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Given and New Information

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بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

{ إِنَّمَا يَخْشَى اللَّهَ مِنْ عِبَادِهِ الْعُلَمَاءُ }

" سورة فاطر ، الآية **:** ٢٨ **"**

(In the Name of Allah, the Most Gracious, the Most Merciful)

{ Say , " Those truly fear Allah, among His Servants, who have knowledge " }

" Surah Creator **,** verse **:** 28 "

(A . Yusuf Ali)

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Praise be to God Almighty for enabling me to finish what I started and helping me to present this work .

I would Iike to express my deep gratitude to my supervisor Prof. Dr. Abd Ali Nayif for His valuable guidance and advice during the research period .

I would Iike to thank all the professors for providing information and support during my academic career .

Dedicated

I dedicate this research to my parents .

(For their endless love , support and encouragement)

ABSTRACT

English and many other languages allow flexible ordering of main and subordinate classes in complex sentences . Processing, discourse-pragmatic and semantics have an impact on the ordering of information .

Three-year-olds, 5- year-olds, and adults heard complex sentences containing main and subordinate clauses with differing informational status. Using an act-out method, we analyzed participants' sensitivity to the ordering of new/given information and its interaction with clause order. All age groups changed the order of information to given–new when exposed to a new– given structure, whereas only adults changed the clause order to subordinate–main c l a u s e w h e n exposed to the reverse.

We suggest that children are sensitive to information structure but not clause order in complex sentences. The results are discussed in the context of possible limited processing capacities or understanding of clause order function in complex sentences.

الخلاصة :

تسمح اللغة الإنجليزية والعديد من اللغات الأخرى بالترتيب المرن للجمل الرئيسية والفرعية في الجمل المعقدة .تؤثر المعالجة والخطاب البراغماتي والدلالات على ترتيب المعلومات .سمع الأطفال البالغون من العمر ثلاث سنوات وخمس سنوات والبالغون جملًا معقدة تحتوي على جمل رئيسية وفرعية ذات حالة إعلامية مختلفة .باستخدام طريقة التنفيذ ، قمنا بتحليل حساسية المشاركين لترتيب المعلومات الجديدة / المقدمة وتفاعلها مع ترتيب الجملة .غيرت جميع الفئات العمرية ترتيب المعلومات إلى "معطى - جديد" عند تعرضها لهيكل معين جديد ، في حين أن البالغين فقط غيّروا ترتيب الجملة إلى ثانوي - رئيسي عند تعرض الجملة للعكس .نقترح أن الأطفال حساسون لهيكل المعلومات ولكن ليس ترتيب الجملة في الجمل المعقدة .تتم مناقشة النتائج في سياق قدرات المعالجة المحدودة المحتملة أو فهم وظيفة ترتيب الجملة في الجمل المعقدة.

Introduction

English and many other languages allow flexible ordering of main and subordinate clauses in complex sentences .

Information processing , discourse-pragmatics, and semantics have an impact on the ordering of information.

Three-year-olds, 5- year-olds, and adults hear complex sentences containing main and subordinate clauses with differing informational status. Using an act-out method, we analyzed participants' sensitivity to the ordering of new/given information and its interaction with clause order. All age groups changed the order of information to given–new when exposed to a new– given structure, whereas only adults changed the clause order to subordinate–main when exposed to the reverse.

We suggest that children are sensitive to information structure but not clause order in complex sentences. The results are discussed in the context of possible limited processing capacities or understanding of clause order function in complex sentences.

English and many other languages allow some flexibility inthe way main and subordinate clauses can be ordered in a complex sentence unit. However, there are a number of factors such as information processing, discourse-pragmatics, and semantics that have an impact on the ordering of clauses in any given sentence. Following Diessel (2008), we assume that the ordering and processing of complex sentences can be explained as a result of competing motivations between processing factors and discourse-pragmatics (i.e., given's or newness) .

Studies by Diessel (2008) have suggested how speakers might resolve the competition between these factors, but it is less clear when and how children acquire these different strategies , how they affect their comprehension , and production of complex sentences during different stages of their language development. To our knowledge, there is no experimental study that has investigated this phenomenon from the perspective of first language acquisition. The present study aims to fill this gap by examining how these factors affect complex sentence comprehension.

Chapter one

Ordering Effects in Complex Sentence Units

Complex sentences contain one main and at least one subordinate clause. Languages such as English and German (and many more) permit main and subordinate clauses to occur in more than one position. For example, a native speaker of English can form a complex sentence either with the subordinate clause in the initial position as in (1) or with the subordinate clause in the final position as in (2):

1.When Peter came home[SUB] ,Mary was cooking a meal[MAIN] .

2.Mary was cooking a meal[MAIN] when Peter came home[SUB].

However, studies report that speakers tend to have a preference for one order over the other (2008), depending on various factors.

In his corpus study of English adverbial clauses, Diessel (2005) found that speakers have a preference for placing adverbial clauses after the main clause, whereas adverbial clauses in initial position are less frequent. He reports that adverbial 38% clause fronting is at whereas 62% occur in final position, and suggests that this relates to processing factors in utterance planning and comprehension. He argues that the processing load for the speaker is much higher if subordinate clauses occur before main clauses in a complex sentence unit, becausethe speaker has to keep the subordinate clause in working memory while planning the main clause (see also Arnold, Wasow, Losongco, & Ginstrom, 2000; Ferreira & Dell, 2000; Wasow,) .

However, different kinds of adverbials show differing patterns of use, with conditional adverbials occurring more often in proposed position than temporal adverbials that in turn are more frequently proposed than are causal adverbials (DiesseI , (2008). Thus, the precise semantics of the particular clause plays a role. In contrast, if the main clause precedes the subordinate clause, each clause can be planned successively, which reduces the processing load for utterance planning (cf. Diessel, 2005, pp. 458–459). The same holds true from the hearer perspective. Processing load is higher if the hearer has to keep the whole adverbial clause unit in working memory until the link to the main clause is established (Hawkins, 1994, 2004). However, processing factors do not explain why speakers of English also make use of adverbial clauses in initial position. In line with Chafe Ford (1993), Given and Thompson Diessel (, p. 459) argues´ that the use of utterance-initial adverbial clauses is due to discourse-pragmatic factors: initial adverbial clauses are "commonly used to organize the information flow in the ongoing discourse; they function to provide a thematic ground or orientation for subsequent clauses." Taking these two factors into account, DiesseI , (2005) argues that the ordering of main and subordinate clauses is motivated by competing forces from discourse-pragmatics and processing . Processing factors are overridden by discourse-pragmatic factors in those cases in which adverbial clauses precede their main clauses (cf. Diessel, p. 451) .

Discourse-Pragmatic Factors

The present study makes use of the widely used distinction between given and new information that focuses on the degree of accessibility of referents in discourse (Allen, 2000; Allen, Skarabela, & Hughes, 2008; Arnold et al., 2000; Guerriero, Oshima-Takane, & Kuriyama, 2006; Haviland & Clark, 1974; Hughes & Allen, 2006; Mishina- Mori, ; Skarabela,). Whereas Chafe and Du Bois suggest three categories of givenness and newness (i.e., nonnew, accessible, and new), other researchers (e.g., Allen, 2000; Allen et al., 2008; Arnold et al., 2000; Guerriero et al., 2006; Hughes & Allen, 2006; Mishina-Mori, 2007; Skarabela, 2006) make a binary distinction between given's and newness, whereby a referent is considered to be given if it occurs in the previous utterances, and new otherwise .

Chafe and Holliday also define given's as information that has a recoverable antecedent in memory (see also Bock & Irwin, 1980). In this study, we follow Arnold et al. in using a binary given/new distinction that focuses on the degree of accessibility of referents in discourse (i.e., on whether a referent has been mentioned in the previous discourse or not) .

Information flow and word order

The impact of given and new information on language use has been extensively investigated by researchers from the perspective of word order (e.g., Arnold et al., 2000; Birner & Ward, ; Bock & Irwin, 1980; Bresnan, Cueni, Nikitina, & Baayen, ; Brown, Savova, & Gibson, 2012; Clifton & Frazier, ; Ferreira & Yoshita, 2003; Kaiser & Trueswell, 2004; Siewierska,) and referent encoding (e.g., Ariel, 1988; Du Bois, 1987; Gundel, Hedberg, & Zacharski,). The bulkof studies conducted on the ordering of given and new information in sentences is concerned with processing advantages for one order over the other. There is relative agreement for the existence of the so-called given–new strategy proposed by Haviland and Clark They argue that there is a processing advantage for given information occurring before new information for the hearer: the hearer has to (a) identify what is given and what is new, (b) link the given information to an antecedent in memory (i.e., information already existing in memory), and (c) link the new information to the given information in memory (see also Clark & Clark,; Levelt,). They found evidence for this, reporting that reaction times for sentence comprehension were much faster if the information in their test sentence was linked to some information in the previous (i.e., context) sentence. When there was no direct link to the previous sentence, the reaction times were much slower (see also Clark & Sengul, ; Garrod & Sanford,) .

The given-before-new principle was also found to have an impact on the speaker from the perspective of utterance planning . Note that these studies define " new information "

The rationale for the given-before-new principle from the perspective of utterance planning is that, if given information precedes new information, the given information can be prepared earlier for production and gives the speaker more time to plan and produce the less available (i.e., less recent/newer) information.

For example, Bock and Irwin (1980) found a processing advantage for given–new over new–given sentences in the faster availability of given information compared to new information for the speaker. Arnold et al. investigated the notion of given and new information in association with syntactic heaviness (i.e., the longer the linguistic referent, the heavier it is). Their corpus data of English revealed that speakers tend to postpone newer and heavier elements and that new elements tended to be postponed even when the referents were relatively equal in length.

Ferreira and Yoshita. Found that speakers of Japanese tended to shift the order of information from new–given to given–new if the referents in the target sentence were presented in a scrambled word order (i.e., new before given). This is particularly interesting, because Japanese is a left-branching language whose speakers make use ofdifferent parsing strategies than do speakers of right branching languages such as English(see also Diessel ,2008; Hawkins) . This supports the assumption thata preference for given before new information can beconsidered a cross-linguistic tendency (Clark & Clark,) .

The given-before-new principle has also been observed inthe complex-sentence level. Diessel argues that initial adverbial clauses tend to establish a link between the previous discourse

and the following main clause, suggesting that adverbial clauses have particular discourse- pragmatic functions with respect to their position (see also Chafe, ; Ramsay, 1987; Verstraete, 2004). Thus, placing adverbial clauses before their main clauses may have a similar advantage in sentence processing and utterance planning as the ordering of given-before-new information seen in noun phrases in simple sentences. That is, in comprehension, initial adverbial clauses referring back to the previous discourse help the hearer to access given information very quickly and give them more time toestablish a link in memory for the newer informationencoded in the main clause. From the perspective of utterance planning, delaying the less accessible (i.e., newer) information encoded in the main clause gives the speaker more time to plan the utterance .

Given and new information in language

There are a large number of studies focusing on how children build up a repertoire of strategies in order to express different levels of in formativeness. In what follows, we give a brief summary of what has been found on the level of one-word utterances, two-word utterances, and referent encoding. However, none of these studies has investigated this phenomenon in the domain of complex sentences .

In order to discriminate between given and new information, children first need to notice a difference between them.

Research suggests that infants have the ability to discriminate between new and old elements long before they start to talk (Baker & Greenfield, 1988; Greenfield, Muir & Field,). This sensitivity is also apparent once children start to talk. Baker and Greenfield (1988) found that at the one-word stage, children's single word utterances primarily encoded new or uncertain elements (cf. Baker & Greenfield, 1988, p. 25) and that children only started to verbalize given elements (in combination with new elements) at the two-word stage. Moreover, children who were capable of producing two-word utterances continued to show a tendency to verbalize new information in their one word utterances (see also Leonard & Schwartz, , and Narasimhan & Dimroth, 2008) and to omit given elements .

Baker and Greenfield (1988) argue that children might showa preference to verbalize new elements in their one-word utterances because they are lacking alternative strategies such as the use of stress or referring expressions to express different degrees of in formativeness .

However, children may also prefer to verbalize new elements when labeling objects, because new elements are commonly associated with moving objects whereas given elements commonly refer to static objects (cf. Baker & Greenfield, , p. 5; see also Lempert & Kinsbourne, ; Nelson,). This points to the possibility that children may prefer to verbalize names of new (dynamic) objects because they catch their attention more easily than given (static) objects. It is therefore not entirely clear to what extent children are sensitive to the new–given distinction and its relation to how one talks about referents, at the one-word stage. As children grow older, they become more experienced language users and can apply other strategies such as using stress or pronouns to label the information status of referents. For example, studies by Mac Whinney and Bates and Wieman reported that children tend to use stress to highlight new elements. However, a recent study by Grunloh, Lieven, and Tomasello suggests that¨ the use of stress to signal new information is not fully adult like for German speaking children who have just entered the multiword stage.

Another strategy for distinguishing the information status of referents that children seem to have some grasp of early on is the use of nominal referring expressions. In adult language, there is a cross-linguistic tendency for newreferents to be encoded by lexical forms, whereas given referents tend to be encoded by pronominal forms or omitted altogether (cf. Ariel, 1994; Du Bois, 1985, 1987; Given,1983 **;** Gundeletal.,1993).

There is a large body of studies using naturalistic´ data that seem to suggest a sensitivity to the use of nominal versus pronominal and definite versus indefinite referring expressions in children cross-linguistically (e.g., for Inuktitut, Allen, 2000; for German, Allen et al., ; and Bittner, ; for English and Japanese, Guerriero et al., ; for English and Spanish, Gundel, Sera, & Page, 1999; and Gundel, Sera, Kowalsky, & Page, ; for Hindi, Narasimhan, Budwig, & Murty, ; for Dutch, English, and French, Rozendaal & Baker), with some studies showing relations between language- specific patterns of usage in child-directed speech (CDS) and patterns of acquisition. Experimental studies by Matthews, Lieven, Theakston, and Tomasello and Salomo, Lieven, and Tomasello found that 3- to 4-year-old English and German-speaking children were sensitive to how to encode given and new referents when exposed to questions of the type "What happened?" or "What is X doing?" Children tended to reply with a lexical noun when the referent had not been mentioned in the previous context, whereas pronouns or null reference were more commonly used to encode given referents (see also Graf, 2010, for German; and Serratrice, 2005, for Italian) .

However, there are also studies showing that children's use of referent encoding is not fully adult-like. De Cat (2011) found that French-speaking children who were 2 years, 6 months (2;6) to 3;3 were generally able to make adult-like use of definite and indefinite forms of reference when reporting picture book stories .

However, errors were observed in the use of indefinite forms to refer to given information when previous reference to the entity occurred on an earlier page in the book. She attributes this to difficulties in determining what counts as "new" as a function of the visual context, rather than to a lack of knowledge of how to encode different informational forms. However, a large body of studies reveals developmental changes cross-linguistically in children's abilities to maintain discourse cohesion in narrative that signal both language-general and language-specific influences on the pattern of acquisition (e.g., for a detailed overview and study, see Hickman & Hendriks, 1999). In addition, in a video description task, Theakston (2012) found that 5-year-old English-speaking children are more likely to erroneously use pronominal forms for new referents in subject position than in object position, whereas adults reliably use lexical forms for new referents in both sentence positions.

Together, these findings suggest that children only gradually learn an adult-like use of referent encoding.

Narasimhan and Dimroth (2008) investigated whether 3- and 5-year-old German-speaking children have a preference for the ordering of given and new information. In an object-naming task, they presented children with two objects, one of which was new and one they had seen before. The children were then asked to label the objects. The children preferred to label the new object before the given one, in contrast with the ordering normally associated with adult speech. In order to see whether the children's labeling might be a reflection of the input, Narasimhan and Dimroth (2008) also tested their caretakers on the same task. In contrast to the children, the caretakers preferred to mention

given objects before new objects, thus suggesting that the children's ordering preference is not directly related to their input but rather can be considered a cognitive bias.

What these studies show is that children gradually acquire some sensitivity to different levels of in formativeness but that even for simple utterances this may not be fully adult like until relatively late in language development (e.g., beyond 5 years of age). Of interest in the current study is whether similar sensitivity to new and given information might be observed for complex sentences, because children are learning to comprehend and produce these during the same period.

Chapter two

Development Studies of Complex Sentences Ordering

Diessel , (2004) provides the most comprehensive (observational) study that examines the ordering of main and adverbial clauses from a developmental perspective. Although Diessel (2004) considers a larger number ofadverbial clauses, there is particularly detailed data for the acquisition of when-clauses. Investigating corpus data from five English-speaking children between the ages of 1;3 and 5;1, he found that children younger than 3;0 prefer to put when-clauses into final position whereas sentence-initial when-clauses occur only later; before the age of 3;0, only 6.5% of when-clauses occurred in initial position. Between 3;0 and 4;0, the number increased to 31.3% on average,and between 4;0 and 5;0 % (cf. Diessel, 2004, pp. 168–169). Following Havilland and Clark Diessel relates this preference for final when-clauses to the two factors of processing load and discourse- pragmatics; he argues that they have a significantly greater effect in language learning children, although they are still important in adult language. With respect to processing load, he argues that children's early subordinate clauses primarily occur in final position because of greater limits on their working memory in comparison to adults. Diessel's argument is based on Hawkins's parsing theory in which the relative distance or "recognition domain" between constituents in a sentence affects ease of parsing .

That is in comprehension, if the when-clause occurs after the main clause, the main clause can be processed as an independent clause unit and the when-clause can be processed afterward, with only a short recognition domainbetween the main clause and the adverbial when in which the relation between the two clauses is established. In contrast, the human parser needs

more time to recognizethe relationship between the when-clause and the main clause in when main orderings because the adverbial when must be kept in working memory until its relation to the mainclause can be resolved, requiring greater processing resources. Diessel also applied Hawkins's theory to utterance planning. That is, if the when-clause is producedin initial position, the speaker has to keep it in workingmemory while planning the main clause because the when clause cannot be uttered as a separate intonation unitif it is embedded in a complex sentence. However, if the when-clause is placed in final position, the speaker can plan the two clauses successively. The main clause can be uttered as a separate intonation unit, which can function asa simple sentence (cf. Diessel,), thus giving the speaker more time to plan the when-clause. Thus, Diessel (2004) argues that children do not produce initial when-clauses before the age of 3 because their processing and working memory capacities are too limited .

Diessel's results can also be related to those of Clark who reports that children start to produce coordinate clauses before they use subordination strategies. She found that young 3-year-olds tended to produce adverbial clauses in which the adverbial clause occurred after the main clause, whereas initial adverbial clauses were only produced by the older 3-year-olds . She suggests that children start to produce coordinate clauses and before main- adverbial clauses earlier than sentences with an adverbial-main clause order because coordinate clauses and main - adverbial orders tend to encode events in the order of their mention .

Whereas adverbial-main structures tend to encode events in which the order of mention and clause order do not correspond with each other. According to Clark (1973), these latter structures make greater demands in terms of children's working memory capacities and thus emerge only later.

From the discourse-pragmatics viewpoint, Diessel (2004) further argues that children might not produce initial when-clauses before the age of 3;0 because they serve a discourse- pragmatic function that is not needed in early child discourse. Their function is to establish a link to the previous discourse by enhancing discourse coherence (seealso Chafe, ; Ford, 1993; Given, ; Thompson,´) . However, Diessel , (2004) suggests that, in early child discourse, children are much more likely to talk about referents that are physically present than about referents that have only been mentionedin the previous discourse. Similarly, Silva (1991) found that children prefer to place adverbial clauses such as when and while in initial position with increasing age (between 4;10and 11;11) because they become more aware of their discourse-pragmatic function .

Although Diessel (2004,) attributes the low occurrence of initial adverbial clauses in children's early speech to factors from discourse-pragmatics and clause processing, he did not conduct a systematic analysis of the information status of when-clauses with respect to the previous discourse. Thus, it is impossible to determine from these corpus data the extent to which the early scarcity of when-clauses in initial position reflects processing versus discourse- pragmatic factors. Furthermore, it is not clear exactly how these factors might be expected to interact.

Chapter three
Conclusion

Pedagogical treatments of new and given information are found in most excellent pronunciation books. However, my experience in teaching this topic indicates that students, even at a high level of proficiency, do not easily understand the pragmatic force of intonation in either their own spoken production or in what they hear from others. We have two models of how to teach information structure, but the two models seem contradictory in the kinds of predictions they make. An independent way of determining which model is pedagogically better and linguistically more accurate would be very helpful in more effectively teaching this important function of intonation .

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