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# COGNITIVE LEVELS OF PRAGMALINGUISTIC TYPOLOGY AND GERMAN TEXT COMPREHENSION

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#### **ABSTRACT**

**Aim.** The research aim is to find out the correlation between the comprehension of read texts in German and the different cognitive linking levels such as the propositional, the epistemic and the speech of act level.

**Methods.** In the first phase of the research, we used qualitative content analysis to identify the different cognitive levels in the texts. After that we used a didactic test to determine the text comprehension in German at the A2 language proficiency level.

**Results.** A statistically significant positive relationship was found between reading comprehension performance in German and the propositional level. This means, higher performance in reading comprehension of German texts is manifested if the read texts contain indicators such as indicative sentences and adverbial tenses. Subsequently, we find a tendency correlation between the comprehension of German texts and the level of speech acts. No statistically significant relationship was found in the variable of epistemic level and German text comprehension.



Conclusion. Our research showed that the epistemic level indicators and the speech act level indicators made it difficult for the learners to comprehend German texts, for this reason it would be necessary that after mastering the simpler phenomena such as the indicative mood, they should fluently start to deal with the indicators of the above levels. In the educational process, it is necessary to focus on the training of word types, on explaining the meanings of these words or expressions in order to develop and broaden the vocabulary of learners.

**Key words**: cognitive levels, pragmalinguistic typology, comprehension, German texts, education.

## **INTRODUCTION**

A constant current trend in foreign language research and its application not only in scientific and professional communications, but also in wider social discourse is the understanding or rather misunderstanding of foreign language texts. The reason for this misunderstanding is sought, as most individuals or learners are proficient in the grammar and vocabulary of a foreign language, but many times they are unable to understand authentic texts, sentence constructions in different social situations and consequently communicate adequately in the target language or assimilate the linguistic context. One possible reason for this is the learner's lack of pragmatic competence (Santoso, 2013) or the involvement of the cognitive levels of the pragmalinguistic typology in working with the text. We consider the link between cognitive process and pragmalinguistic typology as key variables in the comprehension of a foreign language text.

Text comprehension requires not only the individual's ability to read quickly, fluently and without errors, but above all to engage thought processes in reading, or to perceive the deeper meaning and context behind the words, to understand the meaning of the read text, whereby the individual connects his/her experience and knowledge with the information from the read text, reflecting, critically analysing and evaluating the intention of the author of the text. Several research as well as professional works (Ehlers, 2006; Gadušová et al., 2021; Hirschnerová, 2012; Khonamri et al., 2022; Kovárová & Kurtulíková, 2010; Lehrner-te Lindert, 2020; Meireles, 2006; Stranovská & Ficzere, 2020; Szabó & Sokol, 2021; Terpitková, 2013) focus on describing variables associated with the meaning of reading and describe several positive aspects of reading such as enriching an individual's active vocabulary, developing speech, influencing an individual's emotional experience, perceptual and aesthetic orientation. In addition, reading also develops creativity and imagination, promotes abstract thinking, stimulates ideas, helps in the auditory and visual fixation of grammatical phenomena, correct stylistics, and through reading the individual acquires and expands his/her knowledge in various fields. In the context of reading comprehension, we consider it essential to observe and describe an individual's cognitive processes in comprehending texts, which represent the

levels of how they receive, process and use information from the text they read. In order to process the meaning of a text, the learner must use a variety of cognitive strategies and learning techniques and his or her language skills that enable him or her to retain information from the read text and store it in long-term memory.

Further, in the context of foreign language teaching, we consider it essential to deal with pragmalinguistics, because communication takes place in textual contexts. To understand a text, it is necessary to know how to construct syntactically as well as semantically meaningful sentences. In addition, we also need to know what linguistic devices to use so that the individual understands from the text exactly what the author wants to emphasise. This means that it is not only about the production of specific phrases and sentences, but also about under what circumstances and with what intention we use them (Günther & Günther, 2007; Hufeisen & Neuner, 1999; Khonamri et al., 2020; Khonamri et al., 2021).

The cognitive levels of pragmalinguistic typology play a significant role in the process of reading comprehension in a foreign language. These levels interact with each other and provide educators as well as learners with valuable hints as to which sub-processes need to be developed and trained in order for comprehension of the text to be successful. The aim of dealing with these levels is to improve and streamline reading comprehension of foreign language texts, while also forming a basis for identifying potential reading comprehension problems.

# THE ESSENCE OF READING COMPREHENSION IN A FOREIGN LANGUAGE AND THE COGNITIVE PROCESS

Reading comprehension skill is one of the receptive communications skills in which the information received is contained in the written text and the individual learns about it while reading (Hirschnerová, 2012). This term is primarily used when reading in a foreign language. The perception of the term reading comprehension skill is many times confused with the term reading literacy, and the two terms are often considered as synonymous. Reading literacy defines the complex development of reading skills that are necessary for effective work with a text (Terpitková, 2013).

According to Dana Kovárová and Alena Kurtulíková (2010), the skill to read is a primary characteristic of an individual and is a condition for his/her application in society. In the process of reading, it is a two-way relationship between the text and the reader, whereby the individual uses adequate ways to determine the characters, tries to find the essence and meaning of the text, and finally is able to connect new information with the knowledge he/she has gained from another text, he/she is able to apply it using logical procedures.

The process of reading comprehension in a foreign language is largely influenced by the individual's prior knowledge, which can be defined as

experience or ideas that Peter Gavora (2003) refers to as world knowledge. During reading, an individual gathers information from texts, connects his/her prior knowledge with information from the text, makes connections and draws conclusions. This information helps him or her to better understand what he or she is reading. This knowledge further allows the individual to find different relationships between events and situations in the text.

Prior knowledge in reading comprehension in foreign language includes the individual's linguistic, cultural and stylistic background knowledge.

The importance of the reader's linguistic knowledge in the target language is an important determinant of reading comprehension. It includes not only knowledge of pronunciation and letter combinations, but also mastering and using vocabulary with appropriate meanings. The breadth and depth of vocabulary influences reading comprehension, primarily at lower language levels, but it also plays an essential role in later phases of foreign language learning, depending on the complexity of the text. Similarities or differences between native and foreign languages play significant role in text comprehension, too, especially in the area of morphological and syntactic structures, which require different reading strategies in different languages (Ehlers, 1998).

Cultural assumptions and knowledge are another factor that can influence the comprehension and interpretation of a read text. Authors of texts usually assume this cultural knowledge of the reader, therefore it remains unspoken in the text. In order to infer and anticipate the text properly, the skill of seeing the deeper meaning behind the words is necessary, which is related to everyday situations and typical roles in the target society (Meireles, 2006). Moreover, to understand the meaning of a foreign language text, the reader must overcome cultural barriers and actively involve his or her general sociocultural knowledge in the comprehension process.

Comprehension of foreign language text is also affected by a lack of knowledge about the conventions of writing in a foreign language. Stylistic knowledge of the norms of standard text production is essential for the reader to be able to make predictions about the possible content of a text based on its structure. Another challenge for the reader is the identification of traditional stylistic markers in a foreign language such as different stylistic genres and forms (Fabricius-Hansen, 2002; Solmecke, 1993; Wolff, 1996).

The above implies the fact that there are a number of definitions that focus on reading comprehension in a foreign language. In our context, we see this concept not only as a process of identifying letters and syllables and assigning meanings to linguistic units as stated by Zuzana Hirschnerová (2012), Marianna Terpitková (2013), Kovárová and Kurtulíková (2010), Keith Rayner (1998) and Hossein Nassaji (2003), but rather as understanding the meaning of the read text, whereby the individual combines his/her experience and knowledge with the information from the read text, reflects, critically analyses and evaluates the author's intention according to his/

her own knowledge. Comprehension of the text is therefore understood as retrieving key information from the text, processing and integrating the information into a system of knowledge (Cibáková, 2012).

The cognitive process of reading comprehension (reception) consists of five successive levels, which are arranged hierarchically and should be approached as follows – at first the lower and then the higher levels when working with the text.

The first level of the cognitive process is letter perception, by which we mean the process when learners must identify letters and know which syllables are usually associated with these letters, with other words relate the syllables to the individual graphemes of a word. Subsequently, meanings and pronunciations are assigned to them (Lenhard, 2019).

Explicit information processing refers to the learner's ability to identify information that is found directly in the text, i.e. it is phrased similarly in both the text being read and the related tasks. With this type of information processing, the learner is able to find the correct solutions in the text much easier and faster than with implicit information.

Deduction (inference) is another sub-process in which information is not explicitly formulated in the text, i.e. it is not directly expressed in the text. This information is called implicit information. This means that in order to be able to infer or deduce key information from the text, the learner must be able to relate the information from the text to his/her previous experience and knowledge.

A learner who can interpret the information given in the text and at the same time integrate it with his existing knowledge and experience declares that he/she is able to construct meaning beyond the meaning of the text by linking the content of the text to his/her own background knowledge. He/she is also able to assess the meaning of the text and explain, justify, compare, classify, assign, generalise, apply and connect the information in the text with other sources (Liptáková & Cibáková, 2013; Metelková Svobodová, 2013; Nuttall, 2005).

The highest level of reading comprehension is critical thinking and text evaluation, which is understood as the learner's ability to critically analyse a read text in terms of content and language. In analysis, the learner breaks down the material into its component parts and determines how they relate to each other and to the overall structure of the text. At the same time, he/she distinguishes the essential information from the mass of information and the main idea of the text and then looks for connections and relationships between them (Azizi et al., 2020; Brestenská et al., 2014; Tomčíková, 2013; Vincejová, 2013). In addition, the learner evaluates the quality of the realisation of the author's communicative intention, using not only his/her knowledge and experience, but also the acquired communicative competence (Liptáková & Cibáková, 2013; Stranovská et al., 2020).

# COGNITIVE LEVELS OF PRAGMALINGUISTIC TYPOLOGY AND TEXT COMPREHENSION

Pragmatic competence is the learner's ability to use a foreign language not only orally, but also in writing in a way that is appropriate to the situation and context and is therefore an integral part of communicative language competence. Pragmatic competence, derived from the Greek word pragma (action), focuses on the functional use of a foreign language by specific speakers in specific situations. Therefore, the linguistic, situational, social and cultural context, in which the foreign language is used, is very important. Pragmatic competence enables learners to adequately and appropriately realise their communicative intentions in a foreign language and develop the foreign language discourse abilities that are essential for cultural participation and intercultural exchange (Siebold, 2008).

In order to investigate pragmalinguistics in relation with text comprehension in German we apply pragmalinguistic typology which is closely linked to Eve Sweetser's (1990) cognitive theory. Sweetser's cognitive theory deals with the cognitive level of the individual. The starting point of Sweetser's approach is George Lakoff's theory, according to which a large part of polysemy is related to the metaphorical functioning of our cognitive apparat (Lakoff & Johnson, 1980; Lakoff, 1987). Cognitively oriented approaches are generally based on the idea that individual lexical units have a concrete (core) meaning from which the whole spectrum of even their abstract uses can be described or explained by means of cognitive-metaphorical processes (so called metaphorisation) (Ferraresi, 2011).

Sweetser's (1990) teachings continued to be influenced by speech act theory, the foundation of which was laid by John Langshaw Austin (1962) and John Searle (1971). Austin (1962) and Searle (1971) argued that uttered sentences/statements always perform certain actions as well, such as a prompt, an assertion or a promise. In other words, the sender (speaker) and the receiver do not just exchange information with each other, but perform different kinds of actions, which they called speech acts.

The theories analysed show that Sweetser's learning is closely related to the cognitive level of text comprehension, using modal and function words as well as performative verbs to express the speaker's intention.

Sweetser's (1990) cognitive level is depicted by three distinct connecting levels, which are as follows:

- propositional level,
- epistemic level,
- speech act level (Weiss, 2016).

The propositional level is considered as the basic level, which we speak of when the superordinate linking expression contains a reportive phrase. This means that the expression has a so called constative character. Accord-

ing to Sebastian Gagel (2017), this includes statements and descriptions. The indicators of the reportive include indicative sentences, past tenses and adverbial tenses (Gagel, 2017; Weiss, 2016).

The epistemic level means when the superordinate linking expression contains estimative, evaluative or identificative phrase. Typical for estimative are those expressions that are expressed in considerations, assertions, conjectures or in assumptions. Identical features are modal verbs. According to their meaning on the part of the speaker, they express objective or subjective modality. Other indicators of the estimative are subjunctive clauses and adverbs such as *wahrscheinlich* [probably], *möglicherweise* [perhaps] or *allerdings* [of course]. Evaluatives include expressions such as evaluative judgements and evaluations. Typical indicators are evaluative adjectives, evaluative nouns and evaluative verbs. Gagel (2017) also lists interjections as other identical features. The last subtype of epistemic level is the so called identificative, which expresses hopes, expectations or feelings in speech. Indicators of identificative are adverbs such as *hoffentlich* [hopefully] or *gl*ücklicherweise [fortunately] (Gagel, 2017).

The third level is the so called speech act level, which is recognisable by means of performative verbs. The performative verbs are principally verbs of speaking. The use of such a verb implies the performance of the corresponding illocutionary act as well as a reference to this performance. This includes verbs such as *bedauern* [regret] or *befehlen* [command] (Weiss, 2016).

The speech act level can be characterised by the following types of illocution:

- Directives occur in orders, appeals and requests, and also in sentences containing verbs such as *fordern* [demand] or *fragen* [ask].
- The optative expresses a so called wish phrase.
- The interrogative expresses interrogative sentences.
- The commissive denotes such sentences in which the speaker undertakes to perform a future act. Commissive sentences contain commonly used verbs such as *anbieten* [offer], *drohen* [threaten] or *schw*ören [swear].
- The expressive voice expresses sentences in which the speaker expresses his or her emotions and feelings. Such sentences contain verbs such as *danken* [thank] or *sich entschuldigen* [apologize].
- The declarative is expressed by verbs such as *trauen* [trust] or *verurteilen* [condemn] (Gagel, 2017; Szabó, 2018; Weiss, 2016).

#### **EMPIRICAL RESEARCH**

#### Research aim

Our research investigates different ways to develop individuals' reading skills in the educational process in German based on pragmalinguistic typology. In examining reading skills, we draw on the theory of pragma-

linguistics, which analyses in detail the cognitive level of an individual and describes the linguistic resources that help them to understand written text.

The research aim is to establish the link between reading comprehension and individual cognitive linking level.

## Research hypotheses

Considering the aim of the research, we define the research hypotheses. The research hypotheses relate to quantitative research in terms of comprehension and cognitive level.

Research hypotheses:

- H<sub>1</sub>: There is a relationship between propositional level and text comprehension.
- H<sub>2</sub>: There is a relationship between epistemic level and text comprehension.
- H<sub>3</sub>: There is a relationship between speech act level and text comprehension.

# Research sample

The research sample was selected by purposive sampling, within which the essential features of the selection being a foreign language such as German and the type of secondary school such as eight-year and four-year grammar schools. The research was carried out in western Slovakia, in the Nitra region. In the research 171 learners participated (90 girls and 81 boys) who had been learning German (at A2 level) for approximately 5 years and whose average age was 17 years.

#### Research methods

We used research methods of quantitative character, the comprehension of the German text was measured by a didactic test of text comprehension in German.

As we describe our research methods it is important to note that this article is part of a large research project APVV-17-0071 within which we validated learners' reading comprehension through an intervention program (Hockicková, et al., 2020; Stranovská et al., 2022). In this article we describe two phases we conducted before we measured reading comprehension through the intervention program. The aim of this chapter is therefore to describe the research methods and procedure of how the texts for reading comprehension were compiled and validated.

In the first phase of the research a didactic test for reading comprehension was constructed and validated, which we then analysed using qualitative content analysis, because we found out that the texts of the didactic test were difficult and challenging for the learners. Using qualitative content analysis of the text, we detected the occurrence (frequency) of the individual cognitive linking levels in German texts and characterised them using pragmalinguistic indicators.

An example from the qualitative content analysis:

Liebe Pia, leider kann ich dich nicht abholen, deshalb musst du den Weg allein finden [Dear Pia, unfortunately I cannot pick you up, therefore you must find the way alone] (Hockicková et al., 2020).

The above mentioned sentence represents the epistemic level, because it contains the characteristic features of the identificative and the estimative. According to Gagel (2017), the modal adverb *leider* [unfortunately], is typical for the identificative. In this sentence it expresses regret of the speaker who explains to his girlfriend that for some reason he cannot go to fetch her. On the other hand, the sentence contains the conjunction *deshalb* [therefore], which expresses the relation of cause and effect, as well as modal verbs *kann nicht* [cannot] and *musst* [must], which are typical for the estimative, describing an objective modality on the part of the speaker. The speaker cannot pick up his girlfriend, for which reason she is forced to find her way to her friend on her own.

In the second phase of the research, learners were given a didactic test of text comprehension in German, which was developed by a group of experts within the project APVV-17-0071 Promoting reading literacy in mother tongue and foreign language, based on the Common European Framework of Reference (CEFR) and the State Educational Program. The authors of the test are Beáta Hockicková, Eva Stranovská, Erzsébet Szabó, Anikó Ficzere, Svetlana Stančeková and Ervín Weiss (2020). The didactic test of reading comprehension was designed to test learners' reading skills in German at the A2 language proficiency level. Questions and tasks were created for the didactic text and administered anonymously, without recording the learners' names. Each learner was given a numerical code which was used to link the data from the individual learners.

Our measurement consisted exclusively of a written part, which was implemented in the form of a written test: reading comprehension test in German for A2 level. The test was not divided into subtests, it was entirely devoted to the measurement of receptive reading comprehension skill and contained texts for both intensive (3 texts) and extensive (2 texts) reading. The test contained 20 items, three of which were open-ended (the items required learners to answer two questions: What does he do? How often? according to the text they were reading) and the others were closed-ended. The learners marked the correct answers on the answer sheet for the different types of items: multiple-choice item (one correct answer), matching item and a completion item. The number of items varied depending on the content structure of the test (Lalinská, 2020).

While compiling the test, the authors have taken into account topics that are close and familiar to learners and that they encounter in their everyday life. In the didactic test, the main topics were: interpersonal relations – written communication between friends describing the journey to a friend; environmental protection – how the environment can be protected; enter-

tainment – *BRAVO* magazine focusing on topics popular among young people; hobbies of people of different ages; description and instructions of the game "Story Cubes" (Szabó, 2022).

The evaluation of the test was done continuously by the test developers based on the scoring instructions for the items (0-incorrect answer, 1-correct answer). The test results were then compiled into an Excel spreadsheet, in which all relevant information for which we were looking for answers was recorded such as school and class affiliation and learners' code. The learners' responses to each item were also entered into the Excel database. The initial data in the Excel spreadsheet was then processed using Winsteps software (Rasch single-item logistic model) in order to detect the difficulty of individual items.

The output data allowed us to interpret the test results with respect to the chosen model and to judge the items on the basis of estimates of their difficulty, discriminant value, and pseudo-randomness rate (for multiple-choice items). At the same time, we were also able to evaluate learners' performance not only through their final scores, but also by estimating their ability and determining whether the learners to whom the test was administered were proficient in a given foreign language domain (in the language activity of reading comprehension) at the appropriate language level. The reliability rate of the test was Cronbach's  $\alpha = 0.84$  (Lalinská, 2020).

#### Results

In line with the stated research hypotheses, comprehension of the German text was examined in relation to the different cognitive linking levels. Table 1 shows the dependency analysis using Kendall's tau b.

**Table 1.**Dependency analysis using Kendall's tau b

| Reading<br>comprehension in<br>German language |                            | Prop. level | Epist. level | Speech act level  |
|--|----------------------------|-------------|--------------|-------------------|
|  | Correlation<br>Coefficient | -,600*      | -,105        | ,447              |
|  | Sig. (2-tailed)            | ,026        | ,702         | ,081 <sup>+</sup> |

Note. Prop. level - propositional level, Epist. level - epistemic level

Source. Own research.

Statistical significance at the level p = .05 (\*), p = .01 (\*\*), p = .001 (\*\*\*).

The Kendall's tau b statistical method (Table 1) was used to examine the relationship between reading comprehension performance in German and each cognitive linking level, through which a statistically significant positive relationship between reading comprehension performance in German and the propositional level (p = 0.026) was found in our research. This means that the more indicators occur in German texts at the propositional level, the more learners' performance in comprehending these texts increases.

Consequently, we find a tendency relationship, or a tendency to correlate, between the comprehension of German texts and the level of speech acts (p = 0,081). No statistically significant relationship was found in the variable epistemic cognitive linking level and German text comprehension.

#### DISCUSSION AND CONCLUSION

Through our research, we have sought to contribute to addressing a partial, but important area of applied linguistics, namely the comprehension of a read foreign language text in the context of pragmalinguistics. We examined the relationship between individual cognitive linking levels and reading comprehension by looking at different cognitive variables in learners' comprehension of German texts.

We hypothesised that there is a relationship between propositional level and text comprehension. H, was confirmed. We found a statistically significant relationship between propositional level and text comprehension in German, at A2 language proficiency level. This means that most learners perform better in reading comprehension in German if the read texts contain mainly propositional level indicators such as indicative sentences, past tenses or adverbial tenses, of which indicative sentences and adverbial tenses were the most frequent in our texts. These sentences were mainly of a constructive character as reported by Gagel (2017) and Weiss (2016) and included mainly descriptions of a trip, the content of the BRAVO magazine, hobbies and instructions for playing the board game "Story Cubes". This means that if the texts are neutral and do not contain modality features such as modal verbs, adverbs or performative utterances, they are more comprehensible for the learners. For application in German language education, this implies that the teaching process in schools should progress from simpler indicators to more complex ones. As long as the learners have not mastered simpler indicators such as in our case the indicative mood or indicative sentences, they should not focus on more complex indicators such as modal verbs or adverbs in the classroom, which already require advanced linguistic knowledge of the learners appropriate to the A2 language level.

We further hypothesised that there is a relationship between epistemic level and text comprehension.  $H_2$  was not confirmed. There was no relation between epistemic level and comprehension of the German text. The more epistemic level indicators (expressing modality – adverbs, evaluative verbs, evaluative nouns, evaluative adjectives, conjunctions, modal words) occur in the texts, the lower the reading comprehension performance. This means that in the educational process it is necessary to focus on training word types, on explaining the meanings of these words or expressions, in order to develop and expand the vocabulary of learners. In addition, it is also recommended to work with vocabulary in different contexts so that learners understand not only the meaning, but also the function of these word types.

We also hypothesised that there is a relationship between the level of speech acts and text comprehension. H<sub>2</sub> was partially confirmed. The relationship between the level of speech acts and the success of German text comprehension was partially confirmed. We found a tendential relationship or a tendency of further increase in the reading comprehension variable. The results of the research show that learners comprehend German texts if the indicators of the level of speech acts are present in the texts. These indicators are mainly performative verbs, which are used to express the actions performed, such as asking or thanking. We believe that most of the performative verbs are familiar to learners from everyday life, and these verbs are also frequently found in various other teaching texts that learners work with in the classroom. It would be desirable to investigate the comprehension of the speech act level indicators in another experimental group of learners, since it appears that despite the mastery of many performative verbs whose meaning causes difficulties for learners in the process of reading comprehension of German texts. For this reason, we recommend that learners should be given conversational lessons in which they have space to practice the meanings of performative verbs in different situations.

Our research showed that the epistemic level indicators and the speech act level indicators made it difficult for learners to comprehend when reading German texts, for this reason it would be necessary that after mastering the simpler phenomena such as the indicative mood, they should fluently begin to deal with the more difficult phenomena, the indicators of the above mentioned levels.

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