**Complement or adjunct? The syntactic principle English-speaking children learn when producing determiner-noun combinations in their early speech**

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Ninio, A. (2019). Complement or adjunct? The syntactic principle English-speaking children learn when producing determiner-noun combinations in their early speech. In A. Ninio (guest editor), The role of grammatical words in young children’s syntactic development: Special issue. *First Language,* 39(1), 33-44.

**Acknowledgments:** Construction of the speech corpora and data analysis were supported under Grant 200900206 to Anat Ninio by the Spencer Foundation. Address for correspondence: Anat Ninio, Department of Psychology, The Hebrew University, Jerusalem 91905, Israel. e-mail: [Anat.Ninio@huji.ac.il](mailto:Anat.Ninio@huji.ac.il)

**Abstract**

In children acquiring various languages, the early mastery of determiners strongly predicts syntactic development. What makes determiners important is not yet clear as there is a linguistic controversy regarding their syntactic behaviour. Some consider determiners to be similar to adjectives and to modify common nouns, while others consider the common nouns their complements. In this paper, we aimed to find out which of the two basic syntactic operations, complementation or adjunct-attribution, children learn when they master determiner-noun combinations in their early speech. In early two-word-long sentences of a large sample of young English-speaking children, we computed Pearson correlations of determiner-nominal combinations with verb-noun combinations and attributive adjective-noun combinations. Determiner-nominal combinations were very highly correlated with verb-noun sentences, whereas the correlation with adjective-noun combinations was much lower. It appears that determiner-noun combinations are a type of complementation. When children learn them early, they apparently learn the syntactic principle underlying such combinations which then can be transferred to other syntactic constructions.

**Keywords**: Syntactic development, Dependency Grammar, complementation,

adjunction, determiners

**Introduction**

Recently, developmental studies have been offering some new evidence for the importance of the early mastery of grammatical words, and especially determiners, for syntactic development. In several studies it was found that in children acquiring various languages, the early mastery of determiners strongly predicts children’s concurrent and especially subsequent syntactic development. Kedar, Casasola, and Lust (2006) found that 18- and 24-month-old infants acquiring English oriented faster and more accurately to a visual target following sentences in which the referential expression included determiners. They concluded that by 18 months of age, infants use their knowledge of determiners when they process sentences and establish reference. Le Normand, Moreno-Torres, Parisse, and Dellatolas (2013) examined the speech of French-speaking children aged 2-4 years and correlated the diversity of word types in various form-classes with the children’s MLU in words. They found that the diversity of word types in grammatical word-types and in particular in the three most frequent grammatical form-classes, namely, subject-pronouns, determiners, and prepositions, was the best predictor of MLU. Szagun and Schramm (2016) studied young deaf children acquiring German who received cochlear implants at an early age. They found that the early type and token frequencies of determiners predict MLU two years later more strongly than the early frequency of lexical words.

These results -- covering different languages and different child populations -- single out determiners as the most important types of words for syntactic development. Obviously, what is relevant for their influence on the mastery of syntax is their syntactic behaviour, not simply their presence in children’s active vocabulary. Most determiners are, in any case, strongly syntactic, for instance, articles do not appear as one-word utterances; as a rule, they occur together with a common noun and form a phrase with it. It follows that when we say that children learn determiners and this correlates with later syntactic development, we are really saying that they learn a phrase consisting of a determiner and a common noun; when such phrases are learned at an early stage, this predicts the concurrent or later level of syntax.

It is a well-established finding that many English-speaking children start to produce combinations of a determiner and a common noun at the very start of word-combinations. For example, Braine (1963) reported on the child Andrew who at 01;8.0 generated many different combinations in which the determiners *more,* *no* and *other* appeared in the first position, for example, *more cereal,* *no water,* and *other pocket.* Similarly, the child Jonathan at 2;0.0 produced *more raisins,* *two ducks* or *other ball*, as well as combinations with possessives such as *Elliot [’s] boat*. The new results of Le Normand et al. (2013) and Szagun and Schramm (2016) indicate that such an early mastery of this particular construction facilitates in some manner the learning of other syntactic combinations, boosting children’s concurrent as well as future sentence complexity more than other types of early combinations.

Szagun and Schramm (2016) explain the importance of determiners for grammar building in German by their being essential for expressing syntactic roles in the sentence. Determiners mark case and hence syntactic roles of the phrases they head. Children who learn early a variety of determiners lay the early foundations for further grammar building. Le Normand et al. (2013) explain in similar terms the importance of determiners for French in that they encode basic grammatical relations in the clause.

Grammatical words, including determiners, having better predictive value for MLU than lexical words appears to conform with the claims of X-bar syntax (Jackendoff, 1977) and the Minimalist Program (Chomsky, 1995), according to which only functional words can be the heads of clauses and phrases. That is, grammatical words may provide the syntactic skeleton of the clause into which lexical words are inserted. As pointed out by Lebeaux (2000), only closed-class elements (namely grammatical words) may govern phrasal and clausal structures, and in order to learn to build sentences, children must acquire this vocabulary and learn its syntactic functioning. Le Normand et al. (2013) and Szagun and Schramm (2016) explain in similar terms the importance of determiners for further grammar building in young children.

The theory of how one particular syntactic construction affects the mastery of others is not yet well established in developmental research. The core idea derived from learning theory is transfer of learning through analogy (Abbot-Smith & Behrens, 2006; Keren-Portnoy & Keren, 2011; Ninio, 2006). Analogy is said to be made possible by the similarity in the learning tasks. What is called the identical‑element theory of transfer attributes the degree of transfer between the source and the target tasks to the overlap of shared task-components, namely, to the extent to which elements, features, or principles are shared by them (Singley & Anderson, 1985; Thorndike, 1913). In the case of transfer of learning from determiner phrases to other kinds of syntactic constructions such as verb-object, verb-adverb or adjective-noun combinations, the basis for analogy is unlikely to be shared words. Most likely is the possibility that what gets transferred is some general principle of syntactic connectivity that operates in determiner-common noun combinations as well as in various other syntactic constructions. That is, we assume the influence on other syntactic phenomena is not because of an overlapping presence of the common nouns in different kinds of phrases but because the early combinations of determiner and common noun may model some syntactic principle that underlies the combination, which can also be applied in other types of syntactic combinations.

Interestingly, it is not quite clear what the syntactic principle is that children may extract from the combination of a determiner and a common noun and use to facilitate the learning of other syntactic constructions. The reason is that it is a matter of linguistic controversy what kind of syntactic relation exists between the determiner and the common noun. The syntactic principle children learn when they master determiner-common noun combinations is either the principle of *head-dependent complementation* or else the principle of *attribution by an adjunct*. There are two basic syntactic relations: complementation, such as the relation of a subject to a verb or an object to a verb; and the adjunct relation, such as the attribution of a noun by a prenominal adjective or of an adjective by an adverb (Andrews, 1985; Crystal, 1997; Lyons, 1968). Complements (or arguments in some texts) satisfy an a priori need of a head-word to become complete, and are in principle required to be present in the sentence, whereas adjuncts are optional and can be omitted without leading to ungrammaticality. Whereas the occurrence in the sentence of complements is determined by the a priori specifications on verbs or other predicate words such as prepositions (namely, their valency), adjuncts can appear in a sentence as long as the attribution is semantically meaningful. Linguistic evidence bears out the centrality of the distinctions: The difference between complementation and the adjunct relation plays a central role in such diverse phenomena as binding and extraction (Hudson, 1990). This dichotomy is fundamental in theories of syntax, cutting across differences of detail (Chomsky, 1970; Huddleston, 1988; Hudson, 1984; Jackendoff, 1977; Matthews, 1981; Tesnière, 1959).

The major difference between complements and adjuncts is in the manner by which the logical predicate-argument relation underlying the syntax is mapped onto a syntactic head-dependent relation. In the case of complements, the head of the syntactic combination is a predicate and the complement is its logical argument. For instance, a transitive verb such as *took* is a two-argument predicate at the head of the verb-object combination such as *took pictures* which we can call f(*x,y*), where the object term *pictures* fills the logical argument role *y* for the function defined by the verb. The verb-object combination receives its syntactic category from the predicate, so that *took pictures* is a type of taking. By contrast, in an adjunct-head combination such as the adjective-noun *big dog*, the predicate f(*x*) is the adjective *big*, and the combination gets its syntactic and semantic category from the logical argument *x* of *big*, which is the noun *dog*. That is, a big dog is still a kind of dog, and *big dog* is still a kind of nominal expression.

Following Abney (1987), some major linguistic theories hold that determiners are the syntactic heads of common nouns, which are in a complementation relation with them. Among the theoreticians holding this view are Hudson (1984) in Dependency Grammar, Jackendoff (1977) in X-bar theory and Chomsky (1995) in Minimalism. Other theories consider determiners to be similar to adjectives and to be attributive pre-modifiers of common nouns in an adjunct relation. Among them are some other versions of Dependency Grammar such as Meaning-Text Theory (Mel’čuk, 1988), Functional Generative Description (Sgall, Hajičová & Panevová, 1986) and Lexicase Grammar (Starosta, 1988) as well as Head-Driven Phrase Structure Grammar (Pollard & Sag, 1994), and Role and Reference Grammar (Van Valin & Foley, 1980). For a review of the controversy and the linguistic arguments raised for each opinion, see Matthews (2007).

The controversy is part of a more general difference of opinion between linguistic theories that consider functional words such as auxiliaries and prepositions as well as determiners to be the dependents of the semantically rich common nouns and nonfinite verbs they are associated with, versus the view that sees the grammatical words as syntactic heads, despite their semantic emptiness or maybe because of it. In the case of determiners and common nouns, one side is convinced that the semantically rich common nouns are the true semantic arguments of verbs and other predicates, and that determiners merely provide more detailed information on the referents such as their definiteness. The other side considers more the syntactic features of the two kinds of words, seeing the determiner as the functional head of the combination.

In this study, we aim to find out which of the two basic syntactic operations, complementation or adjunct-attribution, children learn when they master determiner-common noun combinations in their early speech. Our acquisition data also help settle the linguistic controversy around this question.

We test the two possibilities on a large sample of young English-speaking children’s earliest and shortest word-combinations, namely, two-word-long sentences. Among such short word combinations, there are determiner-common noun combinations with an uncertain syntactic relation; some combinations which clearly express complementation, such as verbs with nominals as complements (i.e., subject-verb, verb-object, verb-indirect object relations), and some which clearly express adjunct relations, namely, attributive adjective-noun combinations. We shall correlate determiner-common noun combinations with two-word sentences containing non-controversial complementation and adjunct relations. If determiner-common noun combinations are complement relations, we expect positive correlations with verb-nominal and predicate-nominal combinations as they represent the same principle of combination, and such are supposed to facilitate each other. If on the other hand determiner-common noun combinations are adjunct relations, we expect positive correlations with adjective-noun sentences, with which they share in that case the syntactic principle of attribution. This correlation is expected to be particularly high as on the hypothesis that determiners are not the heads of nouns, they are specifically thought to be a kind of prenominal attributive adjective (Matthews, 2007), therefore the association between these two categories of use is supposed to be very strong. We expect a much lower correlation with the contrasting type of sentences, as they should share, if anything, only some marginal elements of knowledge rather than the syntactic principle underlying the word-combination.

Because the children in the sample are at the very start of word-combinations, with their best MLU in words being below 2.0 (see Method), we examine their two-word-long word-combinations of the different syntactic types as the representation of their emerging competence. The number of tokens of each type of combination that they are able to produce within the observed time-period should best reflect the facilitation each type receives from the others during this early learning period.

**Method**

***Participants***

The participants were 407 English-speaking children, 196 males and 211 females. The mean age of the children when generating the utterances analyzed was 2;0.27, *SD* = 0;4.03. English-language child samples were taken from the CHILDES (Child Language Data Exchange System) archive (MacWhinney, 2000), which is a public domain database for corpora on first language acquisition. All participants were observed in naturalistic, dyadic interaction of children with their parents. The observations were of typically developing young children with no diagnosed hearing or speech problems, native speakers of English. We systematically sampled from the English transcripts in the CHILDES archive all the projects involving typically developing young children in which the children were under 3;06. This process resulted in the selection of children from thirty-three research projects in the CHILDES archive: the British projects Belfast, Howe, Korman, Manchester, and Wells, and the American projects Bates, Bernstein-Ratner, Bliss, Bloom 1970 and 1973, Brent, Brown, Clark, Cornell, Demetras, Feldman, Gleason, Harvard Home-School, Higginson, Kuczaj, MacWhinney, McMillan, Morisset, New England, Peters-Wilson, Post, Rollins, Sachs, Suppes, Tardif, Valian, Van Houten, and Warren-Leubecker (MacWhinney, 2000). From these projects, we selected the observational studies of 471 different parent-child dyads. We restricted the contribution of each individual child to 300 multiword sentences, starting from the first observation in which they produced them. Ultimately we reduced the sample to 407 children who produced at least one sentence consisting of two words with the syntax of determiner-common noun, verb-subject, object and indirect object, or adjective-common noun. The mean MLU in words of this sample based on the last 50 utterances observed was 1.93, *SD* = 0.54. This implies that the sample is at the start of word-combinations, their mastery of various types of syntactic relations just emerging.

***Materials***

For each utterance marked in the original transcriptions as one uttered by the child, we checked the context to make certain that the line was indeed child speech (and not, for example, an action description or parental sentence). Children's utterances were included only if they were spontaneous, namely, not immediate imitations of preceding adult utterances. Utterances which were altered versions of previous parental sentences, e.g., by the omission of certain words, *were* included. Only complete and intelligible sentences were considered for the current study; utterances marked in the transcriptions as cut off or unfinished, or as containing uninterpretable words (transcribed as xxx or yyy) were excluded.

***Syntactic annotation for grammatical relations***

Two-word-long sentences were parsed manually for syntactic structure, using the Dependency Grammar method. We based our dependency analyses on the detailed descriptions of Hudson’s English Word Grammar (Hudson, 1990) with its online update (Hudson, 2014). We also consulted descriptive grammars of English, and in particular Quirk et al*.* (1985). In this method, pairs of words in a head-dependent relation are identified. In two-word sentences only a single head-dependent relation is possible, so the parsing consisted of identifying and classifying such a syntactic relation if it existed between the two words of an utterance. The syntactic relations acknowledged in Dependency Grammar are very similar to those of traditional grammar, that is, subject, direct object, indirect object, adverbial adjuncts of verbs, attributive adjectives of nouns and so on. As in traditional grammar, in Dependency Grammar there are no null pronouns, traces, movements and other covert syntactic elements and processes. We coded syntactic combinations while ignoring morphological errors and the omission of closed-class elements characteristic of telegraphic speech such as unexpressed copulas and auxiliary verbs. We coded determiner-common noun combinations without specifying the direction of dependency as the direction was the focus of the present study. The underspecified direction of dependency does not refer to word order but to the theoretical question of which word is the head and which the dependent of the combination; in actuality there were no sentences in the corpus where the determiner followed the common noun.

Some telegraphic sentences such as *baba cold* or *baby hurt* are open to interpretation either as expressions of a subject-predicate relation or of an adjective-noun attributive relation in noun-adjective order. Similar ambiguities arise regarding other telegraphic sentences. Many such sentences have the missed copula marked in the transcriptions, such as the *baba cold* example which is transcribed “*baba [\* 0is] cold”*, the starred copula in parenthesis with the zero prefix being the code for an erroneously omitted element. This suggests that the original researchers considered both interpretations and decided on the subject-predicate one. Regardless of the presence of such marking, we based the distinction between alternative interpretations on checking the context of every subject-predicate (telegraphic) sentence in the original observational transcript. We looked for disambiguation in the preceding and following conversation, especially for the parent paraphrasing the child’s telegraphic utterance and the child accepting the expansion; or, the child paraphrasing some complete sentence of the parent’s with the telegraphic utterance. As an example of the former, the parent followed “*baba [\* 0is] cold”* by the clarification question *“baba's cold?”* and the child ratified the interpretation by answering “*mmhm”* (see the transcript of Ruth in the Manchester corpus at age 2;1.17). The sentence *baby hurt* was disambiguated by the second type of evidence. This sentence (said by child #252 of the Morisset corpus at 2;6) was preceded by a long discussion of the baby being hurt, including several clarification sentences by the mother such as “*it’s hurt*” “*did it get hurt*?” and “*is it hurt*?” which the child then accepted, subsequently uttering “*baby hurt*” which was obviously a declarative subject-predicate combination with the same meaning as the previous maternal sentences. In addition, the mother followed the child’s sentence by paraphrasing “*it’s hurt*”, which the child also accepted. If the child’s sentence was uninterpretable, it was excluded from the corpus.

Syntactic annotation of the sentences including form-class tagging was done by graduate students at the Hebrew University with training in linguistics. It relied on extensive coding instructions and a very large collection of annotated exemplars. We checked for reliability by having three pairs of coders blindly recode 1,900 multiword utterances. A checking of all reliability codes showed that the agreement of each coder with the others was above 95%, based on codes actually given by the relevant pairs of coders. Throughout coding, all problem cases were discussed and resolved. Ultimately, each coded utterance was double-checked by another coder.

**Results**

***Determiner, complement and adjunct constructions selected for analysis***

We identified all sentences of two words in which there was syntax of three types of relations:

1. Determiner-common noun combinations;

2. Complement relations headed by a verb or another predicate, that is, subject-verb, subject-predicate, verb-object, and verb-indirect object relations;

3. Adjunct relations headed by a noun, that is, adjective-common noun prenominal attributive combinations.

These sentences form the corpus analyzed in this study. Table 1 presents the corpus by type of syntactic relation. The average contribution of different children to the corpus was 24.6 utterances, *SD* = 34.1; the range was 1-187.

Table 1. The corpus by type of syntactic relation

Syntactic relation Tokens Percent %

Complementation 4,823 48.1

Adjunction 748 7.5

Determiner-common noun combination 4,458 44.4

Total corpus 10,029

***Determiners*** in determiner-common nouncombinations belonged to 7 different detailed form-classes. There were 4,458 sentences of this type; Table 2 presents the distribution of types of determiners in the corpus by form class. Almost half were articles, *a, an* and *the*. The next in frequency were distributive pronouns (sometimes called quantifiers) *all, another, any, anymore, many, more, next, no, other*, and *some*. The next category is of the demonstrative pronouns *that, these, this*, and *those*. Possessors were mostly proper nouns with or without expressed possession clitic *’s*. e.g., *Jonathan’s*. Possessive pronouns consisted of *her, his, me, mine, my, our, own,* and *your.* Numbers were *five, four, hundred, once (*meaning *one), one, three, twenty,* and *two.* Lastly*,* interrogative pronouns in the corpus serving as determiners were *what* and *which*.

Table 2. Distribution of types of determiners in the corpus by form class

Types of determiner Tokens Percent %

Article 2,173 48.7%

Distributive Pronoun 799 17.9%

Demonstrative Pronoun 557 12.5%

Possessor (Noun) 380 8.5%

Possessive Pronoun 345 7.7%

Number 173 3.9%

Interrogative Pronoun 31 0.7%

Total 4,458

***Complement*** relations headed by a verb or predicate were four subtypes, subject-verb, subject-predicate, verb-object and verb-indirect object relations. There were a total of 4,823 tokens in the corpus; Table 3 presents the distribution of the subtypes. Among the complement relations of verbs, the most frequent were verbs with a direct object such as *want juice, cut it, change diaper, get ball, hear tractor, hold it, wear boots, beat drum,* *build tower,* and *eat cookies* . The next frequent were subjects with verbs such as *is it?, I did, I want, you can, birdie eat,* *he cries, you see ?, I fall,* *me play,* and *it hop .* There were a few sentences of verbs with indirect objectssuch as *tell me, give me,* *give her*, *show me,* and *ask Maura*. The most frequent type of complement combination was of a subject and nonfinite predicate such as *where dolly?, baba cold, that big?, it purple, what that?,* *that mine, I done,* and *baby hurt.*

Table 3. Distribution of complement relations headed by a verb or predicate in the corpus by syntactic relation

Syntactic relation Tokens Percent %

Subject-predicate 1,971 40.9

Verb-object 1,779 36.9

Subject-verb 1,038 21.5

Verb-indirect object 35 0.7

Total 4,823

***Adjunct*** relations headed by a noun, that is, adjective-common noun prenominal attributive combinations were relatively infrequent, only 748 tokens were observed. The sentences children produced with this relationship were, for example, *big truck, little lamb* and *pink cup*.

***Correlations***

In order to check if sentences expressing clear complementation are associated with sentences with clear adjunction, we computed Pearson correlation coefficients between the number of sentences of the two types. Unambiguous complementation was represented, as detailed earlier, by all sentences with subject-verb, subject-predicate, verb-object and verb-indirect object relations. Unambiguous adjunction was represented by all sentences with a prenominal adjective attributing a common noun. Although the correlation was significant, *r*(405) = .37, p < .001, it accounted for a mere 13.9% of the variance. This level of positive correlation is expected to occur between the number of tokens children produce of any kind of syntactic combination at this early stage, reflecting the effect of the general developmental level of the children. We might conclude that complementation and adjunction represent different syntactic principles not only linguistically but also in children’s syntactic system.

To test the alternative hypotheses of the study that combinations of determiner and common noun express either the syntactic relation of complementation or of adjunction, we computed Pearson correlation coefficients between the number of sentences of the type determiner-common noun with number of sentences with clear complementation, and compared that to the correlation of determiner-common noun with number of sentences with clear adjunction. Table 4 presents the results.

Table 4. Correlations of tokens of determiner-common noun combinations with number of sentences expressing complementation and adjunction relations, in two-word sentences of young children (N=407)

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Predictor | Number of tokens | Correlation coefficient | Significance level (405 *df*) | Percent variance explained |
| Complementation | 4,823 | 0.79 | *p*<.001 | 63.0% |
| Adjunction | 748 | 0.48 | *p*<.001 | 22.7% |
| Total clear syntax | 5,571 |  |  |  |
|  |  |  |  |  |

Although both correlations are significant at the p <0.001 level, the percent variance accounted for is almost three times as high when we correlate determiner-common noun combinations with complementation (63%) than with adjunction (22.7%). It appears that determiner-noun combination is much more similar in distribution to complementation than to adjunction. This despite the fact that on the hypothesis that determiners are not the heads of nouns, they are specifically thought to be a kind of prenominal attributive adjective, therefore the association between these two categories of use is supposed to be particularly strong. We did find a significant positive correlation but, relative to the correlation with complementation, it was considerably lower. As said above, this amount of positive correlation is expected between any kind of syntactic combination, generated by the general developmental level of the children. By contrast, the correlation with sentences expressing complementation accounts for a much larger amount of variance, much above the random correlation that would probably be generated by any two kinds of word-combinations.

Not only were the correlations with adjunction much lower than with complementation, but, in addition, adjective-common noun combinations were rare while determiner-common noun combinations were very frequent in the children’s speech. Were determiner-common noun combinations a subtype of AN-common noun, we would expect a similar rare occurrence. Instead of this, determiner-common noun is as frequent as complementation of verbs and predicates by nominals. The pattern of results implies that determiner-common noun is a type of complementation, not adjunction.

To further examine the relationship of determiner-common noun combinations with verbal complementation, we correlated them with the three main subtypes of verbal complementation. The correlation with subject-verb combinations was 0.69, the correlation with subject-nonfinite predicate combinations was 0.77, and the correlation with verb-object combinations was 0.57 (combining direct and indirect objects). The correlation coefficients are similar in magnitude to the total of complementation sentences which was 0.79.

**Discussion**

The results of this study indicate that determiner-noun combinations are a type of complementation. As far as the linguistic controversy is concerned, our results support the approach favoured by generative theories such as Chomsky (1995) and by Word Grammar, a major dependency grammar (Hudson, 1984). These theories support a strict separation of syntax and semantics and employ purely formal argument for the definition of syntactic relations. The view that functional words such as determiners head word-combinations rather than the content words of the phrase such as common nouns, fits the theories’ presuppositions regarding the autonomy of syntax and its independence from semantics.

As for syntactic development, our results help explain why the early mastery of determiners is the best predictor of concurrent and future syntactic development, as found by Le Normand et al. (2013) and Szagun and Schramm (2016). When children learn determiners, which means by necessity also learning to combine them with their common noun complements, they apparently gain at the same time the syntactic principle underlying such combinations, which in turn facilitates the acquisition of other, crucially important syntactic relations. What is called the sentence core is composed exclusively of complementation relations; the three core grammatical relations that serve as the basis to the syntactic structure of clauses in English are subject-verb, verb-object and verb-indirect object relations (Foley & Van Valin, 1984). Determiner-noun combinations are not considered part of the causal core but, interestingly, they provide a way to learn more easily the syntactic, combinatory principle underlying the most important part of clausal structure. As we can see from the high correlations with each individual syntactic relation of the complementation type, the facilitation is wide range, and applies to different types of word-combination as long as they are built on complementation. There is a good chance that the results of this study apply to other languages as well as English, since Rispoli (1991) demonstrated that the acquisition by children of the core syntactic relations in different languages is carried out through very similar processes.

It needs further study to understand why these combinations of determiners and their complement nouns provide the best exemplars for learning the principle of complementation. Children do acquire at an early age such verb-based combinations as sentences combining a transitive verb and its object, such as the combinations observed in our corpus, e.g.*,* *get ball; make hole; build tower* and *want juice,* or a subject with a verb as in *baby eat; I kick;* or *she sleep*. On the face of it, such combinations exemplify the complementation relation no less than such determiner-common noun combination as *a baby; the lorry; two books*; or *this box*. Nevertheless, it is the determiners and not the verbs that best predict a child’s syntactic development. The only explanation that can be offered is that, paradoxically, the rich semantics of verbs hinders the extraction of an abstract principle from the sentences in which they participate. Grammatical words such as articles serve to express grammatical content and not semantics; as such they are more suitable to serve as the source of learning and transfer of grammatical content. It appears that this also applies to one of the primary combinatory operations by which syntactic structure is built, namely, head-dependent complementation. Future studies should explore how general this finding is with respect to other grammatical rules and principles. It is possible that grammatical words are in general the best channels for the acquisition of formal linguistic knowledge.

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