

RESEARCHING LINGUISTIC ARGUMENTATION WITH LINGUISTIC STRATEGIES IN GRAMMATICAL KNOWLEDGE OF L1

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INTRODUCTION:

Since the beginning of the twenty first century, there has been a renewed interest in grammar teaching in L1 classrooms, both in research and in policymaking (Hudson & Walmsley, 2005; Locke, 2010). This interest has become even more apparent in recent years since the well-rehearsed argument emerging in the 1970s that grammar education has no impact on literacy development (e.g., Andrews, 2005; Elley, Barham, Lamb, & Wylie, 1975; Graham & Perin, 2007) is starting to crumble. While traditional parsing exercises generally fail to improve students' writing, there is a growing body of empirical evidence indicating positive effects of contextualized grammar teaching on writing development (e.g., Fearn and Farnan, 2007; Fontich, 2016; Jones, Myhill, & Bailey, 2013; Myhill). Most grammar teaching in L1 contexts is still fairly 'traditional', in two distinct but related senses (cf. the systematic literature review of Van Rij, De Swart, & Coppen, 2018). First, grammar in L1 contexts is mostly traditional in terms of its teaching approaches (e.g. focusing on rules, parsing isolated sentences, labeling parts of speech). Second, it is traditional in the sense that it uses a traditional body of grammar knowledge (e.g. structuralistic parts of speech terminology) – cf. Van Rij and Coppen (2017). The term 'traditional' henceforth refers to both pedagogical and linguistic aspects of grammar teaching in this paper. Elements of these traditional aspects of school grammar can even be perceived in modern pedagogical approaches, such as Halliday's Systemic Functional Grammar (SFL)

(Halliday & Matthiessen, 2004; see also Berry, 2016 and Myhill, 2018). For example, Jones and Chen (2012) and Macken-Horarik, Love, and Horarik (2018) report that teachers in Australia struggle with making connections between traditional grammatical terminology and rhetorical choices in writing, even though this is what the official ACARA curriculum, which leans heavily on functional grammar, demands of them. As a result, teachers resort to (more) traditional forms of grammar teaching. Much of grammar teaching across the globe can therefore be considered traditional in either a pedagogical or a linguistic sense, or in both respects, even when a country's educational ideology promotes something different (Fearn and Farnan, 2007; Horn, 2003; Lefstein, 2009; Van Rij et al., 2018; Watson, 2015). One of the main reasons why grammar education contends with a traditional image relates to teacher knowledge. Research shows that language teachers generally lack sufficient metalinguistic knowledge (e.g. Alderson & Hudson, 2013; Sangster, Anderson, & O'Hara, 2013; Van Rij, Wijnands, & Coppen, 2019) and experience low self-confidence, even anxiety, in the linguistic domain (Giovanelli, 2015). Teaching grammar based on real insights rather than rule soft thumb presents teachers with severe challenges, both when teaching grammar in isolation and when teaching grammar effectively in the context of writing (cf. Myhill, Jones, & Watson, 2013). Teaching grammar based on parsing isolated sentences puts a less cognitive strain on teachers, who mostly lack the knowledge and confidence to teach

grammar insightfully. Moreover, research into teacher beliefs has revealed that teachers generally tend to adopt teaching styles that match the content and pedagogies which they have experienced themselves as learners (e.g. Phipps & Borg, 2009; Watson, 2015). This way, more traditional forms of grammar teaching remain persistent in education. Besides, Van Rij et al. (2018) found that the educational literature on L1 grammar teaching is not up-to-date with insights from modern linguistic theory, and predominantly addresses traditional grammatical concepts (e.g., subject, noun, and verb) rather than potentially useful (meta)concepts from modern linguistics (cf. Section 1.1). This is likely a result of current practice and policy, but it may also be indicative of a similar lack of linguistic knowledge for educational researchers.

It can therefore be concluded that both current grammar teaching and research into L1 grammar teaching are mainly traditional. Still, traditional grammar education is subject to much criticism (Giovanelli, 2015; Hudson, 2004), the main points of critique being that it focuses on rules of thumb and lower-order thinking rather than on real conceptual insights (Berry, 2015; Coppen, 2009; Myhill, 2000; Van Rij et al., 2019) and that it is chiefly concerned with 'rules and compliance' and 'error eradication and notational rules' (Myhill, Jones, & Wilson, 2016; Myhill & Newman, 2016). Grammar education should rather be about talking and reasoning about language on an informed level. Understanding the relevant linguistic concepts and meta concepts is one of the greatest challenges for grammar teachers (Fontich, 2016; Hulshof, 2013; Myhill, 2000; Ribas, Fontich, & Guasch, 2014).

The studies cited above show that it is possible to teach traditional grammatical concepts without adopting traditional pedagogical means. However, making students reason or talk about traditional grammar in

writing remains difficult, since students find it hard to conceptually grasp linguistic metalanguage (Watson & Newman, 2017).

In line with this, some scholars have suggested that bridging the gap between linguistic theory and L1 grammar education can solve the problem of a limited conceptual understanding of the grammar (e.g., Carter, 1982; Hudson, 2004; Mulder, 2010; Van Rij & Coppen, 2017; Van Rij et al., 2018), claiming among other things that (meta)concepts from modern linguistic theory can be used to strengthen traditional grammar education. For example, understanding the passive voice (a notoriously difficult grammatical structure, see Myhill, 2003), could benefit from an approach that focuses on the so-called 'mapping problem' in the framework of Lexical-Functional Grammar (cf. Bresnan, Asudeh, Toivonen, & Wechsler, 2016), introducing modern linguistic meta concepts such as semantic roles, which remain undiscussed in traditional grammar (see Van Rij et al., 2018). Another example is how the meta concept of valency can be used to distinguish between (more or less) obligatory and non-obligatory syntactic elements in a sentence (i.e., the difference between objects and adverbials) – see Perini (2015).

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LINGUISTIC CONCEPTS AND META CONCEPTS:

When the modern linguistic theory is turned to for enriching traditional school grammar, the question arises which (meta)concepts are suitable for this enrichment. Different linguistic schools (e.g. generative linguistics, cognitive/construction grammar, SFL) emphasize different aspects of sentence-

level linguistics, holding different views on language acquisition and structure. To avoid adhering to any one particular linguistic school, and to bene-fit from the full width of modern linguistic theory, Van Rijt and Coppen (2017) have conducted a Delphi study among linguistic experts from different backgrounds. The experts reached a general agreement among the 26 crucial (meta)concepts from the syntax-semantics interface.

In grammar education, for instance, 'valency' could be considered a meta concept, which can be used to enhance understanding of other grammatical concepts, such as direct and indirect objects. In another example, the meta concept of modality could be used as a meaningful over-arching metaconcept to discuss traditional concepts such as modal adverbs and modal auxiliaries.

According to Gombert (1992, p. 191), metalinguistic under-standing encompasses two types of relevant knowledge: declarative knowledge, which is the knowledge regarding grammatical content, and procedural knowledge, which is the ability to effectively work with this knowledge. Declarative and procedural knowledge are mutually intertwined (see also Moseley et al.,2005), and thus both are required in effective grammar education. Ribas et al. (2014) make a similar assumption in saying that '(...) there are close ties between grammatical concepts and studying and reflecting procedures, and that the latter is not merely an unimportant, superficial part of the way language is perceived and language knowledge is constructed' (2014, p. 15).

In the current study, it is assumed that the declarative knowledge of grammar should entail more than just the concepts from traditional grammar, but also (meta)concepts from modern linguistics theory. It is also assumed that the concomitant procedural knowledge should involve more than just the rules of thumb and audit questions that are

dominant in traditional grammar education. Rather, working with modern linguistic (meta)concepts requires a type of reasoning that is more common for linguistic experts (Fontich & García-Folgado, 2018, p. 31; Honda & O'Neil, 2007; Kuiper & Nokes, 2014, Ch. 1; Tallerman, 2015). When lin-guists are trying to grasp a syntactic structure, they will try to syntactically manipulate the sentence under scrutiny, for instance, by constructing an analogous example, topicalizing constituents, or by verifying whether a certain element can be omitted. This repertoire of linguistic reasoning components is crucially important for linguists trying to describe the language reality. Although traditional grammar education suggests otherwise, most real-life sentences cannot be parsed or analyzed unambiguously (Coppen, 2009), in part because conceptual categories themselves are sometimes 'fuzzy' (Kuiper & Nokes, 2014). The present study is focused on grammar teaching per se, independent of any con-textualization. Therefore, findings are also of importance in more contextualized approaches to grammar (see discussion section).

THE CURRENT STUDY:

There are good theoretical grounds to assume that a pedagogical approach to grammar teaching targeting linguistic meta concepts and linguistic reasoning is crucial for a deeper understanding of the subject matter.

In total, students were exposed to twelve hours of contact time in the intervention, consisting of a mixture of lectures and seminars. Before each seminar, an assignment had to be submitted which consisted of reasoning tasks that were aimed at applying the declarative and procedural knowledge described in the present paper. The intervention the students participated in was designed in such a way that meta concepts from modern linguistic theory would be the focus of the course, making

appropriate connections between them and traditional parts of speech. The intervention focused on four somewhat related meta concepts: predication (cf. van Eynde, 2015), valency(cf. Perini,2015), complementation(Perini,2015)and modification (cf. Morzycki, 2015), although if the occasion called for it, other meta concepts were taken into account as well. Several more modern concepts, related to these meta concepts, were also introduced, involving concepts such as agent, patient, argument, and adjunct. These concepts can all be used well to enrich the understanding of traditional parts of speech. All main traditional parts of speech were covered in the intervention. (See e.g., Tallerman (2015), or Van Rijt and Coppen (2017) for general explanations of the concepts from the intervention.) In Appendix 1, an overview of the intervention is given.

Finally, the second author of this paper, who acted as the interventions' instructor, also paid attention to linguistic reasoning in the form of good practices, demonstrating how linguists apply and combine subject-specific procedural and declarative knowledge.

The intervention was implemented in the first term of the academic year, meaning that students only had their knowledge from secondary school.

Qualitative analysis of students' reasoning

The student reasonings were analyzed qualitatively and inductively to avoid missing any relevant data, following the constant comparison method. The first and fourth authors of the current paper first engaged in open coding via Atlas aiming to capture any possibly relevant data regarding grammatical concepts and linguistic reasoning from traditional grammar and the meta concepts from Van Rijt and Coppen (2017). Once the open coding had been completed, we iteratively and systematically re-examined our prior coding to achieve consistency. Both researchers

reached absolute agreement on the coding, solving any differences in opinion through discussion. For the linguistic (meta)concepts, we distinguished between explicit occurrences and implicit occurrences. If a student would describe a particular concept in detail without labeling it, it was coded as an implicit mention, allowing us to measure the effects of explicit metalinguistic knowledge versus implicit metalinguistic knowledge. A typical example is that students would sometimes refer to 'the person acting', which we coded as an implicit reference to the concept of an agent. In the present study, therefore, it is assumed that declarative knowledge can manifest itself both implicitly and explicitly.

ANALYSIS OF GOOD QUALITY GRAMMATICAL REASONING:

To analyze which variables were most strongly related to the quality of students' grammatical reasoning, multiple regression analyses were carried out. Because the grammatical reasonings are nested within students, a multilevel design was adopted which allowed for a random effect of students on the intercept and with a fixed slope. This design was used because it was assumed that there may be differences between students, but that the effect of the various types of declarative and procedural knowledge is similar for all student reasonings.

The relatively low number of words might be explained by the fact that in traditional grammar teaching, no such lengthy reasoning is called for, and that therefore students are unfamiliar.

When students tackle grammatical problems, they make use of several types of concepts, the concepts from traditional grammar being the most frequent, in particular explicit ones. Hardly any implicit references to traditional grammatical concepts could be

found in the data, suggesting that students are reasonably familiar with these concepts.

SUMMARY OF STUDY OBJECTIVES:

The present study pursued three objectives. First, it aimed to provide a deeper understanding of the characteristics of students' grammatical analyses in terms of their grammatical or linguistic (meta)concept use (declarative knowledge) and their linguistic reasoning (procedural knowledge). The second objective was to examine which of these characteristics are associated with good quality grammatical reasoning.

Other good predictors for the quality of students' grammatical analyses, apart from using explicit concepts from traditional grammar and explicit meta concepts, are procedural: the application of linguistic manipulations and the use of inferences. However, even though linguistic manipulations were also covered in the intervention, students showed no significant increase in their application. This may be attributed to the fact that the interventions' focus was predominantly on making connections between linguistic meta concepts and concepts from traditional grammar, and much less on how to reason like a linguist. However, given the significant decrease in the number of rules of thumb students used (which had no predicting value for grammatical analysis quality), the intervention did have an impact on how students reason about grammatical problems, in their tendency to use superficial tricks. Developing a significant improvement in linguistic manipulation likely requires more learning time or a different pedagogical approach.

The intervention was successful in improving the quality of students' reasoning on the target items, and it also managed to evoke significantly more meta concepts. Given the results of the multiple regression, in which the use of meta concepts was identified as a

powerful predictor for the quality of grammatical reasoning, much of the progress in students' analyzing capabilities can arguably be attributed to their increased metaconcept use. Crucially, the increase in students' metaconcept use may seem like an obvious result given the nature of the intervention, but, given the shortness of the intervention on the one hand and students' lengthy exposure to traditional grammar teaching in their school careers on the other (which encompasses only traditional concepts), it could also very well have been the case that students failed to incorporate meta concepts into their reasoning. Moreover, the grammatical problems the students were asked to tackle, were not simply variants of grammatical problems they encountered in the intervention. Instead, these were problems of a type they had never encountered before, making it unpredictable whether they would find the use of meta concepts helpful in their reasoning about these problems.

In short, the current study set out to gain empirical evidence for the theoretical argument that grammatical learning and instruction could strongly benefit from an approach that aims to make connections between linguistic meta concepts and concepts from traditional grammar (VanRijt&Coppen,2017; VanRijtet al.,2018). Given the strong predictive value of both these types of conceptual knowledge for good quality grammatical reasoning, it seems that this theoretical position can now be validated by empirical data.

STUDY LIMITATIONS:

Although the current study provides several relevant new insights in the area of grammatical or linguistic reasoning, in particular related to the role of linguistic meta concepts, it is not without limitations. Arguably, the most important limitation derives from its exploratory nature, which led to a counterbalanced one group pre-test-post-test

design. The significant progress between the pre-and post-test remains meaningful nonetheless since the progress students made remains restricted to the target items, whereas their reasoning quality in the filler items remained constant. Moreover, the students' increase in reasoning ability and their increased metaconcept use revealed a moderate effect size (0.62 and 0.70, respectively), which is meaningful given the shortness of the intervention.

Follow-up research could nevertheless benefit from a more experimental design, involving a control group and a delayed post-test to measure the long-term effects of the intervention. However, even without the intervention, much has become clear on the characteristics of students' grammatical reasoning in terms of both declarative and procedural knowledge. What is more, the study provides important insights into the question of what characterizes good quality grammatical reasoning, which was derived from the multiple regressions.

Given its exploratory nature, the current study was unable to address the question of whether there is a difference between the use of different meta concepts related to different kinds of concepts from traditional grammar. More research on this topic is needed to gain a further understanding of these relationships.

Finally, since the current study was aimed at university students of Language and Literature, it is unclear to what extent the study's conclusions can be transposed to secondary education, where generally, most grammar education takes place. On the one hand, it might seem that the differences between secondary school students and first-year university students are paramount and that therefore, such transposition is uncalled for. On the other hand, the university students in the current study have not received any training in grammar for at least three years,³

which arguably puts them on par with third-grade secondary school students in this regard. Their metacognitive abilities must have increased since the third grade, but their grammatical subject knowledge most likely has not. Perhaps it is even more likely that their subject knowledge has diminished over the years, which raises the question of what exactly might be needed to incorporate the results of the current study into secondary school grammar teaching.

IMPLICATIONS FOR FUTURE RESEARCH:

Due to the exploratory nature of the current study, many questions on conceptual learning in grammar education remain unanswered. We will address a couple of these issues that in our view are interesting for future research.

First, we argued that the target of grammar education should be to make explicit the implicit knowledge that students already possess. The question is how this can best be done, not only for university students but also for secondary school students. There are good indications that stimulating discussion and inviting students to take different points of view on how to tackle a grammatical problem (multiperspective) can be used to this effect. This supports the assumptions of several scholars, such as Myhill and Jones (2015) and Ribas et al. (2014), who suggest that verbalization is likely to support metalinguistic understanding. A promising venue in this vein of thinking could be to embed grammar teaching in a socio-cultural pedagogical setting, stimulating students to engage in the exploratory talk (e.g., Mercer, 2000), which is known to be able to enhance students' historical reasoning in history classes (Havekes, 2015).

Moreover, in L2 grammar education, contrary to L1 education, sociocultural approaches in grammar learning are quite familiar (e.g. Lantolf, Thorne, & Poehner, 2015).

In future research, in particular for secondary education, the role of exploratory talk in enhancing grammatical understanding should be investigated. At the same time, it has to be taken into account that teachers' knowledge of grammatical concepts (e.g., Sangster et al., 2013) and meta concepts (Van Rijt et al., 2019) is generally rather low, causing pedagogical difficulty in the implementation of such an approach. If grammar education is to benefit from implementing meta concepts into school grammar, it is of great importance that teachers themselves have sufficient knowledge of such meta concepts. On the one hand, this might mean that teachers need to master even more linguistic concepts than they already should, which puts more.

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