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**Analysis of Cognitive Structuration in Context of Verbal
Productivity**

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Abstract

The paper presents an interdisciplinary connection between psychology and linguistics. We analyze ways of cognitive structuration of verbal information with the help of cognitive style 'category width'. Verbal productivity is being examined in the selection of politeness factors in requesting speech acts in foreign language and mother tongue depending on the presence of social distance and dominance. The results have shown that 'category width' is manifested to a greater extent according to selected social factors in situations where social distance is present. It is remarkable that individual factors are more frequently used in foreign languages than in the mother tongue.

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Introduction

1. Introduction

The sub-disciplines of psychology and linguistics focus on expression of human individuality, uniqueness and the particulars of mutual communication in various situations and contexts. Each individual perceives, structures, produces, analyzes and interprets speech in a foreign language in a specific way. He/she uses specific mental processes such as categorization of perception, selectivity, selective filtering, inference, lexical, semantic, morphological and syntactic structuring, context, co-articulation and others (Sternberg, 2009), all with the aim to select the language means in a particular communicative situation. We perceive the meaning of cognitive psychology in psycholinguistics in examining the human ability to categorize and understand syntactic and semantic structures. Bock (1990, in Sternberg 2009) claims that people have the ability of the mental process of word classifications on the basis of syntactic categories, and this classification process is separated from the meaning of words. The process of cognitive structuration is the research subject of many cognitive, personality and social oriented psychologists. They focus mainly on correlates which participate on the preferred way of processing information, deciding, coping strategies, etc.

From the point of understanding and producing communication acts, it is interesting to examine individual differences in strategies of verbal information processing. We perceive the meaning in ways of cognitive processing in the process of foreign language acquisition and its further production and creativity in creation of linguistic structures.

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2. 'Category width' cognitive style and speech act theory

The dimension of 'category width' cognitive style relates to individual differences in width categories that are conditioned by differences in strategies of information processing. Pettigrew (1958) summarizes in his evaluative study areas which experimented with this dimension (e.g. multi-attribute learning task, memory experiments, pair-associative learning, identification of faces on photographs, hemispheric and lateral preference, connection with blood pressure, etc.). The results were interpreted as strategies of diverse information processing (Jurčová, Sarmány-Schuller, 1993):

1. Equivalence area - the problem lies in different processing rates of the same or similar conception. Broad categorizer has an expanding outreach and shows lower concentration on detailed differences in stimuli. Narrow categorizer has exactly the opposite strategy; he/she concentrates on details.
2. Risk-taking – interpretation is bound to strategy of error tolerance. Broad categorizer risks negative cases in the endeavour to achieve the maximum of positive cases. Narrow categorizer, on the opposite, minimizes the number of negative cases. Narrow categorizer can prefer the option to be mistaken, broad categorizer prefers the risk of non-reaction to a change, so in this case, characteristics of sensitivity to stimuli changes are crucial.
3. Gender differences - the interpretation relates to a shift in concentration on differences in perception, conceptual basics of abstraction and synthesis. Men are more likely to take risks in conceptual tasks and women in tasks which require evaluation. Men choose rather strict cognitive dimensions and women the more motivational ones.
4. Cognitive filtering - individuals can create extremely narrow perception categories; they select stimuli from their surroundings and hold on to one stimulus into detail.

Cognitive styles were analyzed by Sarmány-Schuller (1995b, 1997, 2009), Kováčová (1995a), Jurčová, Sarmány-Schuller (1993), Massaro, Ferguson (1993) in the area of risk-taking, anxiety, heuristic versus algorithmic orientation, psychometric intelligence, decision-making, procrastination, creativity, interpersonal attractiveness, altruism, group cohesion, and speech perception.

Cognitive psychology and linguistics meet in the description of language features in six points. Sternberg (2009), referring to several sources, gradually introduces these features:

- a) communicativeness of language, arbitrary symbolism,
- c) arrangement according to rules,
- d) structuring on many levels,
- e) generativeness, productivity,
- f) dynamism.

And the fifth language feature, verbal productivity, is according to Sternberg (2009) our unlimited linguistic creativity in the speech activity. Speech activity and its individual acts are studied mainly within pragmalinguistics. It also studies the theory of speech acts, which was elaborated by Austin (1962) and Searle (1975) as a theory of differentiating literal meaning of speech acts from the fact, what speech acts really convey, or the difference between their form, function and rules that are used in the context of situational and individual communication variables. The politeness theory we used when examining the production of speech acts of three basic categorizer types is a Brown and Levinson model (1978-1987) that is, in various elaborated forms, still applicable today and forms the basis for newer models and definitions of politeness. Today authors examining politeness rather focus on cultural relativity of politeness (Blum-Kulka, House & Kasper 1989; etc.) and on the transition from examining static aspects of politeness to the dynamic ones. Older forms of static examining of politeness were typical for focusing on speaker's activity, speakers and listener's image, and on rules applied in production politeness speech acts. We consider individual and context variables as dynamising elements that are in production of requests influenced by social dominance and social distance (Brown a Levinson, 1987). Interlocutors maintain a social relation governed by two main axes (Kerbrat-Orecchioni, 1992): horizontal axis (social distance) and vertical axis (social dominance). According to Díaz Pérez (2003), the manifestations of social dominance follow from the social status of the interlocutors and they have a varying degree of usability in the respective situations (e.g. in combination with social distance). Unlike social dominance, social distance is not a hierarchical relationship; on the contrary, it is connected with the idea of closeness, which differs across the cultures and it is manifested differences in the language.

There are only few studies about the relation between the continuum of politeness principle and social distance, and even less about the relation between politeness and social dominance. Díaz-Pérez (2003) analyzed external elements of requests in foreign language and mother tongue - social factors:

1. Attention getter - a combination of forms expressing social roles: e.g. addressing (title, first name, last name, friendly appeal markers) and politeness (*sorry (Vous form) / sorry (Tu form), please, let me ask you, hello, hi, wassup*).
2. Speaker's perspective - e.g.: ... *can I borrow...*, ... *can I copy...*, *can I use your mobile phone ?*, etc. In comparison with the listener's perspective, it is a more indirect way to express politeness. The speaker emphasizes that he/she assumes some responsibility or effort for fulfilling the request and apparently helps the listener to fulfil the request.
3. Listener's perspective - e.g.: *could you lend me (Vous form) ... , could you hand me (To form)...* The speaker uses the listener's perspective when he/she is unsure about whether it is fine to address his/her communication partner directly or affect his/her decisions so he/she feels no imminent threat from not fulfilling the request mainly if the matter concerns common actions where there are no high demands on behalf of the listener.

In the same way Diaz Perez (2003) analyzed the use of expressive external factors in a request:

1. Politeness factors (e.g.: *thank you, please* – immediately before or after the request core).
2. Pre-sequences (Hello Mary, *I wasn't at school yesterday, I felt sick so I stayed home*. Can you please lend me... ; Hello, professor XY. *I have a request on you. I forgot my phone at home and I need to make an urgent call*. Can I use your phone, please? etc.),
3. Post-sequences/supporting details (e.g.: Could I use your phone? *It is very important to me and I have no other phone at hand*).
4. Mitigating devices (e.g.: *Sorry for interrupting*, I remembered that..).
5. Minimizers (..I would like to ask you for a *small* favour.; Could I have it *for a minute* to copy it? I need it for my work. *Only a couple of chapters*. *I'll return it immediately*...).

3. Data collection

The aim of the study is to determine the connection between 'category width' cognitive style and individual social and expressive factors in requesting speech act in foreign language and mother tongue depending on the presence of social dominance and social distance. We focus on a group of social indicators: attention getters, listener's perspective and speaker's perspective, and on a group of expressive indicators: politeness factors (thank you, please), pre-sequences, post-sequences, mitigating devices, and minimizers.

The research was carried out within the APVV Project - Intervention Linguistic Programme at the Faculty of Education, Constantine the Philosopher University in Nitra. 147 students of the study programme English Language and Culture took part in the research. In the process of acquiring data, we used following research methods: *Estimation Scale C-W (Category Width)* which measures the cognitive style category width and a real estimation. The tasks are not aimed at determining knowledge; they should reveal how students can estimate the answer to a given task.

The Speech acts simulation questionnaire examines the manifestation of external and internal factors in speech acts of requests, in apologies, thanks and complaints, which are basic politeness speech acts. Considering the large scale of gathered data we focus on analyzing the use of chosen factors, particularly social and expressive external factors of a request in simulated situations with social distance/closeness and social dominance, because particularly the use of these factors varies considerably depending on the expression of individual categorizer type.

4. Data analysis

In the analysis of selection of social and expressive factors in formulating requests 'category width' cognitive style, we use simulations of social distance and social dominance in particular social situations. As opposed to social distance typical for Situations S3, S4 and S5 (social distance V+), in Situations S1 and S2 speakers knew each other and a social closeness (V-) could be observed. Social dominance (a different social status of interlocutors) is potentially present in Situations S2, S3 and S4 (social dominance M+), but it is absent in situations of the interlocutors' same social status of, specifically in Situations S1 and S5 (M-).

Table 1 Correlation analysis of 'category width' cognitive style, social and expressive factors in formulating requests in foreign language and mother tongue

		Category width							
Variable		F1	F2	F3	F4	F5	F6	F7	F8
Foreign language	a+b/S1	-0.034	-0.002	-0.011	0.044	0.022	0.027	0.022	0.012
	a+b/S2	0.028	-0.162	0.140	0.011	-0.054	-0.063	0.020	-0.079
	a+b/S3	0.157	0.044	-0.102	-0.043	0.021	0.083	0.032	-0.074
	a+b/S4	-0.032	0.067	-0.168	-0.146	-0.017	-0.074	0.086	0.074
	a+b/S5	0.025	0.016	0.009	-0.116	-0.026	0.025	0.061	0.021
Mother tongue	a+b/S1	-0.057	-0.014	0.014	-0.120	0.028	-0.036	-0.030	0.028
	a+b/S2	-0.043	-0.127	0.081	-0.059	-0.006	-0.055	-0.006	-0.033
	a+b/S3	0.047	0.001	-0.032	0	0.007	0.004	0.096	-0.018
	a+b/S4	0.025	-0.038	-0.014	-0.077	-0.054	-0.048	0.071	0.088
	a+b/S5	-0.094	-0.023	0.071	-0.048	-0.073	0.028	-0.081	-0.041

Legend:

F1 – attention getter, F2 – listener's perspective, F3 – speaker's perspective, F4 – politeness strategy (please, thank you), F5 – pre-sequences, F6 – post-sequences, F7 – mitigating devices, F8 – minimizers, S1-S5 – social situation 1 – social situation 5, a+b – category width.

In the situation of social closeness and dominance (S2) we found statistically significant correlations between 'category width' cognitive style (*a+b*) and social factor in formulating requests in foreign language as speaker's perspective (F3). The broader the category (broad categorizer) the more frequent use of listener's perspective in speech production (the recipient is sure that he/she can address their communication partner directly, can affect his/her decisions so he/she feels no imminent threat from not fulfilling the request - *could you lend me (Tu form)*). A negative statistically significant correlation of the category width was indicated in the selection of social factor speaker's perspective (F2). The narrower the category (narrow categorizer) the more frequent use of speaker's perspective in forming requests (recipient emphasizes that he/she assumes some responsibility or effort for fulfilling the request - *...can I borrow...*).

In situations of social distance and social dominance we measured statistically significant correlations between category width and expressive factors - attention getters (F4) and negative correlations between category width and speaker's perspective (F3) and politeness factor (F4). Broad category depending on social dominance and social distance is manifested in forming requests in foreign language by using the speaker's perspective and politeness factor.

In situations where social distance is present and social dominance is absent, in cases of foreign language requests we observed a negative correlation between category width cognitive style and politeness element occurrence (F4). The narrower and the more detailed is the categorization of verbal information, the less narrow categorizer uses politeness elements in the formulation of requests in a foreign language. We observe less social and expressive factors in category width in the mother tongue. Statistically significant negative correlations appeared between category width and politeness element (F4) in situations of social closeness, where no social dominance was present. The narrower the category, the more frequent was the use of politeness elements. In situations of social closeness, where social dominance is present, we noticed statistically significant negative correlations between category width and the speaker's perspective (F2). The narrower the category, the more frequent use of the speaker's perspective in formulation of requests in the mother tongue.

5. Conclusion

Our research was conducted to find out ways of cognitive structuration or cognitive processing of mother tongue and foreign language by manifesting social and expressive factors in the formulation of requests. We observed correlations between selected verbal variables, such as social factors: *attention getters*, *speaker's perspective*, *listener's perspective*, and expressive factors: *politeness elements*, *minimizers*, *pre-sequences*, *mitigating devices*, *post-sequences*, and personal-cognitive characteristics: *category width cognitive style*. Cognitive structuration is closely connected with verbal structuration of foreign language and mother tongue, cognitive anchoring in the culture of particular languages, and subsequent verbal productivity. In the process of language learning, an individual processes abstract structures, develops an attitude towards the language, tries to analyze, deduce and subsequently make a synthesis.

The research results have shown that category width cognitive style is manifested in a foreign language by the use of the listener's perspective; by the speaker's perspective in situations of social closeness and social dominance; by the use of attention getters, speaker's perspective, and politeness elements in situations of social distance and social dominance; and by the use of politeness elements in situations of social distance where no social dominance is present.

Within the group of expressive factors, we found a relation with the politeness element which is the basic convention element, such as *please* and *thank you*. Respondents made a choice based on traditional politeness norms of their mother tongue and had a tendency to transfer it into the foreign language structure.

The category width is more related to the selection of social factors in foreign language and mother tongue, than to the selection of expressive factors in combined situations of social dominance and social distance. The scenario of the given situation, according to which he/she produces the particular speech act, is different for every interlocutor. In foreign language, our respondents use alternatives of perspective elements depending on the category width, the way of structuration in particular situation. If individuals process verbal information from socially distant environment holistically (broad categorizer), the more frequently they use attention getters in formulation of requests, which we interpret as endeavour of broad categorization for interpersonal attractiveness. The selection of category width listener's perspective element in situations of social distance is significant, because in such cases, according to Díaz Pérez (2003) the use of own perspective is expected, in order to lower the pressure on the interlocutor. Broad categorizers try to put the responsibility of his/her request in the communication process on the percipient. As opposed to them, individuals with the detailed processing of verbal information (narrow categorizer) express themselves by using a politeness element and the speaker's perspective, and try to take over the responsibility. This finding can relate to the creation of a sense of certainty by narrow categorizers in cognitive decisions and to intolerance for errors.

Another significant finding is the selection of politeness factors in mother tongue and foreign language. In the mother tongue, they use politeness factors less frequent than in the foreign language. These findings may follow from different processes of automation and processing of foreign language by category width in concentrating on detailed and global differences between certain stimuli, which opens up new possibilities for us to examine. Similarly, not all subjects will necessarily personalize with the situational scenarios in the simulation because each one of them goes through different daily situations. We still believe that simulation is the key to foreign language learning and training of basic communication situations. The simulation of speech acts allows for a broader perspective on the causes and functioning of cultural and individual patterns in communication and, it contributes to the development of self-awareness and communicative competencies of foreign language learners.

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