more water in her cup than usual.]
S:  What full water!
M:  Are you saying that because there’s so much in the cup?
S:  Yeah. I almost got two cups...at the same time!
M:  Two cups in one cup?  2.5.9
M:  Put away the balloons now, please.
S:  I want one last.
M:  Nope, no more.
S:  Okay. 2.5.28

I have one last of this. I want you to have it.  2.6.4
I’m carrying both of us! [Sad coming into room carrying Ernie doll and Barney doll—both of them]
2.1.17 [cf: 1.11.28: Look at us! [re: pair of shoes in picture]]
That is both mine and Saul’s.  2.2.15

Table 11.3C  Immature Number Concepts

[M and Sadie playing. M pretending to be “Elmo”:]  
S:  I’m two.
E:  Wow! Elmo is excited to hear that!
S:  Guess what.
E:  What?
S:  ’Sat thing? ["what’s that thing?”] Guess what, Elmo.
E:  What?
S:  Saul’s name.
E:  I don’t know. What is Saul’s name?
S:  Six, seven, eight. [Sad is 6.]
E:  Oh.
S:  I’m two.  2.0.0
F:  Did we see that one time or two times? [re: Bojangles restaurant]
S:  Eleven times! [comment: it was actually twice.]  2.4.24

There’s one two three four five soap! [Sad counting pieces of soap in bathtub; but there are only
three in reality]  2.5.3
I’m gonna be a grown-up when I get six. [Her brother is 6.]  2.5.4
TABLE 11.4  Sadie 3;0–4;0  Continued Use of Forms for INTENSIFICATION

Table 11.4A  Adjectives (E Adverbs)

This is [my/like/a] ice skating (rink). It moves me very well. [*Sadie sliding feet along bathtub top.] 3:9.24
I have something very cool. [re: new swimming pool she’s getting for her birthday; squirts water up through middle] 3:11.30
Actually, even though I’m 3 1/2, I’m quite little. 3:9.27

Table 11.4B  Quantifiers

so

[V sent Sad package full of hair clips at Halloween time. Sad mentioning how much fun it was to open up the package:] It was so much fun. It was 20 fun! [Sadie then counts to 20, showing how long it takes to get to 20.] It takes a long time to get to 20. 3:4.8

Reduplication of Q

V: [on phone] Did you put up a Christmas tree?
S: No. We put a tree in the house.
V: Did you decorate it yet?
S: It has lots and lots of lights. 3:5.26

Table 11.4C  Beyond As and Qs

so /__ V

Oh! I so need to poop! 3:1.21
S: I so wish we could get that thing out of my butt!
M: The poop?
S: Yeah! 3:1.21

I so missed you, Sad! 3:1.22

Table 11.4D  Additional Lexical Items for INTENSIFICATION

[Saul has drawings lying all over the table.] Mommy, he’s been drawing galore! 3:8.4
[Sadie on toilet:] I think I’m gonna use up a gallon of that toilet paper! 4:2.2

* This is a nice utterance to add to Melissa’s causative verb error repertoire: i.e., it CAUSES me to
MOVE very well.

direction on a scale (“I’m tired enough…means I’m not too tired”), on others, they seem quite appropriate; for example, “If I was brave enough for me to get buy-en…” [i.e., “If I was brave enough to let myself get bought….”]; “Is everybody as tired as I am?”

Quantifiers

Q: First, two new quantifiers enter Sadie’s speech early in her fourth year—many and enough—and a little is now in evidence alongside a little bit (see Table 11.6A). Her use of many clearly does not respect mass/count co-occurrence restrictions (“many stuff”). Her use of enough appears appropriate. Interestingly, all uses of enough, either as a Q or with an A, occur with a complement, “for…” or “to ….”

Deg + Q: We saw that up until 3;0, the only Deg + Q combinations were ones involving much modified by intensifiers how, very, and so. Table 11.6B shows Sadie’s further development of Deg + Q expressions. First, Table 11.6B1 shows her further use of Deg + much: her use of how much goes beyond intensification; she also adds too and as as Deg modifiers of much during this period—both of these
<table>
<thead>
<tr>
<th>Adjectives Sadie 3:0–4:0</th>
</tr>
</thead>
</table>

### Table 11.5A  Initial Uses of Forms Beyond INTENSIFICATION

**how**

**How old I am** is S-A-D-I-E: My name is S-A-D-I-E. 3:2.14

**-er**

Doesn't it look **even nicer** this way? [Sad taking egg out of second pot of dye] 3:9.26

**M:** Sadie, you get to pick which one [bowl of rice] you want.

**Sadie:** I'm gonna have the **a lotter** one.

**M:** The a lotter one?

**Sadie:** The **lotter** one. The **fuller** one. 3:11.25

**too**

When I get **too big** for it, and it gets **too small** for me, I could ride any of those. But I could get a new one. [re: rocking horse: "when I get too big for it....I couldn't ride any of those..."] 3:7.30

[Sad had taken a break from shucking 4 ears of corn; is now ready to help out again]

**S:** I'm tired enough to do some corn.

**V:** You're tired enough?

**S:** Yeah. That means I'm **not too tired**.

[use of "not too tired" appears appropriate; use of "tired enough" appears to specify wrong direction on scale?] 3:9.24

**Saul to M:** I can't believe you're 30!

**Sadie:** Yeah, and she's **not too old**!

**M:** Too old for what?

**Sadie:** You know, to walk and stuff!

[Sadie appears to mean something like "not very old."] 3:9.25

**F:** Are you in your pajamas?

**Saul and Sadie:** Yeah!

**F:** Are you two ready to spin?

**Sadie:** I'm **not too ready**! 3:10.14

**-est**

[Sad had been talking about which superheroes she liked most.]

**M:** Superman is the best one?

**S:** Mmm hmm. [="yes"] But Superman is my **bestest**. 3:7.27

[Sad has just put on a sparkly head band]

**V:** The sparkly girl!

**S:** Most **sparkliest** out of the world! 3:9.24

**V:** That's a pretty necklace, Sadie.

**S:** I'm **fanciest** of the world. 3:9.24

**enough**

[Sad had taken a break from shucking 4 ears of corn]

**S:** I'm **tired enough** to do some corn.

**V:** You're tired enough?

**S:** Yeah. That means I'm not too tired. 3:9.24

[Sad put price tag on belly. V told her she cost 50 cents. She said she couldn't be bought because she came out of Mommy's tummy.] If I was **brave enough** for me to get buy-en..... [=...for me to get bought....i.e., "If I was brave enough to let myself be sold"] 3:9.25

**as...as**

Is everybody **as tired as** I am? I'm 150 tired...I'm 190 tired. 3:9.22
modifiers that in the adult language express specification on a scale. (Note that her use of \textit{as} occurs with complement \textit{as}—both here and in the case of the use of \textit{as} with an adjective.)

We also see for the first time, from 3:8 on, uses of \textit{much} without a Deg—in all cases, “(not) much of (a) N.” Sadie also begins during this time to use other Quantifiers with Deg modifiers—“quite a little,” “quite a bit,” “-er + a lot” (see Table 11.6B2). And in one case (Table 11.6B3), we see her struggling to put together the appropriate Deg + Q expression—“too little,” but she finally gives up and substitutes “not enough.”

**Q + (Deg) A:** We saw in the previous period for Sadie the beginning of constructions involving \(Q + (\text{Deg}) + A\) (e.g., “a little bit loose”). The Qs that previously occurred in such constructs were appropriate for English: a \textit{little bit}, \textit{all}, \textit{a lot}, \textit{somewhat}. During this next period, we see further use of \(Q + A\) and \(Q + \text{Deg} + A\), first with filling in more Qs from this same set—\textit{any, some} (Table 11.6C1, 11.6C2):

- \(Q + A\): “a bit spicy,” “any spicy,” “little bit tie-dyed,” “some good,”
- \(Q + \text{Deg} + A\): “any too tight,”

but also Qs from a distinct set, that of numbers (Table 11.6C3):

- \(Q + A\): “20 fun,” “150 tired,” “199 tired,” “20 hundred and 750 lucky.”

**Other Q/Deg combinations:** We also see during this time a proliferation of other Q and Deg combinations (see Table 11.6D):

- \(\text{Deg} + \text{Deg} + Q\): “\textit{quitetest bit}”
- \(\text{Deg} + \text{Deg} + A\): “\textit{very too small}”
- \(Q + Q\): “Not even 2, Not even 3. Not even 4. Not even 5....bit.”
- \(Q + Q + \text{Deg} + A\): “\textit{once less braver}”
- \(Q + Q + \text{Deg} + \text{Deg} + A\): “\textit{much less brave}r”

These combinations suggest that Sadie has discovered that there are multiple ways in which Degt and Qs can be combined, and she extends the combinations indiscriminately, as far as form is concerned. (They do, however, seem to be constrained semantically—whenever a \textit{Deg}, is modified, it appears to express \textit{too}, \textit{-er}, or \textit{-est}.) There is no evidence of her establishing any internal phrase structure to these combinations; rather, they appear to be placed together by concatenation. Sadie’s response to her father with isolated “\textit{How}?” in the following supports this suggestion (see note 12):

(39) F: Do you know how many times he asked a $64,000 question?

It is worth commenting as well that it is during this time that Sadie uses Double Marking on superlative forms and comparative forms—\textit{most sparkliest, less braver, lesser braver}. These may be produced, at least in part, as a result of these developments allowing liberal concatenation of Q and Deg forms.

**Development of Scalarity** During this year of development, we can see that scalar expressions have been seeping into Sadie’s speech, but they are not always
TABLE 11.6  *Quantifiers Sadie 3:0–4:0*

Table 11.6A  Additional Qs

<table>
<thead>
<tr>
<th><strong>many</strong></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>M:</td>
<td>There's too much stuff on the counter, isn't there?</td>
</tr>
<tr>
<td>S:</td>
<td>Yeah! There's many stuff, like ___ and ___ and ___ and ___... 3:1.30</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>enough</strong></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>[Sadie explaining to V on phone that there was not enough snow to make a snowman or snowballs--there was too little snow:] 'Cause there was too-- there was only a little bit. There was too-- There was not enough snow to make snow balls. 3:5.18</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>a little</strong> (of)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>S:</td>
<td>I'm going to pour myself a little of water.</td>
</tr>
<tr>
<td>M:</td>
<td>You're going to pour yourself a little of water?</td>
</tr>
<tr>
<td>S:</td>
<td>I'm going to pour myself a little bit of water. I'm going to pour myself a little water. 3:6.10</td>
</tr>
</tbody>
</table>

Table 11.6B1  Deg + Q

<table>
<thead>
<tr>
<th><strong>Deg + much</strong></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>how</strong></td>
<td></td>
</tr>
<tr>
<td>How much are you tired? [to F, then to M] 3:9.21</td>
<td></td>
</tr>
<tr>
<td>F:</td>
<td>Do you know how many times he asked a 64,000 dollar question?</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>too</strong></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>M:</td>
<td>There's too much stuff on the counter, isn't there?</td>
</tr>
<tr>
<td>S:</td>
<td>Yeah! There's many stuff, like ___ and ___ and ___ and ___... 3:1.30 [Sadie misinterprets M's &quot;too much stuff&quot; as &quot;a lot of stuff&quot;.]</td>
</tr>
<tr>
<td>Look...it's too much. [re: water] He's barely sinking in it... [i.e., he's practically drowning or sinking in the water; barely means &quot;almost&quot;] 3:10.24</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>as...as</strong></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>I'm gonna get as much stuff as I can. 3:2.3</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>0 + much</strong></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>S:</td>
<td>We have quite a little soap.</td>
</tr>
<tr>
<td>M:</td>
<td>We have quite a little soap?</td>
</tr>
<tr>
<td>S:</td>
<td>Yeah. Like we have not much of soap. 3:8.2</td>
</tr>
<tr>
<td>That wasn't much of a sneeze. That was much of a cough! 3:10.12</td>
<td></td>
</tr>
</tbody>
</table>

Table 11.6B2  Deg + Q, other Qs

<table>
<thead>
<tr>
<th><strong>quite + a little, quite + a bit</strong></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>S:</td>
<td>We have quite a little soap.</td>
</tr>
<tr>
<td>M:</td>
<td>We have quite a little soap?</td>
</tr>
<tr>
<td>S:</td>
<td>Yeah. Like we have not much of soap. 3:8.2</td>
</tr>
<tr>
<td>[S telling V on phone that Saul has built a maze. V has asked S if it's hard to find the way through:] It's quite a bit of dead ends. And you know what quite a bit means! 4:0.3</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>-er + a lot</strong></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>M:</td>
<td>Sadie, you get to pick which one [bowl of rice] you want.</td>
</tr>
<tr>
<td>S:</td>
<td>I'm gonna have the a lotter one.</td>
</tr>
<tr>
<td>M:</td>
<td>The a lotter one?</td>
</tr>
<tr>
<td>S:</td>
<td>The lotter one. The fuller one. 3:11.25</td>
</tr>
</tbody>
</table>
TABLE 11.6 (continued) Quantifiers Sadie 3.0–4.0

Table 11.6B3 Missing:  too/ little

[Sadie explaining to V on phone that there was not enough snow to make a snowman or snowballs—there was too little snow:] ‘Cause there was too—the only a little bit. There was too—There was not enough snow to make snow balls. [wanted to say “too little snow”] 3.5.18

Table 11.6C Q + (Deg) + A

Table 11.6C1 Q + A

Is it a bit spicy? Is it any spicy? [re: food V has made, Thai food—S wants to know if it’s spicy before she tries it] 3.9.22
I like my little bit tie-dyed paper towel. [Sadie holding up paper towel which had been used to tie-dye eggs] 3.9.26
That’s some good [re: color of egg—dyes eggs for Easter] 3.9.26
It doesn’t look any green. [Sadie making sure some food isn’t moldy] 3.9.27
It doesn’t feel any cold or any hot; it just feels normal. Just right. [re: temperature outside] 3.9.28

Table 11.6C2 Q + Deg + A

They’re any too tight to put on myself. [re: clothes] 3.9.26

Table 11.6C3 Number + A

[V sent Sadie package full of hair clips at Halloween time. Sadie mentioning how much fun it was to open up the package:] It was so much fun. It was 20 fun! 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20. It takes a long time to get to 20. 3.4.8
Is everybody as tired as I am? I’m 150 tired... I’m 199 tired. 3.9.22
You’re very lucky. You’re 20 hundred and 750 lucky. 3.9.24

Table 11.6D Other Deg/Q Combinations

Deg + Deg + Q
F: Is this your egg in the blue?
S: Yes.
F: Are you sure?
S: I’m sure the quietest bit. 3.9.26

Deg + Deg + A
[Sadie holding little pretzel up on nose] How do you like my glasses? Very too small for me! 3.9.25

Q + Q
[V and Sadie discussing how Sadie was “lost” at a park one time:]
V: But Sadie wasn’t worried. Not one teeny bit.
S: Not even 2. Not even 3. Not even 4. Not even 5...bit. 3.9.24

Q + Q + Deg + A
I’m like once less braver than Saul. I’m much lesser braver than Saul. I’m much less braver than Saul. 3.11.27

Q + Q + Deg + Deg + A
I’m like once less braver than Saul. I’m much lesser braver than Saul. I’m much less braver than Saul. 3.11.27
TABLE 11.7 Immature Scalar Understanding

By then. my hair was always hanging in my eyes. [i.e., before V sent S package full of barrettes] 3.9.23

[V and S talking on phone and mentioning that V is going to be visiting S's house soon—will be there for S's M's 30th b-day and for Easter]

V: I haven't been there for a long time.
S: Yeah. Until Easter! [pauses as if trying to rephrase] And you weren't here when Easter came.

V: What?
S: I'm sure you weren't here when Easter came.
V: No, I wasn't.
S: And me and Saul hid eggs. 3.7.0

Remember that time... I think you were not in our house by then. 3.9.23

S: I can barely jump off of roller coasters. I can't really.
V: Does barely mean you can or you can't?
S: Barely means “half way”. 3.9.21

[Saul going across swing set that has various swings on it without touching ground. Sadie is on a horse swing at the end where he is headed. Saul wants her to get off.]

Saul: Sadie, can you get off?
Sadie: OK. You're barely there. [Saul is on 3rd last item—2 away from Sadie] 3.9.21

You're barely done. Grandma Ginny! [i.e., almost done, getting dressed] 3.9.23

Look... it's too much [i.e., water]. He's barely sinking in it... (i.e., he's practically/almost drowning or sinking in the water) 3.10.24

used appropriately with scalar import. When they are not used for scalar meanings, they are sometimes used to express INTENSIFICATION, as in her utterance “she's not too old” to mean “not very old,” sometimes to express the wrong direction on the scale, as in “I'm tired enough to do some corn” to express that she could now continue helping with shucking corn (Table 11.5A).

There is supporting evidence outside of these structures that Sadie's understanding of scalarity is still immature. Some examples are shown in Table 11.7, involving the use of by then, barely, until, and catch up with. All of these in the adult usage encode positioning on a scale, viewed from a lower level upward, and Sadie's usage lacks this scalar meaning. She uses by then to mean "at that time," barely to mean (perhaps) “half way,” until to mean “at” [point in time], “when.”

For example:

(40) By then. my hair was always hanging in my eyes.
[i.e., before V sent S package full of barrettes] 3.9.23

We will see similar examples from Rachel later. But examples from other children using until to mean “when” or “at” are:

(vi) You have to see it till it’s done. [i putting together train tracks.] J 3.10.6

(vii) Aunt Virginia got up till ten o'clock. No, Aunt Virginia got up till eleven o'clock. (Laura 5.3)
(41) [V and S talking on phone and mentioning that V is going to be visiting
S’s house soon—will be there for S’s M’s 30th birthday and for Easter, a
holiday for which V has not previously been present.]
V: I haven’t been there for a long time.
S: Yeah. Until Easter! [pauses as if trying to rephrase:] And you weren’t
here when Easter came.
V: What?
S: I’m sure you weren’t here when Easter came.
V: No, I wasn’t.
S: And me and Saul hid eggs.
3.7.0 [S appears to mean “At Easter”—i.e., you haven’t been here at Eas-
ter time.]

One interesting development, noted above, is the introduction of numbers into
the constructs of interest. We have seen in Table 11.6C3 that numbers are intro-
duced as modifiers of adjectives, in positions where other quantifiers would occur.23
However, there is further evidence beyond these that there may be an association
of scalar expressions with number. Forms such as very A, how much..., and as X as
are often tied with numbers, often outlandishly high numbers; for example, “You’re
very lucky. You’re 20 hundred and 750 lucky” (3.9.24). See further examples in
Table 11.8. It is as if Sadie’s growing understanding of number and relative size
related to number is tied integrally with her growing understanding of these scalar

23The introduction of numbers into such adjectival modification (and quantifier phrases), or to
more generally express scalar concepts, is not uncommon among English-speaking children.
Two examples come from a (nonlinguist) colleague of mine who protested when I showed him
some of the utterances I was analyzing, that these children must be somehow unusual. The
very next two days he sent me two examples from his own son, E:
(viii) [E had done something wrong.]
F: How much remorse do you have?
E: Five remorse. (E 3:6.3)
(ix) [E was talking about how BIG a building in the distance was. His father asked him how
big it was, and first he used his hands to show it. Then his father asked him to use words
to describe how big it was and he said:]
It’s a millions big. (E 3:6.4)
Further examples will be given below from Rachel. Some examples from Saul are the
following:
(x) I like it 30 bits! (Saul, 4:9.28) [cf.: I don’t like it one bit!]
(xi) She is infinity nice Grandma! (Saul, 5:4.29)
And some examples from adults:
In the film What a Girl Wants the mother and daughter say:
(xii) [Mother to daughter:] I love you a million Swedish fish.
[Daughter to mother:] I love you a million red M&Ms.
In an interview with Jonathan Aitken on June 27, 2004, on BBC2 radio, the interviewer asks if
Jonathan Aitken thinks he has a lot in common with Richard Nixon. He says,
(xiii) Actually, he was a much greater politician than me by many hundreds of miles.
Finally, a caller on BBC2’s “Sunday Love Songs” asks that a song be dedicated to his loved
one:
(xiv) We love you infinity plus one.
TABLE 11.8  Association of Scalarity with Number

| M:  | Sadie, do you know how much I love you? |
| S:  | An a million dollars! 2.9.23 |

[V sent Sadie package full of hair clips at Halloween time. Sadie mentioning how much fun it was to open up the package:] It was so much fun. It was **20 fun!** 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20. It takes a long time to get to 20. 3.4.8

That doesn’t make any sense. Not one single (sent/cent). 3.8.24

Is everybody as tired as I am? I’m **150 tired.** I’m **199 tired.** 3.9.22

You’re very lucky. You’re **20 hundred and 750 lucky.** 3.9.24

[V and Sad discussing how Sadie was “lost” at a park one time]

V:  But Sadie wasn’t worried. Not one teensy bit.

S:  **Not even 2. Not even 3. Not even 4. Not even 5…b...bit.** 3.9.24

Actually, even though I’m 3 1/2, I’m quite light. 3.9.27

I’m like **once** less braver than Saul. I’m much lesser braver than Saul. I’m much less braver than Saul. 3.11.27

Predicates. In one telling occasion, Sadie even makes this association explicit, taking the time to count from 1 to 20 to exemplify how vast 20 is, and, hence, how vast the “fun” is that she wants to express:

(42) [V sent Sadie package full of hair clips. Sadie mentioning how much fun it was to open up the package:] Sadie:  It was so much fun. It was **20 fun!** 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20. It takes a long time to get to 20. 3.4.8.

The question arises as to why numbers are brought into these structures. From the acquisition of number literature, we can surmise that this is a critical period in children’s developing understanding of number. The fact that Sadie can count well—at least clearly up to 20—and that she associates the counting with the amount of time it takes to get through that counting suggests that her understanding of number—at least with regard to cardinality and the stable ordering principle—is fairly well formed. So several possible explanations for this development present themselves:

First, it is possible that the central understanding of scales—especially the stable ordering principle—comes through an understanding of number and perhaps through the understanding that a number represents a position in a sequence (Gelman et al., 1986; see introduction). The introduction of numbers into these adjectival structures may be an attempt to gain a firm grasp of scalarity through a metaphorical extension of the number scale to nonnumerical quantities.

A second possibility, however, is that numbers are brought into these structures as a result of bringing other quantifiers—a little bit, all, a lot, any—into adjectival phrases. The introduction of numbers may be a simple overextension of that development. It may be that the language is “inviting” the child to make such an extension.
A third possibility, of course, is that both of these may be operating. It may be that the language invites the child to introduce numbers into adjectival scalar expressions, and that children's growing understanding of number goes hand in hand with their growing understanding of nonnumerical scales.

**Summary, Intermediate Uses, Sadie**

We can summarize these intermediate developments as follows:

- **Semantic Encoding**: The semantics expressed during this period still involve **intensification**, **extreme ends**, and **likeness**, but Sadie now also begins to use expressions that go beyond these. However, there appears to be quite a bit of instability in the semantics associated with the forms that in the adult language encode scalarity. Scalar modifiers are sometimes used appropriately, sometimes in an immature fashion. In addition, Sadie begins making explicit remarks linking numbers with scalarity. This suggests that the understanding of scalar predicates may be facilitated by this association with number, or alternatively that number is introduced into adjectival constructs on the basis of linguistic overgeneralization, or perhaps some composite of these—that the development of the understanding and formation of scalar predicates evolves hand in hand with an understanding of number relations.

- **Forms**:
  - **Forms of As**: The modification of adjectives during this period expands to include *quite, how* beyond **intensification**, **too**, and **enough**, plus use of superlative forms.
  - **Forms of Qs**: *enough* enters as well as a quantifier; *many* and *most* enter, but the latter is only used in Double Marking of the superlative. Also, *much*, previously tied with Deg modifiers, is used for the first time without a Deg during this period.
  - **Elaborated Q forms**:
    - **Deg + Q**: Previously, Sadie used *Deg + much*, and we see this extended in two ways:
      - First, Sadie adds additional Deg forms to those she uses with *much*: *how* with nonintensification meaning, *too*, and as...as.
      - Second, she uses other Deg + Q combinations more extensively: *quite a lot, quite a bit, the a lotter [= (-er + a lot)] one.
    - **Q + (Deg) A**: Previously, Sadie had some expressions in which *a little bit, a lot, somewhat, and all that* preceded adjectives.
      - She now adds *a bit*, *any*, and *some* as preadjectival forms, plus uses *any too A*.
      - Furthermore, she begins using other non-Q quantifiers—numbers—as adjectival modifiers: *20 fun, 10 tired*, etc.
Other Q and Deg combinations: During this time, Sadie also continues to form apparently indiscriminate combinations of Qs and Degs, including:
- Deg + Deg + Q: "quietest bit"
- Deg + Deg + A: "very too small"
- Q + Q: "Not even 2. Not even 3. Not even 4. Not even 5....bit."
- Q + Q + Deg + A: "once less braver," "much lesser braver"

The Deg, Q, and A combinations Sadie uses are still apparently combined without any clear overarching syntactic structure (although there may be the constraint that the only Deg’s that can be modified are too, -er, and -est).

Finally, it is worth noting that all uses of enough and as during this period occur with explicit complements (enough...for, as...as).

What Is Missing During This Intermediate Period? While Sadie has begun using scalar markers (comparative, as...as, too X, enough), their use is not always appropriate—instead of expressing scalarity, they are sometimes used immaturely. Scalar uses are still relatively rare, and immature, during this period.

There is still no evidence of respecting a mass/count distinction in the quantifiers.

And there is still no evidence of the use of more in A modification.24

Finally, there is an apparent lack of any imposition of phrase-structure onto these multiply modified forms as they enter Sadie’s speech. Instead, their collocation appears governed more, initially, by lexically specific formulas, which, with time, get expanded to a fuller set of possibilities that appear constructed on the basis of concatenation.

RACHEL

The data from Rachel are from birth until approximately 6.0. The data consist of approximately 3,000 utterances involving relevant structures, collected on the spot in normal conversational interactions.

---

24 There is only one early use of more with a possible adjective, lightly, but it is not clear what word class lightly is:
(xv) This is more lightly than the kitchen’s more lightly. [i.e., brighter] 2.5.20
At a somewhat later age, beyond those examined here, we begin to see double marking of comparatives, in which more is used with A-er, in Sadie’s speech:
(xvi) I want to get some more higher. [F lifting Sadie up on his lap.] 4.7.9
(xvii) [Sadie trying to throw a bag into the garbage and coming up short:]
I should throw it more harder next time. [S throws it again] That was even worse! 4.6.16
Earliest Ages: Up to 3:0

Let us first look at Rachel’s use of adjectival and quantifier forms during the earliest period, up to 3:0.

Adjectives  As with Sadie, the earliest modified adjectival forms appear on the whole to express INTENSIFICATION. These include uses of reduplication and really (although really may instead, or in part, be connected with the expression of reality) (see examples in Table 11.9A). In contrast to Sadie, Rachel used -er and -est quite extensively for absolute uses (to mean “X”) and for INTENSIFICATION; see further examples in Table 11.9A.

Like Sadie, Rachel also talked about EXTREME ENDS, using lexical forms like first and favorite, and she used same to express LIKENESS (see Tables 11.9B and 11.9C). She also showed early attention to expressing CONTRAST, as in Table 11.9D, mostly with contrasting use of lexical opposites: little vs. up; little vs. long.

Finally, at this early age, Rachel also used too, but mostly in the expressions too late and too heavy, used extensively to express impossible situations, or “can’t” (or in one case, the last example, possibly “can”). See examples in Table 11.9E.

**TABLE 11.9  Adjectives Rachel Up to 3:0**

Table 11.9A  Early Adjective Modification—INTENSIFICATION

Reduplication

Look, he has long, long, long, long feet. [R looking at ad for panty hose—only legs showing.] 2/7.10

really

I’m not a really monster. 2/10.15

-er used for “X” or “very X”

Not too faster [R closed refrigerator door fast.] 2/2.23

Look—I’m bigger than Jaine. I’m taller than Jaine. I’m taller. [R standing on tip-toes. J is two years older. Appears that R probably means “big like.”] 2/9.3

My hand’s taller than yours. [R holding her arm out next to M’s. Her arm’s “longer than”? “the same length as”? M’s.] 2/9.3

R:  I’m not stronger to do that.
J:  If you were stronger, you could do it, Rachel.
[Re: cracking walnuts. R trying, but not able to crack them. J is 5:1.] 2/9.27

I’m the stronger one who can lick this. [R licking pie turner.] 2/10.7

See. I was stronger to put that comb up. [R has put comb up on chest of drawers.] 2/10.13

than without -er

That’s orange than my room. [R pointing to a card that is about the same shade of orange as the wall in R’s room. Means “orange like?”] 2/10.0

-est used for “X” or “very X”

Look at that towel. It’s highest. [Re: towel hanging from shower door bar. No other towels in vicinity.] 2/7.25

I got the prettiest that you got. [context not clear] 2/8.9

Look—I’m bigger than Jaine. I’m tallest (than) Jaine. I’m taller. [R standing on tip-toes.] 2/9.3
TABLE 11.9 (continued) Adjectives Rachel Up to 3;0

Table 11.9B Early expression of EXTREME ENDS

[M asking if R's favorite food is hot dogs.]
M: Rachel's favorite?
R: [âin] favorite. 2;1.22

Table 11.9C Expression of LIKE

These are the same ones right? [re: R's pockets on her pants are the same, i.e., match] 2;10.27

TABLE 11.9D CONTRAST

My other fork's dirty—cause I need to use this one. [i.e., "...so..." ] 2;7.16
She's little, and she's up. [1st "she" = doll without legs-little; 2nd "she" = doll with legs-up, R standing them both by potty she's sitting on.] 2;7.23
[âil] little before you. [i.e., "I'm littler than you"] 2;8.4
[R referred to baby potty as] "little potty" [and then the toilet as] "up potty." 2;8.13
That's my little finger. That's my little finger, and that's my up finger. 2;8.13
F: She's only little. [re: R]
R: And you guys are long. 2;10.4

Mommy, yours is little and mine is long. [M's cereal and R's cereal boxes standing on table—R's is taller than M's.] 2;10.19

Table 11.9E Immature Uses of too A

Earliest uses, with late and heavy for "can't"

too late [used for impossible situations, e.g., R had brought M a right shoe to put on her left foot. M told her it wouldn't fit. R responds with "too late."] 1;11.16

that too late 2;9.13

M: You put on your socks.
R: [nasalized: [âil] ] too heavy [i.e., to put socks on—means "I can't"], R wanting M to put socks on her. 2;8.27

You're too heavy. [M carrying R to get PJ's; R has to bend far down to reach them, i.e., M "can't?"] 2;7.16

I need to throw them in, don't my. 'Cause I'm too heavy for them. [R threw PJ's into crib. i.e., "I can't?" ] 2;8.11

Uncertain meaning—"so X"?

Not too faster [R closed refrigerator door fast.] 2;2.23

Quantifiers As in Sadie's case, one of the earliest quantifier forms to be used is more, initially used for requesting recurrence. But toward the end of this period, just before turning 3, Rachel seems to take more to mean something like "amount" (see Table 11.10A).

In addition, Rachel used many and much early, but both of these were highly restricted. First, many was used only in relation to age: "This is the many I'm gonna be. I'm gonna be three in a minute" (2;11.6; more below on this). And in the case of much, as with Sadie, the earliest use was tied with a Deg, in Rachel's case too (see Tables 11.10B and 11.10C).

Finally, as in Sadie's case, we see the early use of some modifiers with more in Rachel's speech, at 2;7: any more and no more.
TABLE 11.10 Quantifiers Rachel Up to 3:0

Table 11.10A Early Uses of more—Recurrence, Amount

more [used when bringing toys to MOT; going to get more]. 1:6.27
more [R looking at empty glass in bathroom—wanting water]. 1:6.11
mo poon [imitation] [R picking up spoons off floor; R repeated “more spoons.”] 1:6.13
mo mo ba ba [i.e., “more bottle”] [R holding out bottle for more milk]. 1:7.6
oh mo down [R dropped toy cat, then dropped bottle]. 1:8.6
/bay gat may luwdo/ [“I got my noodle”] [R holding noodle]. /mor nwdoz/ [“more noodles”] [R wanting more noodles]. 2:0.8
/mor mead/ [= “more bread”]. 2:1
[aɪ] more cracker of Jaime’s [i.e., “I want more cracker of Jaime’s”] [R wants more of the kind of crackers that J is eating—J’s kind]. 2:2.30
It’s long sugar. Long more sugar. [R had taken a heaping teaspoon of sugar for cereal. Means something like “a huge amount of sugar”]. 2:9.11
I sleeped a long more. [i.e., “... a long amount,” “... a long time”]. 2:10.13

Table 11.10B many [Connected with AGE]

This is the many I’m gonna be. I’m gonna be three in a minute. [R holding up three fingers; i.e., “I’m gonna be three soon.”]. 2:11.6

Table 11.10C much

There was too much toys in my purse. [R’s purse is full of toys; toy “Cookie Monster” fell out.]. 2:11.21

Table 11.10D X + more

R: Any more! Mommy any more.
M: Any more what, Rachel?
R: I don’t want any more. No more. No more milk. 2:7.10

Summary, Early Uses, Rachel

These developments are entirely consistent with those we observed early on for Sadie.

- Semantic Encoding: The semantics expressed through these early morphological forms for modification primarily revolve around the notions of intensification, extreme ends, and likeness. Rachel adds as well the notion of contrast, the flip side of the coin to likeness.
- Forms:
  - Forms of As: The early modification of Adjectives primarily is carried out with reduplication and suffixes. While Sadie at these ages primarily used pre-adjectival forms so, very, really, and reduplication for the purposes of expressing intensification, Rachel used reduplication and the suffixes -er, -est.
  - Rachel also used the forms too late and too heavy extensively. However, their semantics was related to impossible situations or the expression of “can’t.” They in no way carried the semantic import that these would have in adult speech.
• Forms of Qs: Rachel, like Sadie, used more early on for recurrence, but then later for “amount.” Rachel, like Sadie, used much fairly early, but, also like Sadie, much was linked with a Deg modifying it.
  In addition to these quantifiers, Rachel used many, but only in relation to age.
• Elaborated Q forms:
  – Beginning expression of modification of Qs:
    Rachel begins (around 2;7) with some appropriately formed X + more constructs: any, no + more.
  – It is slightly later (2;11) that we have evidence of the first expression containing a Deg and much: too + much.

As in the case of Sadie, I have expressed these developments in terms of “Deg,” “Q,” and “A,” but there is no evidence that Rachel had any broad categories governing these forms as she was expanding these possibilities. Instead, there is clear evidence of early limited knowledge; for example, restriction of too for adjective modification to late and heavy; early restricted modification of more, with any and no; restriction of much to use with a Degree marker, too; and the early use of many restricted to age.

What Is Missing in This Early Period? The forms that are missing from Rachel’s speech during this early period are as illustrative as those that are present. Up to age 3;0, the following elements seem lacking:

1. Despite prolific inappropriate early uses of -er, -est, and too, there is little evidence of appropriate semantics associated with these forms. Furthermore, like Sadie at this age, there is no use of as...as, enough, that X, this X in these A and Q constructions. Note again that all of these involve the expression of the presence of a property or quantity along a scale.
2. It is worthy of note that Rachel’s use of than is not restricted to use with -er, but is also used with bare adjectives; for example, “That’s orange than my room” (2;10.0). Furthermore, the standard of comparison with -er is not always introduced with than, but sometimes with other, inappropriate standard markers—“stronger...to do that,” “the stronger one who can lick this,” “stronger to put that comb up.” This indicates that Rachel has not yet grasped the necessary link between -er and than. In addition, the meaning of than seems to be taken as “like” in many cases.
3. As in Sadie’s case, there is no evidence of respect for a mass/count distinction in the use of much; for example, her one attested use of much is in the utterance, “There was too much toys...”

Intermediate Ages: 3;0–4;0

Intensification, likeness, contrasts, etc. During the next period, Rachel shows continued use of forms for intensification, adding several new modifiers
to her repertoire, especially in the first half of this year. These include very and real, in addition to continuing use of reduplication, -er, and -est to express intensification. She also adds enough and too. The last of these now occurs with spatial adjectives, and not just in too late and too heavy. But these early expanded uses of too A appear to be largely for intensification (see Table 11.11A).

We also see continued expression of likeness and contrast, as shown in Table 11.11B and 11.11C. And we see continued use, at least in the first few months, of too heavy to mean "can't," shown in Table 11.11D.

Beyond these forms and uses, we see several new developments in Rachel's use of the relevant forms:

Adjectives First, with the forms already in her speech—especially -er and -est, she begins showing apparently appropriate uses; they seem to start coming in for -er around 3;5 or 3;6 and for -est around 3;8; see examples in Table 11.11E. It is of note that for both -er and -est, when Rachel uses a standard of comparison at these later ages, she uses an appropriate form: than with -er, and in the whole wide world or that we never ever saw with -est.25

In the case of too, around 3;3, Rachel begins using too with adjectives other than late and heavy, and, as already noted, at first the dominant meaning seems to be in relation to intensification, as in the examples in Table 11.11A. Around 3;6, however, there are some possibly appropriate uses of too A emerging (see Table 11.11E).

Also at approximately the same age, Rachel begins using how with old (and only old), for the specification of age. Finally, we see an initial attempt at using as, shown in Table 11.11E, but the form is inappropriate—as bigger than—and the semantic import is very unclear (“as big as,” “bigger than,” “big like”?)

Before leaving the adjectival forms, there is further evidence in the first half of this year that Rachel has trouble interpreting the linguistic forms that have scalar meanings. Some examples are evident in the examples in Table 11.11; for example, the exchange at 3;6:

(43) R: Can you reach it?
M: No.
R: Are you too little?
M: Yeah.
R: Are you too big? You’re not too little! Look at you.
[R wanting R or M to get pitcher up high on cabinet. First too little appropriate. Second too little as if R has heard what she has said, and reinterprets it as "very little."] 3;6.30

Other examples come from Rachel’s interpretation of spatial scalar adjectives; for example, on one occasion we were playing with eight graduated rings, and we began talking about which ring(s) were biggest, largest, smallest, and so forth:

25I will not concern myself here with the negative in that we never ever saw, even though it is interesting in that it is consistent with the form that would be expected in some languages other than English; for example, Spanish: Es lo más grande que nunca he visto ‘It is the biggest that I have never seen.’
TABLE 11.11 Adjectives Rachel 3:0–4:0

Table 11.11A Continued Modifications Expressing INTENSIFICATION

**very**
I'm gonna be very short with my beans. 3:5.8

**Reduplication**
It's gonna be for a long, long time. [i.e., R's going to take a long time to finish cereal.] 3:4.26
You know what I like... real real?... Milk. 3:6.17
Here's a long, long, longer noodle. [R placing noodle out straight on table. No comparison apparent.] 3:7.19

**real**
You know what I like... real?... Milk. 3:6.17
The milk goes out real fast, doesn't it. [R talking about milk when poured from pitcher...“comes out”... Pitcher just standing on table in front of R.] 3:8.7

**x or used for “X” or “very X”**
R: His hat's bigger.
M: It's bigger than what?
R: His hat’s bigger than my coats.
[Referring to inflated Santa Claus's hat. Santa is standing in R's room, and his hat reaches as high as the coats that are hanging in her closet. R apparently means something like “big (high) like my coats.”] 3:0.19
R: My shoes are littler than my feet.
M: Are they gonna fit your feet?
R: Yeah.
[In discussion, R kept to her contention that her shoes were “littler than” her feet and would fit her feet. Apparently means “little like” her feet.] 3:1.28
I'm as bigger than her. [R standing up to compare herself with photo of herself. Meaning might be “I'm the same size as her” or “I'm bigger than her.”] 3:4.26
I get the littler spoon. [R went and got one of the baby spoons out of the drawer; R setting table, or about to eat.] 3:5.0
Don't make this tighter. [R trying to open pickle jar lid. She finds she can't open it.] It's tighter! 3:6.14
Hey! I got two prettier shirts! [R has taken one of her favorite shirts out of her drawer to put it on. When asked about "two" R referred to a shirt that she wore home from school, after getting her other clothes wet at school.] 3:6.23
Two big ones. Two bigger ones. Two big ones. [R asking to have crackers after supper; none in sight.] 3:6.29
I don't get better glasses, but you do. [As M gets out B's and M's glasses. When questioned, R asserts that M's are black, makes no reference to her own.] 3:7

**x or used for “X” or “very X”**
If we have a biggest mouth, we have to put a biggest popsicle in it. [M getting popsicles out for children.] 3:2.28

too X or used for “X” “very X”
Put that in my place 'cause it's too little. [R getting out spoons for dinner. Handing M a very little spoon that she chose for her own use.] 3:3.14
Your hands are too big. [context?] 3:6
I'm too high. Daddy. [R standing on table to turn light on, can barely reach light switch; proud of how high she is.] 3:6.6
Table 11.11A  (continued) Continued Modifications Expressing INTENSIFICATION

| J: | Look how long our train is.          |
| R: | It’s too long, right?               |
|    | [Both J and R eager to make the train they are putting together as long as possible.] 3.6.8 |

Look how high it is. Too high. Too high means too tall. 3.6.23

enough

| R: | We came home fast enough.          |
| F: | Fast enough for what?              |
| R: | We came home in the car fast enough.|
|    | [It doesn’t understand why F asked her the question; rephrases her statement.] 3.7.15 |

Table 11.11B  Continued Expression of LIKE

same

| R: | Big swimming suit is the same and big undershirt is the same. |
| M: | The same as what? |
| R: | They’re the same together… They’re the same. |
|    | [If apparently referring to the fact that swimming suit and undershirt have same kind of straps.] 3.6.21 |

They’re both the same amount. They’re half. They fit. They both fit. They’re the same amount. [R holding two lids of same size of her toy dishes together—inside to inside.] 3.6.23

| R: | C’mere—I got the same socks.       |
| M: | What do you mean “you got the same socks”? |
| R: | I got two socks.                    |
|    | [i.e., two socks that match; R found pair of socks in drawer to put on.] 3.6.23 |

Table 11.11C  Continued Expression of CONTRAST

| M: | They’re too little. [re: pair of shoes R has outgrown.] |
| R: | When I grow big, then I can have them on… Do shoes grow? 3.4.28 |

…when I grow back to a baby down. […] then R will go on an airplane again. R & M had been talking about the fact that R had gone on an airplane when she was a baby.] 3.5.2

Jasmine’s the little Amy’s dog. Jasmine’s the little dog that’s Amy’s. [Sue has 2 dogs; Jasmine is the smaller of the 2.] 3.5.11

[F asked R if there were two Terry’s at R’s school, and R said “yes,” then:]  
R: One is different, and one isn’t.
M: Which one is different?
R: Terry L. is different.
[Terry L. taught there last year, not this year—t perhaps referring to this.] 3.7.18

Table 11.11D  Continued Use of too heavy for “can’t”

| M: | You’re not too heavy for me.       |
| R: | I’m too heavy to pick you up. [i.e., “I can’t pick you up.”] 3.0.25 |
| M: | Only daddy can go up there.        |
| R: | I’m too heavy.                     |
|    | [R wanting to climb on piano to get to attic.] 3.2 to 3.4 |
TABLE 11.11 (continued) Adjectives Rachel 3:0–4:0

<table>
<thead>
<tr>
<th>Table 11.11E Beyond INTENSIFICATION</th>
<th></th>
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<tbody>
<tr>
<td>-er possibly used appropriately</td>
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<tr>
<td>M: That dress is too big.</td>
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<td>R: I'll get a littler one. [“little” “littler” “very little”]</td>
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<td>[M dressing R.] 3:1.25</td>
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<tr>
<td>You're prettier than me, 'cause I smile not harder than you. [R referring to the fact that M hadn't bought R's school pictures because R wasn't smiling in the picture. Second clause means either “I don't smile hard like you” or “I smile less hard than you”.] 3:5.5</td>
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<td>[R and M eating. M has cleaned the plate; R still has food on hers.]</td>
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<tr>
<td>R: Are you done?</td>
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<td>M: Mmm. I'm in the clean plate club. [At school, children who finish their food are in a &quot;clean plate club.&quot; ]</td>
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<td>R: Then I eat slower. I'm little. You're bigger than me, right? 3:6.29</td>
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<td>When the water gets littler, then I don't need to be careful of the glass. [R then pours out some water]. The water got littler. 3:6.30</td>
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<td>-est used for Superlative</td>
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<tr>
<td>Look what sharpest knife this is. It's the sharpest knife in the whole wide world. 3:8.4</td>
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<td>I want yellow. 'Cause yellow's my best. I like yellow best. [R picking yellow gingerbread man out of four men in game.] 3:8.15</td>
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<td>Some people say &quot;fairest,&quot; right? Not fairest. Yeah, fairest. 3:11.0</td>
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<td>M: What did you see at the museum, Rachel?</td>
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<tr>
<td>R: The biggest dinosaur that we never ever saw.</td>
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<td>[R, J, and F just got back from natural history museum.] 3:11.4</td>
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<tr>
<td>I'll still be a big kid—a big kid in the whole wide world. [R standing on toes with hands way up high.] 3:11.17</td>
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<td>too used appropriately</td>
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<td>M: Yeah.</td>
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<td>R: Are you too big? You're not too little! Look at you. [R wanting R or M to get pitcher up high on cabinet. First too little appropriate. Second too little as if R has heard what she has said, reinterprets it as &quot;very little.&quot; ] 3:6.30</td>
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<td>I'm too big...to drop through that hole—to drop through my pretend babies' hole. [R holding hands together, interlacing fingers except pinkies, with which she is forming a &quot;hole.&quot;] 3:6.30</td>
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<td>This is real soft to carry for me. I'm too tired to carry this. 4:0.12</td>
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<td>how / old connected with AGE</td>
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<td>I'm gonna tell them how old they are. &quot;How old are you guys?&quot; [R pretending to talk to her aunt and uncle on telephone.] 3:7.28</td>
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<td>as</td>
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<tr>
<td>I'm as bigger than her. [R standing up to compare herself with photo of herself. Meaning might be &quot;I'm the same size as her&quot; or &quot;I'm bigger than her.&quot; ] 3:4.26</td>
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</table>
(44) [R and M are playing with eight graduated rings; M puts them in a line from largest to smallest:]
M: Which is the biggest?
R: This is the biggest [picking the biggest].
R: These three are the biggest [pointing to three largest]. These are the littlest [picking up the other five].... Which is the largest?
M: Which?
R: I don't know.
[M separates rings, spreads them around randomly.]
M: Which one's the smallest?
R: That's the tiniest [pointing to littlest].
M: Which is largest?
[R chooses third smallest]
R: Let's see if it fits on there.... [setting that ring on other, larger ring; etc.]
[M tells R to put tiny toy baby bottle on “biggest” ring; R places it on biggest; M tells R to put bottle on “smallest” ring; R places it on second smallest; then:]
R: Do you want me to put it on the tiniest?
[R then puts bottle on smallest ring.]
[M places rings in line.]
R: All those are larger [re: biggest six rings]. Those two are smaller [re: smallest two rings].
M: Which one's littler than this [M pointing to fourth smallest ring, in line]?
R: These are littler [pointing to smallest three].
M: Which one's bigger than this [M pointing to same fourth smallest ring]?
R: These are bigger [pointing to largest four rings].
M: Which one's littler than this [pointing to third largest ring]?
R: That's big!
R: These are littler [pointing to smallest three], and these are bigger [pointing to other five].
M: Which one's the largest?
[R points to third largest]. 3.6.30

It seems that Rachel is, first, more or less overlooking the -er and -est endings on the adjectives and seems to be trying to understand the adjectives tiny, small, little, large, big. She seems to be attempting to locate these adjectives in a line from tiniest, at the extreme end, to smallest to largest to biggest, with littlest somewhere in between. But her difficulty in applying a scalar distribution of the terms, attempting to fit them into a sequence (to which they do not fit) appears to leave her stumped. The application of each term and where it fits relative to the others,
especially in combination with -er and -est, poses a tricky challenge when scalarity and the meanings of -er and -est are still somewhat shaky.

On another occasion, at 3:8.27, Rachel corrects my choice of little to tiny:

(45) [M and R are doing a puzzle. M tells R to look for a piece with brown, blue,...]
M: ...and a little bit of yellow.
R: a tiny yellow, you mean.

Quantifiers Earlier, before 3.0, Rachel already had more in her speech, but, as noted, she seemed to use more to mean something like “amount.” By 3.11, Rachel’s use of more seems to refer appropriately to comparative amount (see Table 11.12A).

Between 3.0 and 4.0, there are also uses of a lot, much, and most (see Table 11.12B). Both a lot and much are inappropriately linked with than. Both combinations appear to be used with a comparative import (“more...than”) at a time when more was being used for some less mature meaning (“some”). There are also a few late use of most (note, not as an adjectival modifier).

Quantifier Modification Rachel continues to modify more with any (see Table 11.12C). The primary uses of much and many occur with modifiers—too much/too many, that much, and how many (Table 11.12C). While the semantics of too many is not clear, the semantics of too much and that much appear to be appropriate, and these occur at about the same time as the appropriate uses of A-er, A-est, and too A also begin to occur. The use of how many (as was the case for the many and how A—how old) encodes reference to age.26

What Is Missing? As in Sadie’s case, with regard to form, there is very little (or in some cases, no) use of a number of forms: as...as, enough, that X, and this X. Unlike Sadie, Rachel does use many early -er, -est, and too A forms, but mostly with meanings of intensification (or until) around 3:6, when more appropriate uses appear to be emerging. Rachel does not use very A or how X very much, except for the use of how X in a couple of references to age with “how old” and “how many.”

As noted above, Rachel’s inappropriate uses of these forms are missing notions of scalarity; for example, in her use of fast enough, in (46), she appears to mean “very fast”:

26This association of many and how many with age is not unusual. Some examples from other children:
(xviii) ...what old will I be? How many will I be when it be’s my birthday?... I’ll be this many when it’s my birthday [holding up five fingers]. Because that means older. (Jaime 4:0.23)
(xix) Tracey (3 yrs): That’s how many I am. [holding up three fingers]
Jaime (7:4.1): “Here’s how much I am,” she should have said.
TABLE 11.12  Quantifiers Rachel 3;0–4;0

Table 11.12A more

more time today, right? [R drinking tea w/ spoon; M isn’t? R had commented that we can drink tea w/ spoon. meaning not clear.] 3;6.21
Can I touch the table any more? [R asking if she can touch table which M had painted yesterday, so yesterday R couldn’t touch it ‘cause it was wet.] 3;7.9
This one gets more—most. [R holding two packs of paper, one thin, one fat.] 3;11.0

Table 11.12B Other Quantifiers

a lot
I want a lot of noodles than this. [i.e., “...more...” M had put some noodles on R’s plate.] 3;2.19

much
Daddy gets much milk than me....Daddy gets too much. 3;6.21

most
They were most bad and not most good. [R’s dolls have to sit on chairs because they were naughty; i.e. they were “mostly bad.”] 3;9.2
This one gets more—most. [R holding two packs of paper, one thin, one fat.] 3;11.0

Table 11.12C Modification of Qs

more
Can I touch the table any more? [R asking if she can touch table which M painted yesterday, so yesterday R couldn’t touch it ‘cause it was wet.] 3;7.9

much
Daddy gets much milk than me....Daddy gets too much. 3;6.21
Are my gonna carry that much plates? It’s too much. It’s too much plates. One, two, three, four, five. Five plates. 3;9.16
Three things. My tummy can’t take that much things. [i.e., cookies, crackers, candy.] 3;10.10

many
And there was a little boy that told me how many I am. [i.e., “...that asked me how old I am”] 3;9.26
(There’s) too many people (in the swimming pool). [R pretending choccies in milk are people, not clear if means “a lot.”] 3;6.21

(46) R: We came home fast enough.
   F: Fast enough for what?
   R: We came home in the car fast enough.
   [R doesn’t understand why F asked her the question; rephrases her statement.] 3;7.15

As in Sadie’s case, there are indications outside of these forms—for example, in the realm of time expressions—that support the claim that Rachel lacks an appreciation of scalarity:

(47) R: (When we got our clothes off) we’ll still be cold.
   M: Are you cold now, Rachel?
   R: No, ‘cause I got my P’s on.
   [means “we’ll be cold then”] [R’s interpretation is not scalar, but punctual] 3;8.28
TABLE 11.13 Problems with Scalarity

| R:  | (When we got our clothes off) we'll **still** be cold. |
| M:  | Are you cold now, Rachel? |
| R:  | No. 'cause I got my PJs on. [means "we'll be cold then"] [R's interpretation is not scalar, but punctual] 3:8.28 |
|     | You get it until I get my clothes. [F should get tea for R after she gets her clothes on. It means "you get it... when... I get my clothes"] [R's interpretation is not scalar, but punctual] 2:10.24 |
|     | He's gonna get up till night-time. [J going to take a nap—idea: will sleep a long time—will get up "at" night-time.] [not scalar, but punctual] 3:5.12 |
|     | I won't eat it until I don't have any salt on it. [R won't eat supper till she can put salt on it. "I will eat it... when...?] 3:7.7 |
|     | No wonder we can have a birthday till Christmas. [R was asking M when her J's, M's birthdays were. M's birthday is on Christmas day. [till = "at"...] not scalar] 3:8.5 |

(48) He's gonna get up till night-time. [J going to take a nap—idea: will sleep a long time—will get up "at" night-time.] [not scalar] 3:5.12

See further examples with until and still in Table 11.13. Both still and until, in their appropiate adult usage, encode a relation between positions on a time scale viewed from below upwards until a cut-off point; that is, both scalability and direction on the scale are encoded. Rachel uses still and until with a punctual import, to mean something more like "when" or "then."

**Summary, Intermediate Uses, Rachel**

During the first half of this year, Rachel's understanding of the comparative and the superlative appears to be still very immature, with uses for "X" and "very X." Around halfway through this year, nonintensifying uses of these forms and of how, too, and enough also begin to emerge. But Rachel's understanding of scalarity is still immature.

With regard to form, at about the same time as appropriate semantics for A-er and too X begin to emerge, Rachel seems to more consistently link -er with than complements. During this period, much also enters her speech as the second element in too much and that much.

**Subsequent Advances: 4:0–5:0**

**Adjectives**

**INTENSIFICATION:** During the next period, first, Rachel shows continued use and expansion of forms for INTENSIFICATION. This includes reduplication, very, really [and real is also used for "authentic"], so, and pretty. These are shown in Table 11.14A. During this time, around 4:6, another use of very, to mean "absolute" becomes very prominent, as seen in Table 11.14B. And her use of how with adjectives also expands beyond exclusive use with old. The semantic import
of these utterances is sometimes not clear. But at least some of the uses appear to be for **intensification**.

(49) Look **how big** I got this. [R pulled off big lump of shell from Easter egg; she apparently means something like “Look what a big piece came off.”]
   4:11.12

At other times, the import seems to be more scalar. This seems most evident in utterances like the following at 4:11, in which she is comparing bigness in two things, implying some placement of the two relative to each other on a scale.

(50) R: Look **how bigger** the ladder is from you.
    M: What?
    R: Look **how big** the ladder is from you.
    [R and M in back yard; ladder taller than M.] 4:11.4

**A-er**: Her use of **A-er** during this time confirms semantic solidification prior to 4:0. There is no evidence of further uses of **A-er** to mean “A” or “very A” (see Table 11.14D, which shows unmodified uses of **A-er**). Her knowledge that **-er** is linked with **than**, when a standard of comparison is expressed, also continues to show solidification by this time; she no longer uses alternative standard markers with the comparative.

Interestingly, at 4:9.24 Rachel produces one use of **less A** (“less cold”), shown in Table 11.14E. But we will see below, in the next period, a serious struggle with the expressions of forms encoding negative ends or direction on a scale.

**A-est**: She also uses **A-est** extensively during this period. Uses of **A-est** that are not modified are shown in Table 11.14F. As is true for the uses of **A-er**, the semantics of **A-est** shows solidification also prior to 4:0, with no further uses to mean “A” or “very A.”

It is worth noting, before going into further modifications of the adjectival forms, a few developments in relation to the form of the simple superlative. First, Rachel shows some clear struggling with the form of the superlative: While in the adult language, the superlative virtually always occurs with **the**, Rachel sometimes uses **my**, sometimes **the** before **A-est**. This is perhaps a carry-over from **my favorite** [**favorite** has been in Rachel’s speech from the earliest stages], as well as her clear association of **favorite** with **best**, as in:

(51) I’ll tell you what’s my **best** Kool Aid—pink. [F, M, J, R talking about “Country Time” lemonade being like yellow Kool-Aid.] 4:4.27

What is **your best book** of mine? [ = “what book of mine is your favorite?”] 4:10.25

Purple is Nicole’s favorite color—**best** color. 4:10.26

Daddy, here is my **best** part—“21 on none.” [in book—21 people on no bike.] 4:11.4
That's my best song in the whole wide world. 4:11.14

R: That's my best thing.
M: That's your best thing?
R: Uhuh. [ = yes] ... I mean that's the [ = /θɔ:/] best thing. 4:11.19

Oh, that's my best part! [R in kitchen—hears song on Sesame Street that she likes; then runs into living room to watch; song: “People in Your Neighborhood’’] 5:0.11

(Note her self-correction to the in the second-to-last example.) She even uses best as the degree marker at this same time:

(52) R: Wonder Woman is the best great of all.
   J: No, Green Goblin.
   R: Green Goblin is the best great of all.
   [R and J playing wrestling; R is W.W., J is G.G.] 4:9.29

She also shows some overextensions to marceloust, differentest (and favorbest just prior to this period, at 3:11). And toward the end of this period, around 4:10 onward, she shows double marking (the most A-est) on superlatives (Table 11.14G).

The second aspect of the form of the superlative that is developing during this time is the standard of comparison. For Rachel, the clear favorite form is in the (whole wide) world, as shown in the examples in Table 11.14H. But, like her early use, around age 3, of than phrases outside of A-er phrases, Rachel’s use of in the (whole wide) world at this age, at age 4½ to 5, extends beyond the superlative (and takes on a superlative type import in those phrases). Furthermore, she eventually turns this expression into world’s, used preadjectivally as a superlative marker, also shown in Table 11.14H—e.g., in:

(53) The greatest world’s mommy. [R being affectionate.] 4:11.0

This association of in the world with world’s is quite explicit in the following utterance:

(54) [R is reporting to M a dream she had:]
   R: [R says she dreamt about:] the world(s) stealer.
   M: Does he steal the world, Rachel?
   R: No, he steals everything he finds. 4:11.17

Finally, during this time, we also see greater use of scalar modifiers. She uses too Aleneough A, shown in Table 11.14I, even in self-correction from what appears to be an initial use of too A to mean “very A” to a more appropriate A enough. There are many more occurrences of as A as, shown in Table 11.14J. It is clear that the semantics of these uses of as...as is deficient, however. In most cases, Rachel appears to mean “the same X as,” so as big as means “the same size as,” and so
TABLE 11.14  Adjectives Rachel 4;0-5;0

For INTENSIFICATION.

Reduplication

There's a big, big, big, long dinosaur. [R drew a tall, skinny ghost-like shape.] 4.6.7

R: They're way so down ....
M: What?
R: I mean they're way so far down they look like tiny, tiny ants.
[M looking at people outside 4th floor window, down on ground through window.] 5.0.24
That is a busy street—busy, busy, busy street. [re: main street through town] 5.0.30

very

R: That's littler and that's taller. [re: two glasses almost exactly same height, but very different in diameter; first = juice glass, second = mug]
[M writes this down; R then asked M what she wrote and M read it; R corrects.]

R: very tall
M: And is that very little?
R: Yes, and that's very taller. Look how big that is. Can you see how tall it is? 4.6.25
M: Why don't you use one of your purses for your crayons?
R: No, I have a very better idea.
[M collecting up crayons; R then goes to get one of her dishes to put crayons in.] 4.11.3
Ronald McDonald is littler than Saasha—very littler. [re: R.McD. hand puppet] 4.11.6

real

M: They don't like babies at my school.
R: Unless they're real ones that belong to mummies and daddies.
[M asking M if M will take her doll baby to university.] 4.10.8
R: Keep your foot hard to the ground.
M: What?
R: Keep it to the ground real hard.
[M wants to "crack" M's toes; M has to hold foot back.] 5.0.23

really

The jug is really filled with milk. 4.11.29

so

You, because I was so busy. Except I'm gonna be so busier this time. [J wants to lie in M's bed w/ M for nap, then told R she could, since she hadn't done it on a previous occasion.] 4.9.0

pretty

This is pretty hard to show up. [R trying to write her name on book; the name is hard to see.] 4.10.16

Table 11.14B  very for "absolute"

The very next top drawer. I mean, the very third drawer. [R telling M that she found item she was looking for in 3rd from top drawer in kitchen] 4.6.24
I can even do the very back one. [R snapping P] top to bottom—there is 1 snap in the middle of the back.] 4.9.18

J: Rachel, where's your PJ drawer?
R: On the very bottom
[J putting R's PJ's away; J doesn't know which drawer to use.] 4.10.4
Table 11.14B (continued) *very* for "absolute"

R: What day's just before—the *very* before Easter?
M: What?
R: What day's right before Easter? 4:11.0

You made me have to do the *very* rest. [M waited for R to let M wash R's face; R washed all dirt off and M told R M didn't need to wipe R's face since it was all clean; then R wiped forehead and said above.] 4:11.26

That's because the blocks were at the way—on the *very* bottom. [re: R moved top toy bins to get to bottom one which had blocks in it -- was way at the bottom.] 5:0.18

Table 11.14C *how*

Do you wanna see *how* big their fingers are? [i.e. the "daddy" forks—the tongy of big forks.] 4:3.13

R: *That's* little and that's taller. [re: two glasses almost exactly same height, but very different in diameter; first = juice glass, second = mug]

[M writes this down; R then asked M what she wrote and M read it; R corrects:]
R: *very* tall.
M: And that *is* very little? 4:3.13
R: *Yes*, and that's very taller. Look *how* big that is. Can you see *how* tall it is? 4:3.6.25
R: Look *how* bigger the ladder is from you.
M: *What?*
R: Look *how* big the ladder is from you.
[R and M in backyard; ladder taller than M] 4:11.4

Look *how* big I got this. [R pulled off big lump of shell from Easter egg; she apparently means something like "look what a big piece came off!"] 4:11.12

Look *how* big daddy gave me a bowl. Look *how* big of a bowl daddy gave me. [re: bowl for egg shells.] 4:11.12

R: Look *how* big my mouth is.
F: Wow, what if I fell in there?
R: You wouldn't, because it's not so little ... I mean, so big.
[R showing F her mouth with it wide open.] 5:0.6

Table 11.14D *a*-er

M: Who's bigger than me, Rachel?
R: Daddy.
M: Who's littler than me?
R: Jaime.
M: Who's the littlest, Rachel?
R: Jaime and me. 4:0.7

[A girl and a boy on Sesame Street help each other put smocks on. The girl is shorter than the boy. The little girl is *littler* just like me...[R looks at J] is *littler* than Jaime! 4:4.6

F: Whose sandwich is this?
R: Ann said she'd leave it for me unless I want it later. [i.e., "...in case I want it later"]

[F has found sandwich in the refrigerator.] 4:8.6

I'm *bigger* than anyone in the world. [R standing on table.] 4:10.6

Higher, higher. [i.e., louder, music on radio; R wants M to turn up radio.] 4:10.15
(Do you know why I got back here?) Because it's the *warmer* place. [R behind sofa] 4:10.27
Table 11.14D (continued) A-er

<table>
<thead>
<tr>
<th>J</th>
<th>I like 'em better.</th>
</tr>
</thead>
<tbody>
<tr>
<td>R</td>
<td>He said &quot;I like 'em better.&quot;</td>
</tr>
<tr>
<td>F</td>
<td>What's he supposed to say?</td>
</tr>
<tr>
<td>R</td>
<td>I like 'em better than that. (4:11.7)</td>
</tr>
</tbody>
</table>

This can't be coffee 'cause it tastes so good—how'd they take the better taste—the best taste out. [R saying commercial, real words: "How'd they take the bitter taste out?"] 4:11.9

It helps your bones get strong/stronger unless the hammer's too heavy for you. [re: milk, J had said milk was good for nails (referring to fingernails); R picks up on this, thinking he was referring to nails for hammering. She means "It helps your bones get strong/stronger in case the hammer's too heavy for you."] 4:11.18

Table 11.14E less A

Sherbet is less cold than this snow ice cream. [R thinks snow ice cream is colder.] 4:9.24

Table 11.14F A-est

Black is my *terrible*st color. 4:1.9

<table>
<thead>
<tr>
<th>R</th>
<th>I wish I was Jaime.</th>
</tr>
</thead>
<tbody>
<tr>
<td>M</td>
<td>Why?</td>
</tr>
<tr>
<td>R</td>
<td>'Cause Jaime gets to do the funnest than me.</td>
</tr>
<tr>
<td>R, M, J talking about Js tumbling class and R doing dancing class</td>
<td>4:1.24</td>
</tr>
<tr>
<td>R</td>
<td>Which finger do you think is the heaviest for this?</td>
</tr>
<tr>
<td>M</td>
<td>I don't know.</td>
</tr>
<tr>
<td>R</td>
<td>This finger.</td>
</tr>
<tr>
<td>R holding small piece of curled crayon paper in 1 hand, picks it up by inserting ring finger of other hand and lifting it w/it wrapped around finger: &quot;heavy&quot; = &quot;strong&quot;?] 4:2.18</td>
<td></td>
</tr>
</tbody>
</table>

I'll tell you what's my best Kool-Aid—pink. [F, M, J. and R talking about "Country Time" lemonade being like yellow Kool-Aid.] 4:4.27

Mommy, here's some paper unless you hear someone say the damnest. [R handing M pack of 3 X 5s. We call these utterances "the damnest things." R means "... in case you hear...:" 4:5.20 |

I like those best the same amount. [in book, it says to circle the box you think is the prettiest; R first circled 1 box, then decided she liked another just as much.] 4:5.30

I'll tell you which one of those toothbrushes are smallest. [R and J in bathroom.] 4:9.21

Whoever he's the quietest gets the prize. [R and J playing wrestling; M in audience.] 4:9.29

OK—here's the prizes for whoever he's the quietest. [R bringing prizes after wrestling match between R and J.] 4:9.29

(Don't let anybody see the prizes) until they be the quietest and we give it to 'em. 4:9.29

... give to the most best person that he's quietest. 4:9.29

<table>
<thead>
<tr>
<th>R</th>
<th>Wonder Woman is the best great of all.</th>
</tr>
</thead>
<tbody>
<tr>
<td>J</td>
<td>No, Green Goblin.</td>
</tr>
<tr>
<td>R</td>
<td>Green Goblin is the best great of all.</td>
</tr>
<tr>
<td>R and J playing wrestling; R is WW, J is C.G.</td>
<td>4:9.29</td>
</tr>
</tbody>
</table>

My pants are the wettest I have on. [R has just taken off long pants which got all wet from melting snow.] 4:10.10

Are red or yellow apples the juiciest? [R has just gotten red apple out for herself; M eating yellow apple.] 4:10.12

<table>
<thead>
<tr>
<th>R</th>
<th>Put those over there unless someone can't reach it.</th>
</tr>
</thead>
</table>
| R telling F to put cheerios in middle of table; F then read above out loud. | 4:10.14

| R | That isn't a damnest thing! 4:10.14 |
Table 11.14F (continued) A-est

I don't like anybody 'cept you the best. [R to M; R Maryland J and F] 4:10.15
The marvelous momma in the world. [R thinking out loud.] 4:10.18
What is your best book of mine? ["what book of mine is your favorite?"] 4:10.25
Purple is Nicole's favorite color—best color. 4:10.26
This one is the differentest I ever had. [R just got new purse in mail.] 4:10.27
The greatest world's mommy. [R being affectionate.] 4:11.0
I'll get you something unless somebody says some darnest things. [R handing M pad of paper.] 4:11.3
Daddy, here is my best part—"twenty one on none." [in book—21 people on no bike.] 4:11.4
That's my best song in the whole wide world. 4:11.14
R: That's my best thing.
M: That's your best thing?
R: Uhu. [= "yes"] ... I mean that's the [ɪ ə/ɪ] best thing. 4:11.19
Oh, that's my best part! [R in kitchen -- hears song on Sesame Street that she likes; then runs into living room to watch; song: "People in Your Neighborhood"] 5:0.11

Table 11.14G Double Marking: the most A-est

... give to the most best person that he's quietest. 4:9.29
I told you it would be the most funniest world's champion. [R and J playing wrestling.] 4:9.29
The most biggest one is that. [R pointing to biggest leaf on rubber plant; R, J, and F discussing its new leaves, etc.] 4:11.9
Here comes the most beautifullest thing. [M putting J's cover on his bed, as M makes bed.] 4:11.11

Table 11.14H ...in the (whole wide) world

A-est

The marvelous momma in the world. [R thinking out loud.] 4:10.18
That's my best song in the whole wide world. 4:11.14

A-est or other context:

I wish my tammy was empty of everything in the world. 4:8.28
I like both of you in the whole wide world. [R to F and M] 4:11.1

in the world ≠ the world's:

I told you it would be the most funniest world's champion. [R and J playing wrestling.] 4:9.29
The greatest world's mommy. [R being affectionate.] 4:11.0
[R is reporting to M a dream she had.]
R: (I dreamt about) the world's(s) stealer.
M: Does he steal the world, Rachel?
R: No, he steals everything he finds. 4:11.17

Table 11.14I too A/A enough

I was too strong to open it. I was strong enough to open it. 4:2.7
She [ref: R's doll] said she's sweating too hot. 4:10.27

Table 11.14J as A as

They're about as old as me—five. ["they're about the same age as me"; R pretending cheeryos are kids; R is four; M then asks R if she's five; R says "no, they are."] [not scalar; wrong direction on scale?] 4:11.11.
Except they're not as big as each other. [R, J, F saying that two girls down the street are twins, then above (the girls are not really twins).] 4:6.5
Table 11.14J (continued) as A as

As long as I move the table over here. [= “as soon as. . .”; R asked for milk; M told her to come in kitchen; R wants her table in living room] [cf. “long” for time?—as long as it takes me to. . .] 4:8.25

Maybe that’s as far as he can throw. [M found newspaper up by front door; paperboy usually throws paper onto front lawn, nearer street; M said boy put it by the door, then above.] [has wrong implicature—no further than that] 4:8.28

That’s about as warm—that’s about so warm that we could go to the lake. [R had called time and temp.; temp. is 64°] [means “warm enough”] [stops w/ as. . ., since she’d have to continue with as . . .?] 4:11.25

M: Are you as cold as I am, Rachel?
R: No, I’m colder, not as cold.
[re: chilly morning] 5:0.25

Table 11.14K that A

How could it be that little when it’s mommy’s. [F holding up R’s coat asked “Is this yours or is it mommy’s?” R means “. . .if it’s mommy’s.”] 4:11.3

[R asked M to open her bedroom door at bedtime, after M put R to sleep; M opened door a little, and R said:] I don’t mean that far. [R then got up and opened the door even more. Wrong direction on scale] 5:0.8

forth. This indicates that she is not using as . . . as strictly as a scalar predicate, with a direction from below upward on the scale, but more as indicating a point on a scale. And many of her utterances clearly lack the appropriate semantics that such a scalar understanding would entail. For example, on one occasion, I had found our newspaper up right by our front door, not where the paperboy usually threw our paper—onto the front lawn, nearer the street. I made a comment about the fact that the boy put our newspaper by the door, and Rachel says:

(55) Maybe that’s as far as he can throw. 4:8.28

This use of as . . . as is odd, because it does not carry the normal implicature “up to that point and no further.” Rachel seems to be saying “Maybe he can throw that distance.”

The same can be said for her uses of that A at the same time (see Table 11.14K). She uses not that far, for example, to mean “not that distance,” lacking the scalar encoding of movement up the scale. Thus, her statement at 5:0.8, when she chides me for the amount that I have left her bedroom door open, does not carry the appropriate implicature, and entails the wrong direction on the scale:

(56) [R asked M to open her bedroom door at bedtime, after M put R to sleep; M opened door a little, and R said:] I don’t mean that far.
[R then got up and opened the door even more.] 5:0.8
Finally, it is of note that Rachel’s uses of *as...as*, like Sadie’s at an earlier age, invariably have both the appropriate degree marker and the standard marker, linked from the start (more on this below).

These developments with adjectives reveal the following advances during this period:

- First, R’s use of the comparative appears to be semantically correct by age 4.
- R’s use of the superlative appears to be semantically correct by this same age.
- R’s realization that the simple -er comparative is linked with the standard marker then appears to be solidified by this period.
- R’s formation of the simple -est superlative, however, appears to be in a protracted period of transition during which she has not settled on the correct degree marker, alternating -est with best, and using the and my. She also uses in the (whole wide) world as the dominant standard of comparison, and she has a period during which this phrase alternates with preadjective world’s.
- In addition to these developments within simple comparative and superlative forms, Rachel begins during this time to use how with spatial adjectives, sometimes to encode INTENSIFICATION, and sometimes apparently with a scalar sense. She also uses A enough in an appropriate sense.
- Finally, she begins using the scalar modifier *as...as*, but semantically, it appears to mean “the same ... as,” rather than to be strictly scalar. That is, the interpretation has to do with a more punctual assessment of the degree of presence of a property, and to lack a scalar interpretation of asserting a lower limit, moving from low on the scale upwards. The use of these forms, thus, lacks in many cases the appropriate semantics and implicature for these expressions.

Quantifiers

**Q**: There are very few cases of isolated quantifiers in the data, as most quantifiers during this period are used in combination with other modifiers (see Table 11.15A).

**Q + more**: In the previous periods, Rachel used *any more* and *no more*; here she adds other quantifiers preceding *more: three more, a lot more* (see Table 11.15B).

**X/Deg? + much (many)**: Rachel also was already using *too much* and *that much*, and she continues to do so, and she adds other modifiers to the repertoire preceding *much* (and occasionally *many*: so, how, as (see Table 11.15C).

As *much/many* (as) is of particular note: At the same time as Rachel begins using *as...as* with adjectives, Rachel begins using *as...(as)* with *much* and *many*, indicating a shared syntactic/semantic source. Examples are given in Table 11.15D. While the adjectival forms showed a link between the use of both the degree marker and the standard marker *as* from 4:4, the quantifier forms show consistent use of both markers from just before 4:10. She corrects herself at 4:9.30 from “get
as many glasses out you want” to “get as many glasses out as you want.” This may be one case in which there is evidence of transferring what has been learned in one domain (as...as with As) to another domain (as...as with Qs).

With regard to semantic content, many of these utterances, just as those for as A as and that A, still reveal an immature understanding of the scalar semantics associated with these forms. For example, Rachel uses that much for the wrong direction on the scale at 4:10.25:

(57) How come you have that much and I don’t? [to F, who had almost finished his bowl of cereal; R had just started hers.] 4:10.25

At the same time, she shows, as Sadie did, an emergent association of scalability with number, as in:

(58) You know how many times I love you? I love you one hundred times. 4:10.7

[R comparing amount she’s sweating and amount she’s tired:]
I’m sweating three times, and I’m tired two times. 4:11.25

[i.e., sweating at a value of 3 and tired at a value of 2,] 4:11.25

Interestingly, the adult form in the first of the utterances in (58) would have used how much. Utterances in, for example, Table 11.15C make it clear that Rachel still does not respect the mass/count distinction for much and many, usually overusing much where many should be used. But Rachel’s choice of many in this utterance, which was previously associated with numbers connected with age, and her association of the magnitude of her feeling with a (high) number (...one hundred times), is consistent with Sadie’s association of scalability with numbers, as in the examples in Table 11.15H. We will see more of this in Rachel’s data for 5:0 to 6:0 below.

X + A-er: Around 4:6, Rachel begins placing modifiers in front of A-er: This includes even, enough, more, so, much, very, and how. Initially, there is one occurrence of too much A-er alternating with much too A-er (see Table 11.15E). There are several important aspects concerning these structures:

- All of the modifiers are placed before A-er, even enough: enough closer.
- They seem to emerge fairly co-temporarily, indicating a probable comparable construction governing them. That is, there is no evidence for any difference in Rachel’s composing of, for example, much + A-er and that of how + A-er, even + A-er, so + A-er, very + A-er.
- This is despite the fact that she has had for some time already in her speech forms like too much and that much. So, the potential to form expressions such as too much bigger and that much bigger was clearly available in her repertoire, but the fact that she did not produce such combinations supports the likelihood that she had a simple rule at this time of concatenation: X + A-er.
- And, finally, the elements that fall into the category of pre-A-er options include more. These are the first occurrences of double marking of the
TABLE 11.15  Quantifiers Rachel 4;0-5;0

Table 11.15A  Q

a lot
A row of O’s. When there’s a lot of O’s, you can call it a “row of O’s.” [R seeing “92,000,000” in phone book.] 4.1.10

more
Ann’s came more than Janet. [i.e., as babysitter; R says she said “Ann” not “Ann’s.”] 5;0.5

most
R:  There’s most girl babies than boy babies.
M:  What?
R:  There’s most girl babies in the world than boy babies.
[needs “more,” not “most”] 4.11.25

Table 11.15B  X + more

We better be (finished) hanging all our stuff for Halloween until it’s three more days. 4.6.14
I need a lot more bites … more than eleven,… to do all of it. [M told R to eat 11 more bites of her supper; she at first said that would be all the rest of the food.] 4.7.1

Table 11.15C  X + much/many

I can hold this much in one blow. [R holding bunch of cookie cutters—“at one time”; J and R picked up “in one blow” from “Seven at a Blow.”] 4.2.8
Look how much shells you got. [R to F; F eating nuts, putting shells on plate.] 4.8.4
Mommy, look how much checkers I got. [R w/ checker game, collected lots of checkers by jumping; R playing w/ herself.] 4.8.11
They have so much colors. They have so much colors from the paint. [R looking at tree ornaments she made and painted at school.] 4.8.20
Mommy, now there’s so much people. [in auditorium, waiting for show] 4.8.25
Look how much E’s I got. [R playing Scrabble (Juniors).] 4.8.26
You’re gonna have to put it on unless I put too much. [solt on zucchini; “in case I (would) put too much.”] 4.8.28
It [re: house] has so much windows. 4.9.1
First I gotta count how much there are. [R wants to count beads on necklace.] 4.9.28
Let me see how much necklaces I have. I have one, two, three, four—[R thinking of the necklaces she has.] 4.9.29
Mommy, do you know how much you should give me? [M tearing pieces of tape off roll for R to use; R goes to see how many she needs] 4.9.30
You know how many times I love you? I love you one hundred times. 4.10.7
I wanna see how much things—no, how much pieces…[R cutting cheese into pieces.] 4.10.8
…cause I drank so much things and ate so much things. [That’s why R has to go potty.] 4.10.23
How come you have that much and I don’t? [to F, who had almost finished his bowl of cereal; R had just started hers.] [wrong direction on scale] 4.10.25
You cut this part of my bangs too much [= “too short”]. 4.11.20
I’m not so hungry for soup—soup is too much. [R wanting cracker for snack, not hungry enough for soup she left from lunch.] 5;0.20

Table 11.15D  as + much/many (+ as)

That’s as much I took. [I putting ketchup on his plate— as much as R took.] 4.6.27
Can I taste as many cookies I want? [re: Xmas cookies.] 4.8.4
Daddy, get as many glasses out you want. [F did not understand and R repeated;] Daddy, get as many glasses out as you want. 4.9.30
You can have as many pieces as you want. [R offered F some of apple she has cut up.] 4.10.12
That’s as much I could only get out. [R getting grapefruit out of skin—having a hard time; “I could only get out that little” R showing M how little there is in bowl, wrong direction on scale, problem of scope?] 4.11.25
Table 11.15D (continued) as + much/many (+ as)

| F: | They're as much Henderson's and mine as anybody else's. |
| R: | Much Henderson's! There's only one Henderson. |

[misunderstood "as much...as"; also, her link of much with Henderson reveals lack of respect of mass/count distributional restrictions—much + singular] 5:0:26

[R says she wants to give M...] 5:0:27

As many hugs and kisses you are ... as many years old you are. [R was going to say "as many hugs and kisses you are old," but then put in "...as" and got convoluted] 5:0:27

Table 11.15E X + A-er

Angie's much too bigger than me. I'll tell you who's too much bigger than me. You're much too bigger than me. 4:6:10

Why didn't you get enough closer to the door? [R asking M why M didn't answer R knocking on front door; M told R that M didn't hear her knocking.] 4:6:16

R: I did it even bigger than that.
M: I know, and I want you to do it smaller.
R: I mean I did it little.

[R picking up glob of cranberry liltter than F said she had.] 4:7:20

That chair's more funner than any other chair. [first double marking, AFTER other X + A-er forms] 4:8:2

This feels more better up here. [R feeling velvet on top part of chair.] 4:8:25

Yea, because I was so busy. Except I'm gonna be so busier this time. [I wants to lie in M's bed w/ M, then told R she could, since she hadn't done it the last time.] 4:9:0

There, I made the hole much bigger. [R made opening to cheerios package bigger.] 4:10:20

M: Why don't you use one of your purses for your crayons?
R: No, I have a very better idea.

[R collecting up crayons; R then goes to get one of her dishes to put crayons in.] 4:11:3

R: Look how bigger the ladder is from you.
M: What?
R: Look how big the ladder is from you.

[R and M in back yard; ladder taller than M.] 4:11:4

Ronald McDonald is littler than Saasha—very littler. [R,MeD. hand puppet.] 4:11:6

Scoot the chair more farther. [R wants M to scoot chair closer to cabinet so she can reach can opener; R on chair.] 4:11:19

Hail! That would be even badder than hard snow. [i.e., if it fell on umbrella.] 5:0:29

Table 11.15F even/much more A-er

I have something that's even more better. [To J:] and R playing in B's room.] 4:10:15

I'll have to get much more bigger before I can wear his yellow raincoat. [i.e., J's raincoat.] 4:10:25

I'll have to grow much more bigger until I can wear this. 4:10:25

The kid's much more older than the baby. [R said she's going to take her kid for a ride; F asked her if the kid was the same as her baby, which R had previously said had died today.] 4:10:26

I'm much more bigger than my door. 4:11:15

This is even more better than D.Q. [R eating ice cream cone from supermarket; D.Q. = Dairy Queen.] 5:0:27

A snake would be much more bigger than that was. [re Play-Do mold for a worm; R couldn't remember if it was a worm or a snake, decided it was a worm.] 5:0:28
comparative in Rachel’s speech. It is not clear if there is any possibility that more A-er forms prompted her to expand to a larger rule of X + A-er, or whether more A-er simply fell into line along with other X + A-er constructs. The timing of the emergence of more A-er; however, suggests that it is simply one type of the X + A-er constructs, as the first examples of doubly marked comparatives appeared about two months after the first X + A-er constructions.

- The conclusion that the doubly marked comparatives grew, at least in part, out of the availability of X + A-er constructs is supported with the subsequent development of these constructs, below, as well as the timing of the doubly marked superlative constructs, which emerged approximately two months after the doubly marked comparative forms. Thus, X + A-er forms emerged around 4:6, doubly marked comparatives emerged around 4:8 (possibly as a development of the X-A-er forms), and doubly marked superlatives emerged around 4:10 (Table 11.14G).

**even/much more A-er:** About half a month after the emergence of doubly marked superlatives, and after the X + A-er forms had been in Rachel’s speech for about four months, she began to produce constructs of the form even/much more A-er (Table 11.15F). There are a number of important aspects of these structures:

- First, the initial modifier always occurs with more A-er; never simply A-er, and never with any of the other X + A-er forms in Rachel’s speech (e.g., never much so bigger, much very bigger, etc.).
- Second, the initial modifiers in evidence were only even and much. Again, while Rachel clearly had forms like too much and that much in her repertoire, she did not produce forms like how much better, that much closer, too much bigger, or even that much more bigger.

**More Elaborated Structures** There is also evidence during this time that Rachel begins to develop longer structures involving these forms:

**Standard of comparison:** First, as we have seen, Rachel appears to have established prior to this age that when the standard of comparison is expressed with
the comparative, than is used. With as, she seems to link the degree marker as from the beginning of its use with the standard marker as. Moreover, she seems to conclude by 4:10 that the standard of comparison is required in such as...as constructs. At 4:9.30, she corrects her own utterance from one without the standard marker to one with the standard marker as. Interestingly, it is at exactly this same time that Rachel corrects her (older) brother’s use of a comparative without a standard of comparison:

(59) J: I like ‘em better.
R: He said “I like ‘em better.” [as if “catching” a mistake]
F: What’s he supposed to say?
R: I like ‘em **better than** that. 4;11.7

If indeed she did conclude that the standard marker as (or by extension, than) was required, this would be a case of a child drawing up a structure on the basis of positive evidence only. Recall from the examination of the written texts and of Abe’s corpora that there is a probable high frequency of co-occurrence between degree marker as and standard marker as in input to children.

**Nominal heads:** It is at this time that we also see attempts at constructing more elaborate structures, and Rachel’s attempts help highlight some important issues these present.

First, we begin to see problems with constructs that include a nominal head— for example,

(60) Look **how big** Daddy gave me a **bowl**. Look **how big of a bowl** Daddy gave me. 4;11.12

The appearance of such structures and a closer examination of all of the utterances up to this point reveal a striking fact: Prior to 4;11, the only constructs involving elaborated adjectival forms modifying noun heads are of two types:

First, there are a few forms that would be considered outside of the system in question in the adult language and are often immature sounding:

- Reduplicated forms, such as “There’s a **big, big, big, long** dinosaur.” [R, 4;6.7]
- Forms with **really**, when these mean “authentic,” such as in (61), and forms in which **very** is used to mean “absolute,” such as in (62).

(61) I’m not a **really monster**. 2;10.15
M: They don’t like babies at my school.
R: Unless they’re **real ones** that belong to mommies and daddies.
[R asking M if M will take her doll baby to university.] 4:10.8

(62) R: The **very next top drawer**. I mean, the **very third drawer**.
[R telling M that she found rope lighter in 3rd from top drawer in kitchen] 4;6.24
The second and only other type of structure in which Rachel uses adjectival forms with noun heads prior to 4;11 is superlative structures, such as the following:

(63) Look what sharpest knife this is. It's the sharpest knife in the whole wide world. 3;8.4

M: What did you see at the museum, Rachel?
R: The biggest dinosaur that we never ever saw. [R, J, and F just got back from natural history museum.] 3;11.4

Black is my terriblest color. 4;1.0

I'll tell you what's my best Kool Aid—pink. [F, M, J, R talking about “Country Time” lemonade being like yellow Kool-Aid.] 4;4.27

...give to the most best person that he's quietest. 4;9.29

The marvelloust mommy in the world. [R thinking out loud.] 4;10.18

What is your best book of mine? [ = “What book of mine is your favorite?”] 4;10.25

As we've already noted, Rachel vacillates in such forms in her choice of determiner, mostly between the and a possessive form. And even in such superlative structures, a noun is sometimes curiously missing:

(64) Mommy, here's some paper unless you hear someone say the darnnest. [R handing M pack of 3 x 5's. We always call these utterances “the darnnest things.”] 4;8.26

My pants are the wettest I have on. [R has just taken off long pants which got all wet from melting snow. 4;10.10

The first of these is especially odd, since in the family we always referred to these expressions as “the darnnest things” (from the old Art Linkletter TV program, on which he had a segment called “Kids Say the Darndest Things” in which he interviewed young children).

Beyond these two types of structures, for all other structures in which elaborated adjectival forms (i.e., other than simple adjectives) occurred, virtually not a single utterance before 4;11 allowed the adjectival form to occur with a nominal head. This includes utterances involving A-er, too A, so A, really A (for intensification), pretty A, how A, and X + A-er.

I say “virtually” because at the earliest uses of A-er, in the first half of the year when Rachel was 3, she did use A-er forms with nominal heads, as in:
(65) Hey! I got two prettier shirts! [R has taken one of her favorite shirts out of her drawer to put it on. When asked about “two” R referred to a shirt that she wore home from school, after getting her other clothes wet at school.] 3;6.23

Two big ones. Two bigger ones. Two big ones. [R asking to have crackers after supper; none in sight.] 3;6.29

I don’t get better gloves, but you do. [As M gets out R’s and M’s gloves. When questioned, R asserts that M’s are black, makes no reference to her own.] 3;7

M: That dress is too big.
R: I’ll get a littler one. [“little” “littler” “very little”]
[M dressing R.] 3;1.28

It may be highly significant that, as noted above, at this early stage Rachel seems to be using these forms semantically as noncomparative forms, almost like alternants of simple A forms.

Then at 4;11, we begin to see uses of these comparative forms with noun heads:

(66) (Do you know why I got back here?) Because it’s the warmer place.  
[R behind sofa.] 4;10.27

M: Why don’t you use one of your purses for your crayons?
R: No, I have a very better idea.
[R collecting up crayons; R then goes to get one of her dishes to put crayons in.] 4;11.3

This can’t be coffee ‘cause it tastes so good—how’d they take the better taste—the best taste out. [R singing commercial; real words: “How’d they take the bitter taste out?”] 4;11.9

And it is at exactly this same time that we see Rachel’s self-correction from using a possessive determiner for a superlative form to using the definite determiner the:

(67) R: That’s my best thing.
M: That’s your best thing?
R: Uhu. [= yes]...I mean that’s the /best/ best thing. 4;11.19

These developments are highly suggestive that it is not until this time that Rachel begins to construct the more complex phrase structure patterns that will allow for adjectival forms involving degree-marked adjectives within nominal phrases. Whether the late establishment of more complex syntactic structures of this type is due to the fact that the emergence of such constructs is contingent on the prior working out of simpler syntactic details (e.g., the appropriate degree and
standard markers, co-occurrence patterns) or is related to the relatively infrequent occurrence of such forms in the input (as judged by the Abe corpora—only 2 out of 57 utterances had comparatives with nominal heads—see the introduction) is a question that will have to await further study.

_Clausal Complements:_ It is also at the end of this period that we see Rachel begin to attempt complex clausal complements of these structures, such as the following:

(68) [R says she wants to give M...]  
**as many hugs and kisses** you are...**as many years old** you are.  
[appears she was going to say “as many hugs and kisses you are old,” but then put in “...as” and got convoluted] 5:0.27

There has to be **as many people**... [R hesitates and says she does not know how to say it; then:]  
There has to be **as many people**...um...**that as many words** there are.  
5:2.15

It may well be that she has been “pushed” into working out these structures, at least in part, as a consequence of her conclusion that the standard of comparison in **as...as** structures must be explicit.

_**Interpretation of Scalar Forms:**_ As noted, Rachel continues to show immature understanding of scalarity in her uses of **as much** and **that much**. And we similarly see continued misuse of scalar temporal forms like **until,** as in the following (see Table 11.15C):

(69) I’m [ = /*ain*/] just gonna get one out **until** I’m [ = /*ain*/] done eatin’ this one. [R getting nut out of bowl and setting it on table to wait till she’s done eating the one she’s just started; that is, “...for when...”] 4:8.5

Again, she seems to use **until** as if it means “for when,” not as encoding position on a temporal scale viewed from below upward.

**Summary, Subsequent Advances, Rachel**

This period seems to be an important period in Rachel’s development of these forms. There are significant advances concerning the semantics of the forms, as well as in their syntactic form.

**Semantics** First, from the beginning of this period, we have confirmation of Rachel’s correct semantic interpretation prior to 4:0 for both the comparative and the superlative. She no longer uses either of them to mean “X” or “very X.”

She also begins to use **too, enough, how,** and **as,** sometimes for emergent encoding of scalarity. **How,** previously used only in **how old** and **how many,** both in relation to age, is now associated with other spatial adjectives and with **much**. However, her understanding/encoding of scalarity is immature during this period,
showing no evidence of an understanding that scalar predicates involve an assertion concerning upward values on a scale.

Finally, many, previously linked with age (and, therefore, number) appears more broadly linked with number here, as in her utterance: "You know how many times I love you? I love you one hundred times." 4:10:7

**Syntax**  The syntactic developments during this period appear equally significant. First, her knowledge that X-er requires than as a standard marker, along with her association from the beginning of degree marker as with the standard marker as, are important advances. These long-distance links, and especially her evident conclusion that the standard of comparison is required, especially with as, may be responsible for prompting her to pay attention to complement clauses and to attempt longer structures involving clausal complements.

At the same time, she is still unsure of the expression of the standard of comparison for superlatives, and is not even sure of its placement pre- or postadjectively: "the...in the world" vs. "the world's...". It is possible that the preadjectival uses were promoted by expressions such as "world champion boxer."

(70) I told you it would be the most funniest world's champion. [R and J playing wrestling.] 4:9:29

Two other very important developments took place during this period: One was the introduction, fairly early in this period, of modifiers before A-er constructs: too, so, very, how, even, much, and more. Notably, many of these—but, crucially, not all of them—had already been used before much in Rachel's speech: too, so, very, how—but not even, much, more. This suggests that, even though Rachel had developed constructs allowing X + much in her speech, this development of X + A-er was not exactly the same development or a straightforward outgrowth from it. However, both of them constitute significant steps in the formation of syntactic constructs governing the formation of degree-marking and multiply modified structures—Deg modification of much and many, and Deg/Q modification (albeit incorrectly formed) of modified adjectival forms (albeit only A-er). The latter also allowed for the introduction of more into A-er constructs, resulting in the first doubly marked comparative forms, and, by extension, the first association of more with adjectives.

A second important development that occurred somewhat later in this period (around 4:11) was the introduction of modified adjectival phrases into nominal constructs. Prior to this period, these had largely occurred as free-standing adjectival phrases, except in the case of superlative constructs.

Finally, near the very end of this period, we see Rachel's initial attempts at expressing much more complex constructs involving clausal standards of comparison. However, her attempts are largely unsuccessful.

**Even Greater Advances: 5:0–6:0**

During the next year, we see expansion of these developments, as well as some important developments in new directions.
Continuation of Forms Already In Evidence  First we see continued use of forms already in evidence. These include modification of *As* with *very, really, so,* and reduplication for **intensification** (see Table 11.16A). Rachel also continues using *very* for “absolute,” *really* for “authentic,” *too A, A enough, as A as, this A, how A, A-er, and A-est* (see Table 11.16B). Note that overextensions of -er and -est continue [*beautifier (5;8:22), nakeder (6;4:21), goodest (5;3), favoritest (5;5), maredloulest (5;5), beautifulest (5;6), speciallest (5;7)],[ as do doubly marked superlatives [*the most strongest (5;1), the most prettiest (5;2), the most beautifulest (5;2)]*. She also continues to use forms such as *any/seven + more, X (this, that, so, very, too, as, how) + much, X (how, more, even) + A-er* (see Table 11.16C). There is also continued prolific use of *much more A-er* (Table 11.16D).

And we see expanded attempts at constructing structures with modified adjectives in structures with nominal heads, shown in Table 11.16E. Many of these attempts result in non-adult-like forms, revealing their immature status in Rachel’s system: *the closest one sitting to her* for “the one sitting closest to her,” *a too big hand* for “too big a hand,” *so greasy of meat* for “such greasy meat.” It is of note that *such* emerges at this time, and Rachel seems to struggle regarding the placement of articles relative to these modifiers and nouns and regarding the choice between *so* and *such* (“It’s such yukky under there”).27 Her utterance involving “peace and quiet” highlights the difficulty of the choice: It is not only a case of word order (*such a long beard vs. so long a beard; what a long beard vs. how long a beard*), but also a problem of identifying the word class (adjective or noun) of the modified word (*so quiet, so peaceful, but such peace* (and, in fact, *such quiet* is possible)).

(71) R: It’s **so quiet, mommy; it’s so peace and quiet**, isn’t it? Isn’t it?
M: What?
R: It’s **so peace and quiet**.
[re: J has just turned off the television.] 5;7.3

Similarly, attempts at constructing structures in which the standard of comparison is expressed through a clausal complement continue to pose difficulties (see Table 11.16 F).

**Some Further Developments**

**Semantics** During this period, Rachel shows great attention and attempts at encoding negation and references to negative ends of scales. But her attempts show she was clearly struggling: For negative comparative and superlative adjectives, she

27 Similar errors occurred in Sadie’s speech in the year following those examined here for her:

(xx) “Why do you have **such big of a cape**, Batman?” said Robin. [Sadie making up a Batman and Robin puppet show] (Sadie 4;10.8)
TABLE 11.16  Rachel 5;0–6;0, Continued Development of Forms Already in Evidence

Table 11.16A  A Modification for INTENSIFICATION

very
You can’t see the steam very well because it looks so much like the air.  5:5.26

really)
I should’ve gave you the flourescent crayons. They’re really neat.  [R had given M regular box of crayons.]  6:0.14
But it was real low, so I couldn’t reach. Was their pool lower than the Municipal Pool?  [R remembering when she went to the Bowermans’ pool last summer; their pool has no shallow water; low = “deep?”]  6:1.15
People would think it was real real hot for the winter, to be the winter [re: 60 degrees in winter; i.e., if this were the winter].  6:4.1

so
I can’t carry ’em so heavy.  [M has asked R to take 3 pillows at school back to place where they belong; R trying to carry them, finding it a little difficult.]  5:1.29
R:  It’s the only thing I painted so long.  [R going to get a picture she painted.]
[later:]
M:  What does this mean, what you said before, “It’s the only thing I painted so long”?  5:4.8
R:  So far, I said so far.  5:4.8
It’s been so soft that I haven’t even been knowing that it was there.  [R has sore on heel.]  5:4.15
Mommy, that was so fun playing ....  5:4.17
R:  It’s so quiet, mommy; it’s so peace and quiet, isn’t it? Isn’t it?
M:  What [w/ rising intonation—i.e., I didn’t hear you]?
R:  It’s so peace and quiet.  
[re: J has just turned off the television.]  5:7.3

Reduplication:
The stars are tiny tiny tiny. But the balloon got tinier than the stars. The balloon got tiny until it disappeared.  [re: a helium balloon that escaped.]  5:3.21

Table 11.16B  Use of Modifiers Beyond INTENSIFICATION

very for “absolute”
You can do it in your very own yard if you want.  [re: camping.—M had mentioned that you can’t camp in public parks.]  5:2.4

really) for “authentic,” “true/truly”
A real witch would be much more bigger than that was.  [re: puppet witch in Hansel and Gretel show.]  5:5.25
I think I’ll just cut it unless he really wants to see.  [F asked R to show him her preschool’s way of cutting bananas; F changed his mind; then R decided to cut it anyway; unless = “in case.”]  5:6.10

too A
Not too much, not too small, not too much. Not too much, not too little, not too much.  [R singing made-up song.]  5:1.4
Oh, oh, we’ve waited too long.  [R holding R’s pants up to F; joking that “F’s grown too big.”]  5:5.8

A enough
They’re pretty for the secret club; they’re pretty enough for the secret club.  [R about to put mudholes on to go play: correct use?]  5:2.22
Table 11.16B  (continued) Use of Modifiers Beyond INTENSIFICATION

The Osh-Kosh B'Gosh ones are cool enough for a day like today. [R dressing for a hot day; Osh-Kosh B'Gosh pants have been turned into shorts, and will be cool. right direction on scale] 5.2.1
Do you think this hole is small enough for this? [context?] 5.7.28
R: They're biggest.
F: What do you mean?
R: They're all big. They're big enough to sew.
[F had told R that some pants that were torn should be thrown out rather than fixed; pants are R's; R means they still fit her, so why not fix them.] 6.1.17

as...as

R: Do you know how high he made the motorcycle jump?
M: No.
R: As high as birds fly.
[re: acrobat on TV circuit] 5.1.28
R: I'm not gonna go as far as I can't reach.
M: You mean reach the bottom?
R: I'm not gonna go farther than I can't reach.
[re: swimming; R won't go in water that's too deep. means "I'm not gonna go farther than where I can reach/so far that I can't reach the bottom"] 5.2.19

Ice and ice-cream are both as cold as each other. 5.3.3
Five is just as old as I am. [pointing to five leaves on a plant she had drawn] 5.5.14
Are you as tired—Are you as waked up as I am? 5.6.1
On the box it says "makes you clean as fun as getting dirty." On the box it says "helps you get clean as fun as getting dirty." [re: box of bubble bath; really says "Makes getting clean almost as much fun as getting dirty."] 5.7.19
He's almost tall as the ceiling. [R telling friend T about adult, A]. [first use of "as...as" without first "as"] 5.8.2

how A

R: How long is a week till we next go to school? [Today is Saturday.]
F: I have a question for you. How long is a piece of string?
R: They're all a different size. 5.5.14
It's not thick; it's fat! See how fat it is? [R protested when F said the slice of cheese on her cracker was thick.] 5.8.30

A-er

England is farther than Chicago. 5.1.21
Ultra Brito toothpaste is better than any other toothpaste in the world. [R had seen ad for Crest or some toothpaste on TV. went to bathroom, saw we had U.B. there.] 5.1.28
Baby cats get tireder than the daddy cats. 5.2.26
They look oranger when they're cooked. [re: baked beans; R had said she likes them better uncooked.] 5.3.0
The stars are tiny tiny tiny. But the balloon got tinier than the stars. The balloon got tiny until it disappeared. [re: a helium balloon that escaped] 5.3.21
I should have did the "e" littler. [re: R doesn't have room on card for "r" of "Jennifer."] 5.4.5
R: See, at least that's littler than the others.
M: It is?
R: Yea—bigger.
[re: large brown bowl; M had asked R to find a big brown bowl for salad.] 5.4.26
Table 11.16B  (continued) Use of Modifiers Beyond INTENSIFICATION

And I might even get the thing lower. [re: tomorrow R might get hole in sand, in tire hole, deeper.] 5:6.10

R: Nobody likes ’em better!
M: Than you?
R: Than anyone!

[I had said he probably likes the cupcakes he and R are eating “better” because he ate his fast and R’s still eating hers; J obviously means “better than R,” but R doesn’t react as if this is what he meant.] 5:6.12

No, out there’s the better [R pointing to front yard], [re: Out front is better than back yard for Secret Club; M had suggested using back yard.] 5:6.20

R: You’re bigger.
F: Bigger than what?
R: Bigger. Big of all.

[R talking in sleep.] 5:7.2

R: Stephanie was the prettier than Mary.
M: What?
R: Stephanie was the prettier than Mary. 5:7.15

The pointier it gets, the bigger it gets. [re: candy cane, as she licks it. 5:8.11

beautifuler. 5:8.22

A-est

That’s my best one. That’s the best one. That’s the one I like best. [re: board game; Peanut Butter and Jelly game; R correcting self from “my best....” to “the best....]” 5:1.15

Do you wanna know who swam the best out of Matthew and Blake? 5:2.8

I get the special spoon....well, this is the special est because .... [re: pretty little baby spoon]. 5:3.23

You wanna see the good est one I made? [re: R has made some “prints” with a toy “printer” and ink pad] 5:3.27

Who’s your favoritest clown?... Ronald, Ronald McDonald. [R singing; repeats many times.] 5:5.6

R: Who’s the marveloust cat in the world?
M: What? [not knowing if there’s a /v/ at end]
[R repeats above 2 times].

M: What?
R: Who’s the best (marveloust) cat in the world?
[M asks R to say it slowly].

[R says slowly 3 times, last time:] 5:5.17

They were both funny, except one was the funnest. [The librarian read 2 stories to the kids at the library at school today.] 5:5.28

Mommy, choose your nicest picture. You choose just ten nicest pictures. [R laying all the pictures she has drawn down on the floor.] 5:6.0

I don’t like yickly Kleenexes on my beautifulest puzzle in the world...which is that, which that is. [R has just handed 2 Kleenexes to M; R cleaning R’s room; Kleenexes had been on R’s puzzle.] 5:6.14
Table 11.16B  (continued) Use of Modifiers Beyond INTENSIFICATION

That was my favoritest Halloween thing. [re: witch dress that M has just taken out of wash.] 5:7.1
... your specialiest day on Christmas. You’re the only one who has a specialdest, specialdest,
  specialdest day on Christmas. [to M, whose b-day is on Xmas.] 5:7.18

The marvelous mommee in the world. 5:10.18

Which is the littlest? [re: two pieces of pizza on supper table] 5:11.4

It is the best number. [Of 11 and 19; R has just said that in TV book it says Ses. St. is on 11 and 19;
  R about to turn on TV] 5:11.19

I get the tallest one. [re: of two candles] 5:11.27

Double Marking: most ...est

[R and M playing; R in blue]
M: [pretending to be a witch:] I like girls with dark blue clothes on, ‘cause they’re the most
delicious.
R: They’re the most strongest. [R pulling M off chair.] 5:1.9

When I pat your hand, it means you’re the most prettiest girl in the world. 5:2.30
When I lick your hand, it means you’re the most beautifullest girl—lady in the whole wide world.
  5:2.30

Table 11.16C  Continued Use of Q Forms

a lot

M: Remember those ducks at Sunshine Acres [= name of school]?
[R nods, and eyes get big]
R: They’ve grown up a lot so they had to take ’em to the teacher’s farm....
[R had been acting like a duck; R hasn’t been to S.A. for about 1½ months.] 5:1.30

more

I like to look down more than I like to look up—I mean sideways. 5:2.4
If daddy haven’t come out—if daddy didn’t come out, I could have been the waiter more. 5:2.10
Nobody can take more than that! Unless they have a bigger glass. [re: amount of liquid R has
  poured into her glass] 5:3.1

a little bit

Every time I drink a little bit of milk my ear has a funny feel. 5:9.23

most

I want all colors and most pinks. I want most strawberry. [re: Neopolitan ice cream:
  “...mostly...”] 5:3.23
You’re the most writer-downer. [to M, re: writing down “darndest things”]. 5:3.25
R: I love you, daddy, but I love mommy most.
M: Most of who?
R: You and daddy. 5:6.38

X + more

My pants are choking me. [i.e., they are “too tight” around waist.] Just so it doesn’t choke me any
  more. [as M opens button to take pants off.] 5:4.17
Table 11.16C  (continued) Continued Use of Q Forms

**Number + more**

How much do I need? Seven more? [re: bites] 5:4.29

**X + much**

**this much**

It makes it be more weight with this much people in it. [re: car's weight w/ 8 people in it: note: not "heavier"] 5:1.18

I don't think I can take much sugar on this much cereal. [R has very little cereal in bowl; first "not...much" OK; second "this much"—this amount—wrong direction; should be "this little"] 5:2.24

Do you wanna see how much pictures I've made? [M nods. R goes to get pile of pictures.] This much. Do you want to see what they all are? 5:4.24

**that much**

That's too much. It won't take that much. [R had asked M how many bites she had left to eat; M said 9, then above; R thinks there isn't enough food for 9 bites.] 5:2.2

I was waiting about that much. I was waiting that much. [R holding arms apart-i.e., "that long"; R waited for M at Community Building after art class.] 6:0.14

Why would the stars he out when the sun is that [much/far/high] up? 6:2.19

But you could never get that much logs! [re: 30 logs for building a sandbox] 6:3.27

**so much**

If you didn’t give me so much noodles... [i.e., "I wish you hadn't given me so many noodles"] 5:1.30

R: Maybe you should have gave me less strawberries, ‘cause with so much strawberries... I would take a longer time to finish eating...strawberries.

M: Longer than what?

R: Longer than I would have to sit up at the table than, ...I don't know. 5:2.3

Mommy, how come I have to hold so much things? Two in each hand? [R holding 2 cleaning tools in each hand.] 5:3.8

There's not so much people in the lake this time, 'cause it's not such a cold day. [re: cheerios in bowl of cereal. R pretending they are people in a lake; "...cause it is such a cold day?" ] 5:3.9

People are giving me so much favors. [i.e., asking her to do so many favors; J and M asking R to get toy men for swimming pool and book off floor, respectively.] 5:4.2

Do you know why I'm using so much things? [R playing with all her blocks and prickle sticks.] 5:4.2

There's so much Jeff's! [R has just read that book R and M are going to read is by Jeffrey--; R comments on Daddy (Geoff) and Jeff at school.] 5:5.12

How come it's freezing so much? [re: frozen bread "how come... so frozen"] 5:5.16

You can't see the steam very well because it looks so much like the air. 5:5.26

There's so much nice things in here. [re: in bowl of Halloween candy.] 5:6.19

(One day I forgot to get the things out of my mailbox at Kindergarten and Raintree) and today I got so much things. [I has marveled at how many things R has brought home from school today; asked R where she got so much work.] 5:7.3

That's not so much words as him. 5:7.13

I haven't got so much left that I can't—that I can hardly get it. [re: little amount of cereal left; = "I've got so little left ..."] 5:10.7

Look at all those toys. You never saw so much toys at Grandma's house! 6:5.14

**very much**

I've certainly not seen very much cats around. 5:6.25
Table 11.16C  (continued) Continued Use of Q Forms

R: Look, there's not very much left. [re: number of balloons in bag to blow up for party] 5:8.23
F: Many.
R: I can say “much” if I want. 5:8.23

**too much**

Not too much, not too small, not too much. Not too much, not too little, not too much. [R singing made-up song] 5:1.4

R: Too many windows are open.
F: There's only two open [or so].
R: I know. That's too much! 5:1.6

**Too much** [R had asked M how many bites were left on R's plate for R to eat; M held up 4 fingers for number of bites left; R said “much” for 4 and 3, agreed that she would need 2 more bites to finish.] 5:1.28

That's too much. It won’t take that much. [R had asked M how many bites she had left to eat; M said 9, then above: R thinks there isn't enough food for 9 bitesfuls.] 5:2.2

R: Five is too much... Five isn't too much, but it's just the opposite of too much.
M: What is the opposite of too much?
R: I don't know.
[means “…too little…”] 5:4.15

You put too much pictures for me. [R looking at “baby R” photo book.] 5:4.29

There's too much different stories—too many, I mean. 5:5.15

R: I got too much peaches.
M: You got too many peaches?
R: Yeah, I got too much peaches.
[sticks with “much” + sing N] 6:4.16

M: Aren't you gonna write (th)em down, Rach?
R: There's too much numbers.
[adding on calculator.] 6:4.20

R: Do you want too much on it, like this? [re: mustard on sandwich]
M: What, Rach?
R: Is this enough? 6:5.8

I thought I was writing too much “-s”. 6:5.18

**as much**

F: [to J:] You must’ve read that about fifteen times, Jaime.
R: He hasn't read it as much times as me. 5:1.19

It's not as much as I wanted. [R complaining that M put too much cheese on her food; wrong direction on scale] 5:2.19

M: One or two? [offering cookies to R]
R: As much as I can have. 5:3.23

Mommy, I got just as much as I want. [R has poured cherries into bowl; proud of herself that she only put the right amount in bowl.] 5:4.8

**how much**

Mommy, do ya wanna see how much things I have? [R w/ bag of things she made in R's and J's “fun club.”] 5:1.2
Table 11.16C  (continued) Continued Use of Q Forms

<table>
<thead>
<tr>
<th>R:</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>How much</strong> do you want? Two? [getting cookies for F]</td>
</tr>
<tr>
<td>F:</td>
</tr>
<tr>
<td><strong>How many</strong> do I want [correcting R].</td>
</tr>
<tr>
<td>R:</td>
</tr>
<tr>
<td>Yea [= &quot;yes&quot;], <strong>how many</strong>. 5:1.4</td>
</tr>
</tbody>
</table>

**Look how much** rocks we have. [R and friends M & S each making piles of leaves, rocks, etc.] 5:1.7

[R first asks M if we can weigh fan; M says "no"; then:]  
| R: |
| Can we inch it? |
| M: |
| What? |
| R: |
| Can we use the ruler to see **how much** it weighs...inches...**how much** it is? 5:1.7 |

**Look how much** O's that is. [re: on Mother Goooooossie book.] 5:1.11

**How much** people is there in the house? **How much** people are there in the house? How many people are there in the house? **How much** people is there in the house? [R correcting herself, not sure which form to use. ""much...is,"" ""many...are...""] 5:1.18

**How much** boxes of presents is there? [R has wrapped toys in boxes for Scott's "1/2 b-day party." 5:1.18

| R: |
| **How much** [was/were] the balloons we got for my birthday? |
| M: |
| What? |
| R: |
| **How much** inches were the balloons we got for my birthday? |
| [We had bought 4-ft. long balloons for R's birthday.] 5:1.27 |

| R: |
| **How much** can we have? [re: pieces of choc. candy out of box] |
| M: |
| 1. |
| R: |
| 2? |
| M: |
| 1. 5:2.6 |
| R: |
| I don't care how many ... |
| M: |
| You don't care how many? |
| R: |
| I don't care **how much**—. |
| M: |
| Which? |
| R: |
| **How much** and many. Both. [re: cents—to "pay" for milk R gave M.] 5:2.12 |

**See how much** bubbles! [R splashing in tub.] 5:2.17

**Look how much** people are comin' in one car. **Look how much** people there are in the car. [re: cheerios on R's spoon; R pretending bowl is lake, spoon is car, cheerios are people going to swim in lake; common fantasy of R's.] 5:3.9

Do you wanna see **how much** pictures I've made? [M nods. R goes to get pile of pictures.] This much. Do you want to see what they all are? 5:4.24

**How much** do I need? Seven more? [re: bites remaining] 5:4.29

| R: |
| **How much** do you think I should take? |
| M: |
| **How much**? [absent-mindedly] |
| R: |
| Yea, **how much**. How many. 5:5.6 |

**Look how much** are left from yesterday. [R pulling bowl of nuts towards her.] 5:7.9

When I counted those, **how much** were there? [re: Xmas lights; F has just said there were 100 lights.] 5:7.13

**Look how much** words, and on this one look **how much** letters. [re: message R has written] 5:8.2

Mommy, **look how much** things I'm giving Matthew. [R has just made "presents" for M] 5:8.30

| R: |
| **How many** are there? [re: cheerios in bowl] |
| M: |
| Why don't you say "how much are there"? |
| R: |
| I could say "**how much** is there"! |
| M: |
| What could you say that for? |
| R: |
| Cream ... orange juice ... ice cream ... belly buttons, in the whole world. |
| M: |
| What else could you say "how many are there" for? |
| R: |
| Fingers—5...hands—6...cheerios—I bet 10,000...Rachels—3. 5:9.18 |
**Table 11.16C  (continued) Continued Use of Q Forms**

*How much* apples are there! [R seeing lots of apples in refrigerator] 6:1.19  
I'm gonna see how much you measure. [R holding stick over friend A as A stands against a tree.] 6:5.7  
Look how much costumes we have for Halloween. 6.5.22  

**X + A-er**  
R: Can I see how bigger he is?  
J (7:9.20): [measuring with hand] I'm this bigger. I'm this much bigger. [J measuring self to R] 5:6.11  
I like red more better. [re: 3 pieces of Santa Claus cookie; red and white icing and raisins.] 5:8.8  
Lift me up more carefully—more bigger. [F lifting R up on his lap; R standing; up high.] 5:9.16  
Onions are...kinda like more flatter pickles. [re: i.e., not like bean sprouts.] 5:9.18  
But I like it more better with ice cream—I mean icing. [re: home-made cookies.] 5:9.30  
Mommy, how higher is the water at the diving board than you? 6:1.20  
Mine was gigantic—even giganticer than Jaime's. [re: balloons.] 6:2.12  

**Table 11.16D  Continued Use of much more A-er**

*even/much more A-er*  
[Big fan is making a lot of noise:]  
R: The other fan is much...  
F: quieter.  
R: Yes, much more quieter than this one. 5.1.11  
That is much more thinner than ours was. [R to friend M, re: bird feather M has; few days earlier] J and R had found feather on our front lawn.] 5.1.18  

*Much more lilter.* [context?] 5.2.25  
One for grass is much more bigger. [re: scissors. M had told J he shouldn't have used the pinking shears for cutting grass because they're not for grass.] 5.3.8  
It was much more louder. [re: an ambulance R saw a different day had siren on] 5.4.17  
A real witch would be much more bigger than that was. [re: puppet witch in Hansel and Gretel show]. 5.5.25  
My pinky's much more bigger than this. [R's pinky under magnifying glass is much bigger than pinky away from magnifying glass.] 5:6.4  
Before they were much more longer than this. [re: mukhoks; R having trouble getting them on; her feet have grown.] 5:6.15  
... but it's much more colder. [re: baby pool at Aunt Betty's, compared to big pool (which was warm when we went swimming in it);] R had said that she'd like to go visit Betty again to go in the pools again.] 5:7.0  
That's much more smoother. [R has stuck her finger under the curling iron sprung holder lengthwise; previously had finger under it crosswise.] 5:7.5  
M: Do you know this one, Rach?  
R: Yes, that's much more louder. This is much more louder. [re: Xmas carol on record.] 5.7.13  

**Table 11.16E  Modified A + N**

* -er, so, -est, too  
Nobody can take more than that! Unless they have a bigger glass. [re: amount of liquid R has poured into her glass] 5:3.1  
I'm the closest one sitting to her [sitting closest to M; R sitting next to M's place at table; "...the one sitting closest to her"] 5:8.4
Table 11.16E (continued) Modified A = N

Don’t give me so greasy meat. [I think R said this without of, but not absolutely sure. Then R repeated:] Don’t give me so greasy of meat. 5:5:29
What is your best food that you can put on sandwiches [to M]? 5:9:0
Mommy, you’re a so funny girl. 5:9:12
You have a too big hand. [M’s hand can’t fit through hole in R’s pants.] 5:10:24

such (a) A N / what A a N

F: We’ll go to the lake tomorrow unless it’s not such nice weather.
R: We can go if it’s such nice weather.
[F means “unless the weather’s not nice”; today is a nice day. R understood F as “if it’s not such nice weather”—then uses “if” herself] 5:1:3

I wanna show you what big a heap I got. [R sweeping flour; heap of dirt. Note: cf. “how big a heap” vs. “what a big heap”] 5:3:8
There’s not so much people in the lake this time; ‘cause it’s not such a cold day. [re: cheerios in bowl of cereal; pretending they are people in a lake; “‘cause it is such a cold day?”] 5:3:9
You know what? Nathan doesn’t believe out of Santa Claus. He should believe Santa Claus, because who would have such a long beard?...Because who would have a suit like that? 5:4:12

such A
It’s such yukky under there. [re: under kitchen table—R had gone under and is now out.] 5:4:13
My legs are such tired! [re: after sitting on toilet for long time.] 5:4:16

Table 11.16F Attempts at Expressing the Standard of Comparison through aClausal Complement

R: Maybe you should have gave me less strawberries. ‘cause with so much strawberries...I would take a longer time to finish eating. strawberries.
M: Longer than what?
R: Longer than I would have to sit up at the table than, ...I don’t know. 5:2:3
There has to be as many people...[R says she doesn’t know how to say it, then:] There has to be as many people... um... that as many words there are... 5:2:15

uses not farther to mean “less far,” the non-pointiest to mean “the least pointy,” the last oldest to mean “the youngest” (see Tables 11.17A, 11.17B). 28

For the quantifiers little and the least, she uses constructions like the opposite with the positive quantifier; or the most littlest; or non- with the positive quantifier, non-most (Table 11.17C):

(72) R: Five isn’t too much, but it’s the opposite of too much.
M: What is the opposite of too much?
R: I don’t know. 5:4:15
One has the most; one has the most littlest.... This is the one that has the non-most... (re: milk in glasses) 5:6:27

28An example from Jaime:

(xvi) [I has on baseball uniform P’j’s. M suggested he could wear them for Halloween. Jaime protests.]
It’s not gooder than any costume. [means “It’s less good than any costume”] 5:9:22
For the quantifier less, in addition to occasional uses of less, she draws on spatial terms and on her long-standing association of age with number and uses lower, under, thinner, and younger to encode negative amount (see Table 11.17C). These developments appear to indicate that Rachel has now linked the two ends of a scale. She may now be seeing both ends as lying on one scale rather than as two separate properties.

Finally, it is at this time that we see her first use of the quantifier much without a Deg, in a negative context (Table 11.17C):

(73) I don't think I can take much sugar on this much cereal. [R has very little cereal in bowl. [First “not...much” OK; second “this much”—this amount—wrong direction; should be “this little”] 5;2.24

Syntax  In the previous period, we saw Rachel using the forms X + more, Degs this, how, so, too, that + much (and as/how + many), forms of X + A-er, and even/ much more A-er. During this new period, she expands on these forms in a number of ways.

**much more A-er → more A**  First, for the first time, we see Rachel use more as an A modifier without much and without -er; for example, more safe, more bad:

(74) Jaime says the ladder’s more safe the way he has it. 5;2.30

Further examples are shown in Table 11.18A. It is of note that that most does not occur as a superlative marker without -est for the first time until a year later: “Jaime told me his most favorite book was One Hundred Folk Tales.” 6;1.4

**Deg + much → Deg + many; differentiation of much and many**  In addition, while many previously occurred only with as and how, it now occurs, and quite prolifically, with all of the Dews that were previously used with much (see Table 11.18B). It is of note that Rachel often self-corrects her choice of much versus many. By 5;6 or so, she seems to have a fairly clear grasp of the association of many with certain (countable) items and much with certain (uncountable) items, although the association is not perfect:

(75) R:  **How many** are there? [re: Cheerios in bowl]
M: Why don’t you say “how much are there”?
R: I could say “how much is there”!
M: What could you say that for?
R: Cream...orange juice...ice cream...belly buttons, in the whole world.
M: What else could you say “how many are there” for?
R: Fingers—5...hands—6...cheerios—I bet 10,000...Rachels—3.
5;9.18

Of further note is that by now the previously used forms “How many” and “How old” for age have now merged into “How many years old...”:
### Table 11.17A: Negative comparative A

Top of the isn’t farther than Kansas City. [M asks R if K.C. is farther than Top; to clarify and R says “yes.” B means “Top is less far than K.C.” Problem with direction on scale? “Not farther than” is not the same as “less far than”; “not farther than” denies passing limit of distance set by K.C. 5.2.13

R: I’m not gonna go as far as I can’t reach.
M: You mean reach the bottom?
R: I’m not gonna go farther than I can’t reach.

[re: swimming; R won’t go in water that’s too deep: means “I’m not gonna go farther than where I can reach the bottom”—negation of Stand of Comparison with *than*] 5.2.19

### Table 11.17B: Negative superlative A

That’s the pointiest one. Now I’m gonna find the non-pointiest one. That’s the non-pointiest one. [re: candy corns; R first had pointy one, then one with the top half broken off.] 5.6.14

Jim’s the tallest one of all, and Fran’s the tallest littlest one. [R has 3 things standing up—Jim (fork), Fran (magic marker), Scott (marker cap).] 5.7.12

R: The first oldest is Brian Q. The last oldest is Timmy. [re: boys in class]
F: Do you mean the youngest?
R: Yes. 6.9.4

### Table 11.17C: Negative Q

**“little”**

R: Five is too much... Five isn’t too much, but it’s just the opposite of too much.
M: What is the opposite of too much?
R: I don’t know.

[means “...too little...”] 5.4.15

I haven’t got so much left that I can—that I can hardly get it. [re: little amount of cereal left; = “I’ve got so little left...”] 5.10.7

**“the least”**

[R and Aunt Fran looking at R’s Star Record Book. R has gotten stars for doing different tasks well; Fran asks R: “which one has the least stars?” (i.e., which line); R points to line with most stars. When Fran tells her that’s not correct, that it has the most, then R chooses the line with the least.] 5.1.17

One has the most; one has the most littlest. This is the one that has the non-most. [re: levels of milk in glasses] 5.6.27

**“less”**

Was that lower than a minute? [R had told M to wait a minute before doing something, or M had told R to wait a minute before she would do something; then M ready to do that thing; i.e., “was that less than a minute?”] 5.1.7

That was lower than ten. [re: R ate fewer than 10 bites and she was finished w/ her food; M had told R that she should eat 10 more bites; it took R about 6 bites to clean her plate. [“lower than” = “less than”] 5.1.20
Table 11.17C  (continued) Negative Q

R:  Maybe you should have gave me less strawberries, 'cause with so much strawberries...I would take a longer time to finish eating...strawberries.
M:  Longer than what?
R:  Longer than I would have to sit up at the table than...I don’t know 5:2:3

Ten or under ten. [i.e., that’s how many bites she wants to have of beans off plate. [means “less than 10”—at same time as having trouble with “least”—non-most/most littlest] 5:6:28
I want younger than this. [re: amount of noodles on her plate. i.e., “...less ...”] 6:0:14
Fifteen! Lower than fifteen! [R, M, and friend F talking about school] and R had gone to in Chicago; M asked R how many kids were there; F asked if there were 15.] 6:1:12
R:  Mommy, are the morning and afternoon the same amount of day?
M:  Mhm.
R:  Oh, I thought the afternoon was bigger and older, and [I thought] the morning was littler and thinner—and younger. 6:1:20

not...much
I don’t think I can take much sugar on this much cereal. [R has very little cereal in bowl, first “not...much” OK; second “this much”—this amount—wrong direction; should be “this little.”] 5:9:24

(76) How many years old is Eva? How many years old is Christy? [M, J, & R in car on way to Eva and Christy’s house] 5:1:28

This development, crucially, comes at the same time as, for the first time, Rachel begins using a full Deg-Q form (how many) as a modifier of more (where previously, the modifiers were unanalyzed forms a lot, a little bit, numbers).

(77) How many more bites? How bites? How more bites? How more bites? How many more bites? [R looking; protested when M went to get paper, and said it has to be last line above.] 5:1:30
Mommy, how many more bites? [R eating lunch] 5:2:14

It is noteworthy that (a) the vacillation in the first of these examples is indicative of the tenuous nature of this construct for Rachel at this point, and (b) these developments coincide with indications that Rachel has gained some clarity with regard to the differential meaning of many and much.

X + A-er / most + A-est \(\rightarrow\) X + A-est  During this period we also see expansion of quantifier phrases in a number of ways. First, where previously, the only modified A form that allowed modifiers was A-er, plus the doubly marked superlative, Rachel now begins using modifiers (very, really, so, and even more) with A-est as well. Examples are shown in Table 11.18C.
**much more A-er → much too A-er → much too A**  We also see the constructs involving even/much with more A-er evolving in a number of ways. First, Rachel allows too in place of more, yielding much too A-er, which eventually gives way to much too A (see Table 11.18D).

**even/much more A-er → a lot/one more A-er**  Second, Rachel begins to allow a lot or a number before more A-er. Recall that earlier Rachel had already been using for some time forms such as one more and a lot more; so this expansion seems to be an incorporation of those forms into the much more A-er construct (see Table 11.18E).

All of these developments take place mostly during the first half of this year. However, we see a very important change at around 5:11 that is connected with these a lot/one more A-er constructions. Prior to this time, it is impossible to tell whether the syntactic organization of these forms is [much [more A-er]], [a lot [more A-er]], with more acting as a double marker for the comparative, or [[much more] A-er], [[a lot more] A-er], with the modifier forming a constituent with more. At 5:11, we begin to see some clear cases in which the structure takes the latter form. First, there are utterances such as the later two in Table 11.18E:

(78) You’re **one more older than** her. [To F: about M; J had asked M, then F, what year they were born.] 5:11.25  Note: [[one more] older], not [one [more older]]

He has a **whole bunch more littler** circles. [i.e., than R or than he has big circles. R saying J has design drawing set that has big circle and a lot of little circles. R has own in hand, could only find a medium size circle of her own design set.] 6:3.27  [Note: [a whole bunch more] [littler circles]]

This coincides with the emergence of measure phrases modifying A or and as A (Table 11.18F), as in (79), as well as of a quantifier modifying a Q other than more: much + much, as in (80).

(79) Daddy’s arms are **two arms longer** than [mine/my arms].
[R wearing F’s sweater] 5:11.16

I’m **one step later** than you.
[R following M to car; R wants to give M good-bye kiss before M leaves.] 6:3.30

It was a big name…. It’s **twice as big as** “Gathercole.” [re: tumbling teacher’s name] 5:11.14

(80) I get **much much** lots of water. I get **much much** of water. I get whole bunches of water….I get lots and lots of water. [R in bathtub] 5:11.24
TABLE 11.18  Rachel 5;0–6;0 New Developments, Qs

Table 11.18A  more A

?? It makes it be more weight with this much people in it. [re: car's weight w/8 people in it. note: not “heavier”] 5;1.18
Jaimie says the ladder’s more safe the way he has it. [re: ladder to swing set. [first more A without -er on adjective] 5;2.30
All the bad babies, when I spank ‘em, they be more bad. [R discussing her “bad babies”; said she has on occasion spanked them; M asked if they behaved after R spanked them. [note: not “more badler”]] 5;8.3
I’m away from you. I’m more close to you. I’m more close to you now. 5;9.1
Lift me up more carefully—more bigger. [F lifting R up on his lap; R standing; up high.] 5;9.16

Table 11.18B  Expansion of X + many

too many

R:  Too many windows are open.
F:  There’s only two open.
R:  I know. That’s too much! 5;1.6

There’s too much different stories—too many, I mean. 5;5.15
There’s too many people at Aunt Rainie’s. [= “so many people...” at Xmas supper; M and F ask R many questions like why she thinks there are too many; gives no reason.] 5;7.18

R:  I got too much peach.
M:  You got too many peaches?
R:  Yeah, I got too much peach.  [R sticks with “much” + sing N] 6;4.16

as many

I can’t make just as many flowers. [R drawing picture like one she says she made before; picture had flowers on it; I think she means she can’t make exactly the same number of flowers.] 5;1.15
There has to be as many people...[R says she doesn’t know how to say it, then:] There has to be as many people...um...that as many words there are. 5;2.15
Can I choose as much—as many as I want? [re: marshmallows] 5;4.29
[noise M how many dollars she has left, at store]
M:  Four.
R:  That’s under—that’s almost as many as I am—five. 5;5.16
We’d just use as many candles that would make a three. [re: for M’s birthday—for “3” of “31.”] 5;8.4
I got about as many you need. I got six. [M needs five magic markers.] 6;3.6

this many

I’m this many years old. I’m this many years old. I’m this many years old.
I’m this many years old. [R holding up first 1, then 2, then 3, then 4, then 5 fingers; R to Aunt Fran, sort of teasing; previously, it was always “the many” or “how many” w/o “years old”] 5;1.15

that many

F:  They were doing that at the Topeka Zoo, weren’t they, Rachel?
R:  [nods] But not with that many elephants!
[There were 2 at T Zoo, 4 on TV—doing trick where 1 elephant is bridge, others walk under] 5;1.28

how many [previously connected with AGE]

R:  How much do you want? Two? [R getting cookies for F]
F:  How many do I want [correcting R].
R:  Yes [= “yes”]. how many. 5;1.4
Table 11.18B (continued) Expansion of $X + many$

How much is there in the house? How many people are there in the house? How many people are there in the house? How much is there in the house? [R correcting herself, not sure which form to use. "much... is," "many... are...""] 5.1.18

How many years old is Eva? How many years old is Christy? [M, J, & R in car on way to Eva and Christy's house] 5.1.25

How many more bites? How bites? How more bites? How more bites? How many more bites? [R fooling; protested when M went to get paper, and said it has to be last line above.] 5.1.30

R: I don't care how many....
M: You don't care how many?
R: I don't care how much——
M: Which?
R: How much and many. Both.
[re: cents—to "pay" for milk R gave M] 5.2.12

Mommy, how many more bites? [R eating lunch] 5.2.14

R: How many bites?
M: Mm—thirteen.
R: Too much .... Has to be ten or under ten.
[re: bites left to eat at supper] 5.4.29

R: How much do you think I should take?
M: How much? [absent-mindedly]
R: Yea, how much. How many. 5.5.6

There's too much different stories—too many, I mean. 5.5.15

R: How many holes are there?
M: You mean to hang the toothbrushes?
R: No, not to hang 'em. To put the toothbrushes through. 5.6.2

[M tests R's judgments on some Ns on whether you should say "How much X" or "How many X":
How much: paint (N offered by R), cake, milk (N offered by R), pie; How many: teeth, plates, cake plates, children, pieces of pie, costumes, leufs. 5.6.15

How many rides...? [re: at Maple Leaf Festival; how many rides does each one get?] 5.6.15

J (8;0.9): How much peanut butter balls did you have?
F: How much!?
R: Many!
F: [to J] You mean "how many"?
J: Mhm [as if to say, "Sure, why do you ask?"] 5.9.0

R: How many are there? [re: cheerios in bowl]
M: Why don't you say "how much are there"?
R: I could say "how much is there"
M: What could you say that for?
R: Cream...orange juice...ice cream...belly buttons, in the whole world.

M: What else could you say "how many are there" for?
R: Fingers—5...hands—6...cheerios—I bet 10,000...Rachels—3. 5.9.18
**Table 11.18B**  (continued) Expansion of X + many

<table>
<thead>
<tr>
<th>Note from R to M:</th>
</tr>
</thead>
<tbody>
<tr>
<td>&quot;To mom. I love you! How many pages have you made now? Answer (followed by arrow pointing down on the page, showing where M should answer). Love, Rachel&quot; 6:2.14</td>
</tr>
</tbody>
</table>

**Table 11.18C**  Expansion of X + A-er -> X + A-est

<table>
<thead>
<tr>
<th>Note from R to M:</th>
</tr>
</thead>
<tbody>
<tr>
<td>[R had asked M to pick favorite (&quot;best&quot;) picture of hear drawn by R and two friends, M &amp; S.] I mean your very, very, very, very, very, very, very best one. 5:1.1</td>
</tr>
<tr>
<td>[R, M, and Aunt Fran all playing ABC game; players must choose red, blue, or yellow cards to play; R asks them what color they &quot;like best,&quot; then &quot;just like,&quot; then last utterance not necessarily distinct from &quot;like best&quot;; M just wants a final decision, I think.] What is your really best one? 5:1.18</td>
</tr>
<tr>
<td>That's not a bad record. Only &quot;Santa&quot; is the very last one. On the tape it's the very middlest one. [re: new Xmas record, &quot;Santa Claus is coming to town&quot;. R doesn't like having to wait until the last song to hear it; prefers the tape.] 5:7.13</td>
</tr>
<tr>
<td>R: Mommy, you're so the cutest.</td>
</tr>
<tr>
<td>M: How? What does that mean?</td>
</tr>
<tr>
<td>R: You're the cutest in the whole world. 5:7.29</td>
</tr>
<tr>
<td>That's more best. That's best of all of 'em. [re: a particularly good place for sledding.] 5:8.24</td>
</tr>
</tbody>
</table>

**Table 11.18D**  much more A-er -> much too A-er

<table>
<thead>
<tr>
<th>Note from R to M:</th>
</tr>
</thead>
<tbody>
<tr>
<td>[R said that only little people could ride in the stroller where little friend H was riding, then:]</td>
</tr>
<tr>
<td>M: I'm as little as H...!</td>
</tr>
<tr>
<td>R: [laughs]</td>
</tr>
<tr>
<td>R: H___'s much too smaller.</td>
</tr>
<tr>
<td>[Note: &quot;too&quot; not scalar] 5:1.1</td>
</tr>
<tr>
<td>[R said section of orange she had cut was &quot;too big.&quot;]</td>
</tr>
<tr>
<td>M: Rachel, how would you say it if it was really, really too big.</td>
</tr>
<tr>
<td>R: &quot;much too big.&quot; I wouldn't say it like this, &quot;too too big.&quot; [2 times] I would say &quot;it was much too big.&quot; 5:7.13</td>
</tr>
</tbody>
</table>

**Table 11.18E**  much more A-er -> a lot/one more A-er

<table>
<thead>
<tr>
<th>Note from R to M:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Thanks. This [re: robe] makes me a lot more cooler. [M has just put it on? taken it off? exchanged what she had on for the robe? on Rachel.] 5:7.13</td>
</tr>
<tr>
<td>You're one more older than her. [To F; about M; I had asked M, then F, what year they were born.] 5:11.25</td>
</tr>
<tr>
<td>[Note: [one more] older, not [one [more older]]]</td>
</tr>
<tr>
<td>He has a whole bunch more liltter circles. [i.e., than R or than he has big circles. R saying I has design drawing set that has big circle and a lot of little circles. R has own in hand, could only find a medium size circle of her own design set.] 6:3.27</td>
</tr>
<tr>
<td>[Note: [[a whole bunch more] [litter circles]]]</td>
</tr>
</tbody>
</table>

**Table 11.18F**  Emergence of Measure + A-er, Measure + as A, Q + Q

<table>
<thead>
<tr>
<th>Note from R to M:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Daddy's arms are two arms longer than [mine / my arms]. [R wearing F's sweater] 5:11.16</td>
</tr>
<tr>
<td>I'm one step later than you. [R following M to car; R wants to give M good-by kiss before M leaves.] 6:3.30</td>
</tr>
<tr>
<td>It was a big name...It's twice as big as &quot;Gathercole.&quot; [re: tumbling teacher's name.] 5:11.14</td>
</tr>
<tr>
<td>I get much much lots of water. I get much much of water. I get whole bunches of water...I get lots and lots of water. [R in bathtub] 5:11.24</td>
</tr>
</tbody>
</table>
And a few months later, we see the first occurrence of a full Deg-Q form (as much) modifying A-er:

(81) She’s just as much older than me (as) I’m older than you. [re: friend; “...as I am you.”] (6;1.4)

But the system is far from sorted, as we see continued errors beyond these dates. For example, just a few days later, Rachel says:

(82) Mommy, how higher is the water at the diving board than you? [i.e., how much deeper is the water than you are tall] (6;1.19)

Scalarity. During this year, we still see continued errors in the use of scalar expressions. The primary difficulty now appears to be one of appreciating the importance of the direction on the scale (see Table 11.19A). At the same time, Rachel still uses catch up as a nonscalar predicate to mean something more like “beat,” as in Table 11.19B.

At the same time, we see further attempts at the expression of scalarity that appear more appropriate, as in Table 11.19C. It appears that by the middle of this year, Rachel is developing a more sophisticated appreciation of scale. And this appears in part to be promoted by the use of spatial imagery (see Table 11.19D). Also, as noted above, Rachel’s attention to negative ends of scales is posted to be related to her growing appreciation of scales and her linking of the two ends of scales.

Summary, Even Greater Advances, Rachel

During this period, we see several significant advances. First, Rachel appears to have linked the two ends of scales, as evidenced in her attempts at expressing negation and negative ends of scales, with both adjectives and quantifiers, and her grasping at terms for the negative ends (“non-most”). This development may be an outgrowth, at least in part, of her previous developing awareness of scalarity, as well as a co-temporaneous expression of scalarity through spatial imagery. She may now be able to lay multiple levels of presence of a property along a single scale.

She also appears to have come to an appreciation of the mass/count difference between much and many. This coincides with a proliferation of the use of many in her speech.

In relation to syntax, Rachel appears to be working on the syntax of degree-marked and quantified phrases with nominal heads and of clausal complements, although she seems to have not yet worked these out. And she seems to come to more all-encompassing structure(s) for such phrases, leading to Q-A (more A), Deg-Q (how many), Deg.Q-Q (how many more), Q-Deg-A (much too A) and Measure word-Q/Deg-A (one more older; two arms longer) forms. (It is not until later that we see Deg-Q-Deg-A (as much older) forms, however.)
TABLE 11.19  Scalarity

Table 11.19A  Direction on Scale

too, as

R: It may be too late, 'cause they may still be in bed.
M: It may be too late?
R: It may be too early because they may be—they may still be in bed.

[R wanted to go play with neighbors M and S early in the a.m.; M told R to wait a bit till later. M probably said something about M & S might still be in bed. [first “too late” wrong direction on scale] 5/1.18

It's not as much as I wanted. [R complaining that M put too much cheese on her food. [wrong direction on scale] 5/2.19

I don't think I can take much sugar on this much cereal. [R has very little cereal in bowl. [first “not...much” OK; second “this much”—this amount—wrong direction; should be “this little”] 5/2.24

I got about as many you need. I got six. [M needs five magic markers.] 6/3.6

[R holding up piece of bread, M having told her to put back end piece because it was too small.]
R: This is as small as they come.
M: What do you mean? Is that the biggest piece you can find or not?
R: Yeah, it's the biggest piece.

[wrong direction on scale] 6/3.29

until

How do we call her until that tower's finished? [re: calling her grandmother in England from the US; we had been discussing how a new microwave tower they've been building will facilitate overseas calls.] 5/0.2

R: Now it's real long ago that you've cut it.
M: What?
R: Now it's real long ago till you cut it.

[M has made a remark about how happy she is she cut R's hair; R told M not to talk about it, since it's so long since she cut it; M cut R's hair about a month ago.] 5/5.7

Table 11.19B  Non-Scalar Uses of catch up with

Daddy caught up with all three of us, cause he was done before us. ["beat?" "catch up" demands sense of scale—moving up on scale; lacking in R's understanding?] 5/1.7

[R is ahead of M. R pretending M is girl, R is mother.]
R: I'm catching up with you, little girl.
M: What does that mean, Rachel?
R: It means I'm getting closer to the place I'm going. Oh, I'm catching up with you, that's for sure.

[Not clear; catch up appears to mean "beat"] 5/4.17

I was tryin' to catch up with daddy, so you didn't know he was here in the first place. [R was trying to rush ahead of F to get up to M at her office before him; she was trying to "beat daddy, so that...".] 6/4.1
TABLE 11.19 (continued) Scality

Table 11.19C  Expression of Scality

It'll be long since now until your birthday comes. [R to friend T. [scale of time]] 5:8.2
[R explaining how a boy who was 6 differed in age from her and Jaime: He was...] The second age
as me, and the first age... I mean, the second age from me, and the first age from Jaime. 5:4.26

Table 11.19D  Scality Linked with Spatial Imagery

Was that lower than a minute? [R told M to wait a minute before doing something, or M had
told R to wait a minute before she would do something; then M ready to do that thing; i.e., "was
that less than a minute?".] 5.1.7
Ten or under ten. [i.e., that's how many bites she wants to have of beans off plate. Means "less than
10"—at same time as having trouble with "least"—non-most/most littlest.] 5.6.28
I was waiting about that much. I was waiting that much. [R holding arms apart—i.e., "that long";
R waited for M at Community Building after art class.] 6.0.14
Fifteen! Lower than fifteen! [R, M, and friend F talking about school J and R had gone to in
Chicago, M asked R how many kids were there; F asked if there were 15.] 6.1.12
(I want something we haven't had) for a real, real, real long time—like about from the hallway to
that side of the garage. 6.1.4

What Is Missing? One aspect of these forms that children must still sort out is
which adjectives go with -er and which with more in comparatives:

(83) Mine was gigantic—even *giganticer* than Jaime's. [re: balloons]
    (R 6:2.12)

    J: The least you could do is be more quiet.
    F: Why didn't you say "quieter"?
    J: Because "be more quieter" wouldn't make sense. (J 7:6.17)

    [Family is riding overnight in car to Chicago. J has just woken up. Begin-
    ning to dawn.]
    J: It's becoming more light, everybody.
    M: What?
    J: It's becoming lighter. (J 7:7.3)

    I found two really interesting ones. One is interestinger than the other.
    Which one do you want to see—the interestinger one? (Saul 5:2.4)

    Only if I had kept these stamps in a secreter place. [J regretting that
    he hadn't put his stamps in a more secret place than he had. Means "If
    only...".] (J 7:7.29)

    You feel much uneasier—much more uneasier in an elevator with a
    wheelchair. (J 14:1.9)

This is complicated by the fact that the choice is not strictly lexically based, but is
dependent on the overall structure. Thus, for example, *He is bigger than he is tall*
does not mean the same as *He is more big than he is tall*. Utterances from children
such as the following reveal that sorting this out is not unproblematic:
(84) I'm strong and I'm brave. But I'm braver than I am strong. [means "I'm brave more than I'm strong" or "I'm more brave than I am strong"]
(Saul 6:3:29)

Syntactically, Rachel appears to be on the brink of sorting out fully the syntax of degree and quantifier phrases. However, many of the problematic forms (much more A-er, Degs with A-er without an intervening much, Deg + much + A, and so vs such) hang on in children’s speech beyond these ages, indicating that the process of sorting the whole set of structures out fully is protracted beyond these ages.

**COMBINED SUMMARY, BOTH SADIE AND RACHEL**

What aspects of development are common to Sadie and Rachel, and where does their development differ? The following summary is provided in an attempt to clarify the commonalities and the differences in the developmental trajectories followed by Sadie and Rachel.

**Semantics**

**Semantic Development Before 3:0** With regard to the semantics of their expressions, both Sadie and Rachel begin early on, before age 3:0, to use modifiers to express **intensification**. For Sadie, the forms used were generally preadjectival modifiers, so, very, quite, all, really, and reduplication of very and really (and occasionally -er). After initial appropriate use, Sadie showed extensive overgeneralization of the expression of **intensification** outside the acceptable adult norms; for example, to way/freezing/heck-out A, reduplication of verbs and adverbs. Rachel also used really and reduplication of the adjective itself, but she also used the suffixes -er and -est prolifically for this meaning.

Both children also used forms before 3:0 to express **extreme ends and like**. Sadie often used match, Rachel used same to express **likeness**. Both children often used than to mean “like.” For Sadie, the expression of these notions seems to have come in after the expression of **intensification**. For Rachel, the timing appears to have been more co-temporaneous. Rachel also expressed **contrast** during this period.

During this early period, neither child expressed notions associated with as... as, enough, or too. If they used these forms at all, they were used immaturity (e.g., Rachel's use of too late and too heavy for “can't”).

**Semantic Development 3:0-4:0** During the next year, both children continued prolific expression of **intensification**, adding forms used to express this notion. Sadie added quite as a modifier, and she extended the use of so and galore to use with verbs. Rachel added very and real as intensifiers.

Both children also began during this time to add the forms as... as, A enough, and too A to their repertoires, and Sadie added how and -er. (However, Rachel only used how with old during this period.) While these forms seem to have
been used occasionally in appropriate contexts, with possible appropriate import, on the whole they revealed immature use. Both children showed a clear lack of understanding of the scalar nature of these, that they entail specification on a scale viewed from below going upward on the scale. They often used them instead for more "punctual" readings. This absence of a scalar usage is also evident in both children's use of until and catch up with, and in Sadie's use of barely.

Evidence of consistently appropriate semantic usage of the comparative appears at around 3:6 in Rachel's speech, followed by appropriate use of the superlative around 3:8. Appropriate uses of too A appear around this same time. With this consolidation of the semantics of the comparative and the superlative, not only is the usage of -er and -est appropriate, but when -er is accompanied by a standard of comparison, it is appropriately introduced by than. Rachel's use of as...as continues to show problems with scalarity, however.

Semantic Development 4:0–5:0 Rachel continues to expand on the expressions used for intensification, now adding so and pretty for adjective modification. She also now uses how for this purpose, as well as for nonintensive meaning.

Her uses from 4:0 on show confirmation of solidification of the semantics for A-er and A-est, with no further misuses for less mature meanings. However, while the use of than is by now established as accompanying -er, the form of the superlative is more tenuous. Rachel begins alternating -est with best, she vacillates between the and my as the determiner accompanying the superlative, and she shows variable use of of all, in the world, and world's as the standard of comparison.

Rachel also begins to use very a lot for "absolute," modifying expressions of extreme ends. She also shows greater use of as A as (and that A), although she still uses this as marking a point on a scale (as if it means "the same as"), rather than as encoding a point on a scale as seen from below upward.

Semantic Development 5:0–6:0 Finally, during the final year examined, Rachel shows heightened attention to negative poles of scales. She often uses the positive-pole term with opposite or non- to refer to the negative pole. This is interpreted as an indication that she has now realized that the positive and negative ends of the scales lie along the same scale.

Her usage of the scalar forms too A and as A as appear to be developing, with a greater appreciation of the scalar nature of these predicates. However, she still makes errors in giving these forms nonscalar readings.

Forms

Forms Before 3:0 Prior to age 3, both children used more as one of their earliest quantifiers, with immature meaning, alongside a few free-standing others such as two, first. Both children's first steps to more complex expressions involved adding any more and no more to their repertoires. For Rachel, prior to age 3, the next development was to add many to refer to age ("the many") and the occasional too much (with uncertain semantic import).
For Sadie, there was further development prior to age 3: First, she also added the quantifiers a lot and a little bit to her lexicon. Subsequent to these, she added all and a few, and she expanded the modifiers occurring with more to yes more, one more, some more, and she added other quantifiers that allowed modification: a little bit some, a lot of three. At approximately the same time, she added Deg + much (very, how, and so + much, all used for INTENSIFICATION) to her repertoire, with much never appearing without such a Deg marker.

Subsequently, about two months later, Sadie began using some of the Qs in her speech as Adjective or Deg modifiers; for example, a little bit loose, a lot salty, a lot so love you, all that fast, somewhat better.

Forms 3:0–4:0 In the next year, Rachel began using more for amount, and she added the Qs a lot, much, most to her repertoire. These were occasionally linked with than, expressing “like.” She also continued using any more, but expanded her use of Deg + Q to too/that much and how many (for age only). Rachel appears to have been somewhat behind Sadie in her development of the forms of these structures at a comparable age.

For Sadie, developments were more extensive regarding forms at this age. First, she added many and enough to her Qs, and she began using how/too/as much beyond INTENSIFICATION. By 3:8, the first use of much without a Deg word was observed.

During this time, there also seems to have been in Sadie’s speech an explosion of Deg and Q and A combinations, apparently quite indiscriminate in syntactic form. These included Deg + Q (“quite a bit,” “quite a lot,” “the a lotter”), Q-A (“a bit spicer,” “any spicer”), Q-Deg-A (“any too tight”), Deg-Deg-Q (“quittest bit”), Deg-Deg-A (“very too small”), Q-Q (“5...bit”), Q-Q-Deg-A (“once less braver,” “much less braver”). However, while these appear to have been indiscriminate in form, when they involved multiple modification, they seem to have involved the semantic modification of -er, too, and -est; that is, the second Deg appears to always have been too, -er, or -est.

Finally, Sadie also began using numbers as A modifiers (“150 tired”) at this same time. These are likely to have been related to the other Q-A forms, but it is hypothesized that the introduction of numbers into these constructs may signal an important role for numbers in children’s developing understanding of scalarity.

Forms 4:0–5:0 Rachel’s early development during this year was similar to Sadie’s in the previous year in many respects: She expands on modification with more—three more, a lot more, and she expands on Degs used with much—not only too/that much, but also so/how/as much.

Beyond this, like Sadie, Rachel expands the forms of the constructs. Unlike Sadie, however, her expansion of the forms in question appears to have progressed through the development of X-A-er in her speech, around 4:6. This expands, first, at around 4:8 to more A-er, and at around 4:10 to most A-est. About half a month later, even/much more A-er emerged.

There appear to have been several important steps for Rachel during this year in the development of the syntactic form of these constructs. First, the develop-
ment of *as...as* appears important. As *much* emerged at the same time as *as A*, indicating a shared source. But *as A* was accompanied early on, from 4;4, with the standard marker *as*; this close link was not the case with *as much* until about 4;10, when Rachel seems to have come to the conclusion that the standard of comparison was required. This tight link between Deg *as* and standard marker *as* appears to have been transferred over to -er and its association with *than*, which she explicitly links.

Furthermore, these developments appear potentially linked with Rachel’s new attention to clausal complements of these forms. It was hypothesized that Rachel’s conclusion that the standard of comparison was required with *as...as* and possibly -er...*than* constructs may have forced her to attempt the expression of complex clausal standards of comparison in these structures.

In addition, the more elaborated, multiply modified forms developing during this time seem to be related to the development of more complex local syntactic structures. This includes the development of constructs with nominal heads, in which the degree phrases are incorporated into constructs involving nominal determiners and nouns. Rachel’s difficulties with these constructs reveal that this was a far from straightforward task.

Finally, like Sadie at one year younger, Rachel at this age, around 4;10, seems to have associated scalarity with number. While Sadie brought number into A modification, Rachel seems to use numbers more adverbially, as in “I’m sweating three times, and I’m tired two times.”

**Forms 5;0–6;0** During this year, Rachel appears to develop a refined set of structures out of the forms that were developing during the previous year. First, *more A* emerges for the first time, likely a development from *much more A-er*. Deg + *many* emerges, comparable to the previously available Deg + *much*, and this development seems to coincide with a developing understanding of the differential mass/count status of *much* and *many*. Similarly, *X + A-est* appears to emerge out of *X + A-er* (perhaps in combination with *most A-est*); *much too A* and *a lot more A-er* emerge from *even/much more A-er*.

**OVERALL DISCUSSION**

What do these data ultimately reveal concerning the acquisition of language, in particular language involving a complex set of interrelated forms and meanings? First, they reveal a complex interweaving of cognitive, semantic, and syntactic factors that contribute to the timing and sequence of acquisition.

**Cognitive and Semantic Development**

**Encodable Notions** First, on a cognitive and semantic level, it appears that certain concepts are “accessible” early to children; others appear more inaccessible and do not come in until later. Among the relatively accessible notions are
INTENSIFICATION and LIKENESS. Comparison of the relative presence of a property in two or more individuals appears more complex and less accessible to young children. Thus, the early uses of forms in children’s speech tend to be associated with meanings of INTENSIFICATION and LIKENESS. If in the adult language a given form expresses scalarity, that form, if used by children, will tend to be misused for one of these simpler notions.

This cognitive/semantic factor interacts with factors related to the form of the linguistic input. There are many ways to express INTENSIFICATION and LIKENESS in English, and different children appear to “grab” different expressions and run with them. Sadie used a lot of preadjectival forms (very, so, etc.) to express INTENSIFICATION; Rachel tended to use suffixal forms (-er, -est). Sadie used match quite a bit to express LIKENESS; Rachel used same(s). Beyond the data examined here, my son, Jaime, used as quite a bit for LIKENESS, which he picked up through his fondness for books (“Its fleece was white as snow’); see (85). Melissa Bowerman’s daughter Christy, on the other hand, used so (as in “so is she”) for LIKENESS; see (86).29

(85) ...but she’s not big as her brother so she can’t say “thank you” as her brother, right? (J 3;9.25)

It’s pink as your shirt. The balloon’s pink like your PJs. (J 4;1.4)

(86) I want ice cream so boy. (= “I want ice cream like the boy has.” As M & C pass boy eating ice cream.) (C 2 yrs.)

I have a go potty ... so Mark. (= “...like Mark.” C at home, but Mark goes potty when she is at his house every day.) (C 2 yrs.)

Each child seems to have drawn on his or her linguistic experience to express this commonly understood notion of LIKENESS.

Development of Scalarity The lack of accessibility of notions of scalarity is associated early on with misuse of a variety of expressions. This includes early use of, e.g., A-er, A-est, and too A for “A” or “very A,” as well as misuse and misunderstanding of as X as, that X in an immature fashion, to mean “the same X as.” This usage shows a lack of appreciation of the fact that scalar predicates involve a direction on a scale, asserting a lower limit on the scale in the affirmative, denying the meeting of that lower limit in the negative.

Problems with scalarity also affect forms that go well beyond the forms of primary interest here, spilling over to all other scalar expressions, including those involving time (until, still) and notions like “catching up.” Children’s early misuses of these forms treat them as if they express more punctual notions like “when,” “at that time,” and “beat.”

The growing understanding of scalarity associated with these linguistic forms seems to emerge in two ways. First, children begin to explicitly associate the magnitude of a property they are expressing with numbers. It is possible that this devel-

29I am grateful to Melissa Bowerman for these data.
opment has its source in the child’s growing understanding of number or in the child’s growing command of these linguistic structures themselves. The former case would mean that as children are beginning to understand number and scalarity outside of these expressions, they then bring that understanding into these expressions as a consequence, to help them gain a greater scalar command of those expressions. Another possibility, however, is that the linguistic forms themselves invite children to think of them as directly involving number themselves.

There are several ways in which language may be providing such an invitation, in that many associated constructs contain quantifier and number-related forms; for example,

(87) **no more, some more, one more**
    **more delicious**
    (not) **one bit**
    **any more, any X-er, any good**
    **a bit, a bit more, a bit A**
    **twice as X**
    **five times X-er**
    **lots X-er**
    **much X-er**

The data here make it clear that children pick up on such associations and try to generalize from them:

(88) I want **yes more baguette.** I want **yes more cheese!** I forgot I already had baguette! (Sadie 2:3.7)
    That doesn’t make **any sense.** Not **one single /sɛnt/ [ = /sɛnt$/]?[
   ] (Sadie 3:8.24)
    Is it a **bit spicy?** Is it any **spicy?** [re: food V has made, Thai food—S wants to know if it’s spicy before she tries it] (Sadie 3:9.22)
    [V and Sad discussing how Sadie was “lost” at a park one time:]
    V: But Sadie wasn’t worried. Not **one teensy bit.**
    I like it **30 bits!** (Saul 4:9.28)
    [Rachel comparing amount she’s sweating and amount she’s tired:]
    I’m sweating **three times,** and I’m tired **two times.**
    [i.e., sweating at a value of 3 and tired at a value of 2.] (Rachel 4:11.25)
    I’m like **once** less braver than Saul. (Sadie 3:11.27)

The direction of influence may, of course, go both ways, and is at this point unclear; this can only be answered through further research.

At the same time, Rachel’s growing understanding of scalarity associated with these linguistic forms seems to emerge in a second way, in her focus on negation
and on negative ends of scales. Her focus on negative ends and her expression of those ends often with the positive-pole forms ("nonmost," "the opposite of too much," etc.) suggest a linking of the two ends of the scale into a single scale. Rachel’s utterances expressing scalarity seem to also draw on spatial metaphors, such as in the use of lower and under for “less than.” However, these may simply be attempts at expressing negative ends of scales when the appropriate lexical items are not readily available, as she also draws on, for example, younger, thinner, and older for such purposes.

Scalar Predicates and Conversational Implicature If these analyses are correct, they suggest that the acquisition of scalar predicates involves several separate developments in the semantics of the forms, and is not simply a matter of coming to understand the conversational implicatures associated with them. We can discern five developments necessary for coming to understand the relevant forms:

1. First, the child must gain an appreciation of something of the core meaning associated with the form in question. Thus, learning too involves going beyond initial uses limited to, for example, heavy or late with an immature semantic content, to understanding that it involves whether there is a fit for some purpose. Learning more involves going beyond use for recurrence, or for “amount,” to knowing it expresses relative amount. Learning some entails learning two meanings: the determiner meaning, used as a plural equivalent of a with count nouns, and as a singular determiner with mass nouns; and the quantifier meaning, which contrasts with all. Learning as...as or -er...than entails learning that a comparison of two things is involved. This may be easier with as...as than with -er...than if, like Rachel, most children link degree marker as from the beginning with standard marker as (while the link of -er with than takes longer). The explicit link with a standard of comparison may make it clear from the beginning that degree marker as entails such a comparison. And so on.

2. Learning the core meaning also entails understanding that the application of scalar predicates is usually context-dependent for application. What is bigger in one context might be smaller in another context. What is too big in one context can be too small in another. It has long been recognized that certain adjectives like big demand reference to the context for proper interpretation, but the same applies to quantifiers and scalar forms (Moxey & Sanford, 1993; Papafragou & Schwarz, 2006).

3. Third, the acquisition of these forms entails their placement on a scale along with other terms. Knowledge of the forms entails, as with numbers, knowing their relative positions and their order on such a scale. Thus, for example, knowing big entails knowing where it lies on a scale relative to huge, small, large, tiny, and so forth. Knowing A-er entails knowing how it relates to as A as, A-est, etc. Knowing quantifier some entails knowing that it encodes a quantity on the same scale as all.

4. Knowing the placement or point on a scale where a given scalar predicate falls does not necessarily mean that one also understands that the use of the term asserts the lower limit, and that the scale is viewed from below upward. The acquisition of these forms involves acquiring this as well as the first three elements.
So, for example, a child may understand that as...as has to do with the specification of two entities at the same point on a scale (elements 1 to 3), but not that it asserts the meeting of a lower limit at that point. Not until a child understands this will he or she be able to adequately use and understand, among other things, negation of scalar predicates — e.g., that A is not as X as B means “A is less X than B,” not “A is either less or more X than B.”

5. And, finally, the acquisition of scalar predicates entails understanding the pragmatic implicatures involved and controlling the linguistic devices that confirm or deny such implicatures. Among these understandings is knowing that the default pragmatic implicature is that a higher/stronger term is not applicable. Thus, to say A is as X as B usually, as a default, invites the inference that “A is not X-er than B.”

Much of the work to date on the acquisition of scalar predicates has focused on the child’s knowledge of the pragmatic implicatures associated with the forms in question, element 5. However, equally important is ascertaining whether the child has the first four elements in place; without them, the child will not have the option of applying or denying implicatures. Many of the studies in the literature have found that children are more likely to associate implicatures with numbers than with non-numerical scalar predicates. However, in most of those studies, the question of whether the child even understands or knows the meaning of the non-numerical form in question or its scalar nature has not even arisen. A child cannot interpret some in relation to all if the child only knows the determiner meaning of some; similarly, a child cannot interpret most as implicating all or not all if he or she does not know what most means or primarily knows most as a (double) marker for superlative adjectives.

Later Semantic Developments Have Their Roots in Earlier Semantic Developments  The data here suggest that each predicate will have its own history of development and its own status vis-à-vis the child’s knowledge of its scalarity. These forms undergo critical and important changes in the child’s use and understanding at the ages studied here, up through age 6, and beyond. The present data suggest that the earliest that any of these forms have scalar-like semantics (i.e., in relation to elements 1 to 3 above) is around 4 years of age, and that understanding may even come in quite a bit later. Understanding that such forms assert a lower bound, item 4, comes in even later.

Furthermore, the history of a form in a given child’s usage will affect her understanding of that form at a later point in development. Thus, for example, Rachel’s use of many was linked from the start with number through her use of the many and how many in relation to age. This early link with number may mean that whatever scalarity she learned to associate with number may have accrued fairly automatically as well to many. In contrast, a form like some, which may well be learned early as a determiner before it is used as a quantifier, may retain some of an early association with unspecified sets when children begin to understand its use as a quantifier; as a result, it may not be surprising that children interpret some as including reference to a whole set. This contrasts further with a form like as...as, which, according to the data here, is probably never taken by the child as
allowing application beyond the point at which the standard of comparison lies. That is, it is unlikely, given the data here, that children go through any early stage (comparable to those reported for some when children allow it to refer to “all”) at which they interpret A is as X as B as allowing for A to be “X-er” than B.

Recall that children’s insensitivity shown toward conversational implicatures in previous studies has been attenuated if the relevant contextual support has been made available, and has varied from predicate to predicate. I would suggest that one of the reasons that children’s honouring of conversational implicature varies from predicate to predicate and from study to study has had to do with items 1 to 4 above: First, children will have varying degrees of knowledge of the semantics of the terms themselves (I above); for example, they will know what some of the words “mean” and others they will not know; they may know one use of a word (e.g., some as a determiner), but not another (some as a quantifier). Second, children initially fail to appreciate the scalar nature of the predicates (3 above); for example, knowing the “meaning” of quantifier some does not necessarily mean knowing where some lies on a scale relative to all on the same scale. Third, children do not appreciate until late that scalar predicates entail a direction on the scale (element 4). Until these four components of knowledge are in place, it is unlikely that children can come to the critical knowledge that scalar predicates involve default conversational implicatures.

Syntactic Development: Limited Formulas

What do these data reveal about the syntactic contributions to the development of these forms? First, it is apparent that children begin with highly restricted formulas: for example, no more, any more; this many, how many [for age only]; reduplication restricted to very very and really really; much occurring always preceded by too; and so forth. These gradually, bit by bit, piece by piece, get expanded to broader constructions, sometimes extending beyond the adult possibilities. Thus, for example, no more, any more get expanded to some more, one more, and even yes more; this many and how many may be extended to how old, and then eventually to how A. Very very A, really really A might get extended to reduplication of adjectives themselves, and then to reduplication of any type of word, including verbs. Too much, that much might extend to any degree marker + much. A little bit more, a lot more, one more, some more might extend to a little bit some, one...2...3...4...5 bit. As Deg + much brings in Degs initially associated with As (e.g., very, so), the link between quantifiers and adjectives is opened up, then allowing modifiers used with Qs to subsequently move into A modification (a bit A, any A, some A, etc.).

There are moments when we can observe general insights on the child’s part—but these are usually, at least during the earlier stages, relevant to a small subset of the system. For example, Sadie’s transfer of Degs initially associated with As to much seems to have occurred in one step, not each Deg at separate moments. Rachel’s acquisition of as...as for both As and much at the same time is indicative of these developments having a common source. And Rachel’s later use of many as a quantifier with Degs, just as she had used much with them, coincides with her
understanding of the mass/count distinction between much and many. It is as if this latter insight allowed the extension of what had been learned with much to many. But these are all “small” insights, applying to a relatively restricted set of structures, and do not appear to reflect a more global understanding of the syntactic makeup governing the whole set of structures.

Indeed, there is little evidence prior to the later stages (around 4;10 for Rachel) that the children had broad syntactic categories governing these constructs or guiding their acquisition. Indeed, there is some evidence against that possibility. First, there are several cases in which it is clear that a child had certain forms available but did not bring these into other constructs when the option became available; for example, even though Rachel had Deg + much constructs available to her, she did not use Deg + much when she first began producing much more A-er forms; that is, she did not produce forms like so much more A-er; that much more A-er, and the like. Likewise, even though Rachel had by now introduced X + A-er forms into her speech, with X coming from a wide range of modifiers (very, how, so, etc.), when much more A-er emerged, she did not produce any forms like much so A-er or much very A-er.

Second, there is no evidence of any broad understanding of constituent phrase structure governing the children’s early usage. As just mentioned, in some cases, the children had full phrases available for combining, for example, quantifier elements and adjectival elements (too much + more A-er), but they did not draw on these available forms when first combining much with more A-er. There is also evidence that children did not treat forms that in the adult language are constituents as indivisible units, but rather treated the subcomponents as free-standing elements. These children, as others, often use How with falling intonation in answer to adults’ questions like “Do you see how far out we are?” in places where How far, How old, or How big, etc., should be used.

The first evidence of the establishment of some broad overall structure governing the syntax of these forms appears around 4;10, when Rachel begins using modified adjectival forms in conjunction with nominal heads, uses more complex degree-phrase and quantifier forms (e.g., as evidenced in her new “how many years old?” construct), and begins using complex clausal complements.

Later Syntactic Developments Have Roots in Earlier Syntactic Developments As was the case with semantics, it is quite apparent that at every step, the children are drawing on what they have already learned to build new structures; later developments are rooted in earlier developments. The links that children form early on between forms and their meanings, for example, seem to stay tied with those forms for a long time. Thus, for example, Rachel’s association of many with age, and, in turn, age with number, seems to have been an anchor that helped to keep many associated with number throughout, and, further, seems to be associated with her later use of younger and older for “less” and “more.” Similarly, Rachel’s early use of very concentrated on the “absolute” sense, so the link of very with superlatives (“very best”) seems a natural outgrowth of this and may have played some role in her expansion of X + A-er to X + A-est constructs. Rachel’s preference for in the world as a standard of comparison for
X-est, combined with her exposure to world champion, together seem to have led to her attempts at marking the superlative with world’s. Sadie’s early association of the word how in A modification with INTENSIFICATION may have made the later leap to use of how with much for a similar notion a natural outgrowth. Similarly, Sadie’s early use of all with As for intensification may have paved the way for its use with Degs (all that fast) for a similar meaning.

One very interesting place where this type of association may have had a critical impact on syntactic development was in Rachel’s association of standard marker as with degree marker as. She appears to have concluded at one point that the standard of comparison was required when the degree marker as was used. (And she explicitly states that than is required with the comparative, although she does not religiously follow this herself.) This development is interesting in two ways. First, it means that Rachel has drawn a conclusion about structure on the basis of positive evidence alone. We know from the examination of the Kuczaj data, above, that in adult speech to children, degree marker as is invariably accompanied by standard marker as.

Second, this conclusion on Rachel’s part appears quite likely to have forced her to pay attention to the structure of complement clauses. If the as standard marker introduced a clause, she had to find a way to say it, as in her utterance at 5:2:

(89) There has to be as many people...[R says she doesn’t know how to say it, then] There has to be as many people...um...that as many words there are. 5:2.15

CONCLUSION

The data and analyses presented here provide insight into one area of language that involves a complex set of semantically and syntactically related forms. The data from Sadie and Rachel suggest that the acquisition of such forms is a long drawn-out process in which multiple developments are occurring side by side across structures.

At the outset, several questions were raised concerning aspects of development related to these particular forms. Let us return to these to reflect on how these data shed light on them:

(1) Little is known regarding the acquisition of multiple modification:

These data indicate that children work out the structure of multiple modification piece by piece, drawing on prior-learned constructs at every step.

(2) Little is known about the development within each structure (how do uses of each form—very, too, as, than, more, many, etc.—change with time and experience?):
These data suggest both piecemeal learning (e.g., the semantics of Rachel’s use of *too* in *too heavy* and *too late* was not linked with the subsequent semantics of *too* in *too A* constructions) and the development of networks of linked constructs (e.g., Rachel’s early use of *how* and *many* were linked with age and number, and this early connection seems to have supported subsequent developments for these forms; in Sadie’s speech, the entry of Deg forms initially associated with As (*very, how, so*) into constructs with *much* may have provided an impetus for further linking of A and Q structures). Both children’s early use of *than* for “like” seems to have been influenced by notions that were cognitively and semantically accessible, but its semantic development appears to have been related in time to its growing syntactic ties with the comparative.

(3) Little is known about how development across the whole range of structures evolves; for example, how do the developments of *as...as*, *-er...than*, *X enough, too X interact*?

Again, while the data here indicate much early piecemeal learning, they also suggest that linkages across forms occasionally push the child along. As noted, for example, it appears that Rachel’s apparent conclusion that degree marker *as* must be accompanied by standard marker *as* spilled over into her understanding of the structure of comparatives, and these in turn affected her attention to the expression of clausal complements.

(4) Not much is known about individual differences in the acquisition of these forms across children.

These data suggest some commonalities in development across children, some idiosyncrasies. Some commonalities appear to be that children attempt to express certain concepts (*intensification, extreme ends*) earlier than others (*scalar position*), and that children’s syntactic development of these forms may be anchored primarily around certain forms (*more, A-er, and much*) and developments associated with them. Children differ, however, in which exact forms they pick up to express the notions in question (e.g., *very* vs. *so* vs. *-er* vs. *-est* vs. reduplication for *intensification*) and how they go about expanding the modification of As and Qs. For example, in Sadie’s case, she developed a syntactically indiscriminate combining of Deg and Q forms; in Rachel’s case, she progressed through the expansion of *X + A-er, much more A-er*, and *Deg + much* forms.

(5) Further work is needed regarding the acquisition of language versus the acquisition of cognitive understanding.

While this study did not examine this question directly, it has provided indirect evidence that certain cognitive concepts seem more easily accessible to children than others, and this affects their early use of forms that in the adult language are linked with the less accessible forms. Thus, scalarity is relatively inaccessible early on, so younger children use language
that expresses scalar notions (as...as, enough, until, catch up with, etc.) for nonscalar meanings.

(6) Very little is known about children’s understanding of scalar predicates.

These data suggest that children initially misuse and misinterpret scalar predicates. It also suggests that the development of scalar predicates involves several components in development, and that the semantic appreciation of scalarity may go hand in hand with the child’s developing understanding of number.

Among the broader questions posed here were the following:

(7) To what extent do children approach these structures on the basis of broad syntactic categories and structures? That is, does knowledge of syntactic structure guide children’s acquisition of these forms, or do the syntactic structures emerge out of the children’s experience with the forms?

It is clear that these children are not guided by broad syntactic structures in the development of these forms. Rather, the data here clearly point to the development of syntactic structures in a piecemeal fashion, and syntactic structures eventually emerge as a product of development.

(8) Are the developments in the syntactic and semantic (and cognitive) realms autonomous, or do developments in one area influence developments in another?

The answer to this question is mixed. On the one hand, there is clear interaction:

(a) Children’s early limited cognitive understanding leads them to attach accessible notions (INTENSIFICATION, EXTREME ENDS) to forms, both appropriately (very A, so A) and inappropriately (A-er, A-est).

(b) Children’s immature understanding of A-er leads to immature understanding and use of than, and figuring out the meaning of than seems to coincide with figuring out that -er requires than as standard marker.

(c) Determining the meaning of the superlative appears linked with its association with in the world or out of the world; the meaning of degree marker as is tied with its high occurrence with standard marker as.

(d) A child’s early association of a given meaning with a form (e.g., many with age, and, hence, number) can carry over into later developments (the correct association of many with countable entities when it is later used appropriately as a quantifier).

(e) Overextensions of semantic notions can lead to inappropriate syntactic structures (e.g., Sadie’s expansion of INTENSIFICATION to verbs—“he’s drawing galore”).

(f) The development of multiple modification appears to have been anchored around A-er (Rachel) or A-er; too A, A-est (Sadie). It is
not clear whether this is because the children discovered a semantic property—e.g., that the notion expressed by A-er can be modified semantically—or is an outgrowth of the addition of syntactic patterns to their speech (e.g., very bigger, that bigger).

If the former was the case, this would mean that semantics led syntactic development. However, it would be hard to explain (a) why neither child used multiple modification with as and enough (see introduction) and (b) why Rachel’s initial steps revolved only around A-er.

If the latter was the case, it would mean that both children took small, conservative syntactic steps in developing these forms, which ultimately would involve both syntactic and semantic structure.

At the same time, semantic and syntactic developments for a structure are not necessarily tied.

(g) Take, for example, the case of the comparative vs. the superlative. Since the superlative A-est is related to the expression of extreme ends, a notion that is fairly accessible to children, its semantic use is appropriate fairly early, even while A-er is being used immurely. However, in syntactic development, the development of the comparative seems to generally precede/lead the development of the superlative: The association of than with -er becomes solidified earlier than the association of in the world with -est; the introduction of quantifier modifiers (much) into A constructs is tied with the comparative (e.g., much more A-er) more than with the superlative.

(h) Developments regarding the form of degree phrases appear to occur largely independent of their meaning, as the child discovers commonalities across forms (e.g., between Deg + A and Deg + much).

(9) Do children follow a common trajectory in the development of these systems, or is the developmental path followed idiosyncratic and distinct across children?

With regard to semantic development, both Sadie and Rachel seem to have expanded their repertoire of messages from initial notions of intensification, extreme ends, like, through comparative and superlative notions, through to scalar notions encoded through as...as and enough.

However, the data here indicate also that not all children will necessarily follow the same steps in their choice of initial limited formulas, nor in the expansion of these initially limited formulas. For example, in Sadie’s case, the introduction of Q modifiers into A structures and of A modifiers into Q structures led to syntactically quite indiscriminate combining of Deg and Q patterns. In Rachel’s case, on the other hand, the introduction of multiple modification, for As, revolved around modification of A-er constructs and the introduction of much more A-er, and for Qs, around Deg + much constructs. The difference between the two children may have stemmed from the early differences in their attention to premodi-
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fiers of As (Sadie’s preference) vs. postmodifiers (Rachel’s preference). That is, Sadie’s early attention to X + A forms may have influenced her later development of pre-modifiers of bare As and Qs, while Rachel’s early attention to X-er and X-est forms may have influenced her later syntactic expansion, based on A-er, to X + A-er forms.

(10) Does language lead cognitive development, cognitive development lead language, or a mixture of these two?

Again, the answer appears mixed:

On the one hand, the common semantic trajectory shared by Sadie and Rachel seems to have its roots in cognitive accessibility of the notions encoded.

At the same time, these data open the possibility, at least, that it is children’s understanding of scalarity associated with number and the introduction of numbers syntactically into these scalar predicate expressions that may facilitate children’s developing understanding of the concepts underlying these scalar predicates.

As stated at the outset, this research was conducted with the hope of helping to answer some of these open questions, and of providing further insight into the developments of individual lexical structures; into the development of links between structures and of the whole linguistic system; into the influences of cognitive, semantic, and syntactic aspects on the course of acquisition; and into the range of individual differences and range of commonalities in the acquisition of these structures. With the help of Sadie and Rachel, I hope that this chapter provides food for thought on the answers to these questions.

ACKNOWLEDGMENTS

I am very grateful to Ken Drozd, Julian Pine, and Nick Sobin for helpful comments on a previous version of this chapter.

REFERENCES


